



Anniversary of India-Japan
Fest in Pinkcity of India

20th Anniversary of
India-Japan Fest in Pinkcity of India

BICON-2025

Biyani International Conference on

FROM COLLABORATION TO TRANSFORMATION:

ADVANCING INDIA-JAPAN YEAR OF SCIENCE,
TECHNOLOGY AND INNOVATION EXCHANGE

September 13-16, 2025
Jaipur, Rajasthan, India

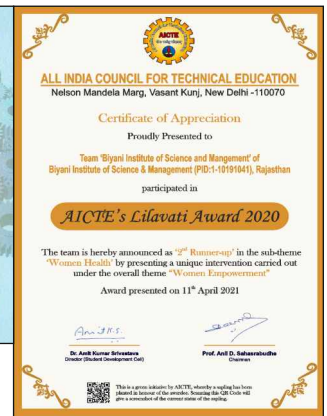
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Minister for Foreign Affairs of Japan extends his deepest regards to
Biyani Group of Colleges
in recognition of its distinguished services in
promoting mutual relationship between Japan and India.
— **Fumio Kishida**, Minister for Foreign Affairs of Japan



The 20th Anniversary India-Japan Fest

BICON-2025



Anniversary of India-Japan
Fest in Pinkcity of India

FROM COLLABORATION TO TRANSFORMATION: ADVANCING INDIA-JAPAN YEAR OF SCIENCE, TECHNOLOGY AND INNOVATION EXCHANGE

Day-1 : (Sat) Sept. 13, 2025

**Synergizing efforts in Science and
Health for Sustainable Development**

Discipline: Science, Nursing & Pharma

Day-2 : (Sun) Sept. 14, 2025

**Global Convergence: Partnerships in
Technology, Business & Law
for connected world**

Discipline: Commerce, Management, IT & Law

Day-3 : (Mon) Sept. 15, 2025

**Shaping a Sustainable Future: Uniting Global
Industry & Academia across Diverse Disciplines**

Discipline: Education & Social Sciences

Day-4 : (Tue) Sept. 16, 2025

**Exploring New Opportunities
for Study and Career in Japan**

Discipline : High School Students

Proceeding of the Conference

ISBN: 978-93-83343-59-1



Organized by:
BIYANI GROUP OF COLLEGES
Jaipur, India

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ISBN: 978-93-83343-59-1

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• Dr. Vishnu Sharma	• Dr. Manish Saini

Designed by:

• Mr. Nilesh Sharma	• Mr. Aditya Sharma

Welcome to the India-Japan Fest in the Pink City of India!

Welcome to the 20th Anniversary of the India–Japan Fest in the Pink City of India!

It is with immense joy and pride that we extend our warm greetings to all participants of the **20th Anniversary Edition** of the Biyani International Conference (**BICON-2025**). As we celebrate two decades of this intellectual journey, we stand at a remarkable milestone that reflects our vision, perseverance, and commitment to advancing knowledge and building bridges between India and Japan.

Since its inception, BICON has served as a platform for academia, industry, and policymakers to come together and explore opportunities for collaboration. Over the years, it has evolved from a regional academic exchange into a truly global forum for dialogue, innovation, and partnership. This special anniversary edition carries the theme “***From Collaboration to Transformation: Advancing India–Japan Year of Science, Technology and Innovation Exchange***” and seeks to open new avenues of research, knowledge-sharing, and meaningful cooperation.

This year’s conference spans four days (**13–16 September 2025**) across three different venues in Jaipur, with each day dedicated to a unique discipline: **Science, Nursing & Pharmacy (Day 1); Commerce, Management, IT & Law (Day 2); Education & Social Sciences (Day 3); and High School Students (Day 4).**

Highlights of BICON-2025:

Inauguration of the Biyani School of Global Languages, beginning with Japanese, to strengthen intercultural understanding and academic mobility.

Biyani Vision 2030: Unveiling the Biyani Academic–Industry Model with Japan at Neemrana, featuring visits to the **Japanese Industrial Zone** to engage with industry leaders and explore collaborations, internships, and career opportunities for students.

HR Conclave: Industry leaders and HR professionals from Japan and across India will discuss evolving workforce dynamics and exchange innovative ideas.

The **Call for Original Articles and Abstract** has generated an overwhelming response, with accepted submissions to be published in the conference proceedings with ISBNs. This edition will feature 60+ invited talks from distinguished speakers from India and Japan, alongside 350+ abstract and research paper presentations.

We feel deeply honored that this milestone edition of BICON will be graced by the presence of distinguished dignitaries, including **His Excellency Mahamahim Rajyapal Haribhau Bagde, Hon’ble Governor, Shri Prem Chand Bairwa, Deputy Chief Minister and Hon’ble Minister of Higher Education & Technical Education, Government of Rajasthan; Shri**

Gopal Sharma, Hon'ble MLA, Jaipur and Shri Ashok Gehlot, Former Chief Minister of Rajasthan. Their blessings and guidance will inspire us in our journey to build stronger academic and cultural ties between India and Japan.

None of this would have been possible without the tireless efforts of our Organizing Committee, whose dedication has been the backbone of this conference. We extend our heartfelt gratitude to **Dr. Dhyan Singh Gothwal, Dr. Shilpa Bhargava, Dr. Vishnu Sharma, Dr. Smriti Tiwari, and Mr. Virendra Kumar.** Your selfless commitment has ensured the seamless execution of this mega event.

We also sincerely thank the management, day conveners, session moderators, session chairs, and the entire BICON team for their invaluable contributions in making the 20th Anniversary of BICON a truly memorable and impactful milestone. A special word of appreciation goes to **Mr. Nilesh Sharma** for his exceptional creativity and dedication in designing all the conference materials, which have added great value to this edition of BICON.

We are equally grateful to our associates – the **R.A. Poddar Institute of Management (University of Rajasthan, Jaipur)** and the **Education Committee of the Maheshwari Samaj (ECMS), Jaipur** – for partnering with us and providing their venues to conduct the conference. Finally, we extend our heartfelt thanks to all the distinguished speakers, invited speakers, delegates, HR Conclave panellists, industrialists, and every contributor whose presence and participation have enriched BICON-2025 and helped us make this historic 20th anniversary truly remarkable.

As we commemorate two decades of BICON, we believe this conference will not only provide a platform for research and innovation but also spark meaningful collaborations that transform lives and societies. May BICON-2025 be remembered as a turning point for Indo-Japanese academic, cultural, and industrial relations, and as an inspiration for students and scholars to dream big and work towards a sustainable, globally connected future.

We welcome you all once again to BICON-2025 and wish you a fruitful, enlightening, and memorable experience.

Together, we innovate. Together, we inspire. Together, we succeed.

With warmest regards,



Dr. Manish Biyani

Organizing Chair

- Director (Research & Development), Biyani Group of Colleges, India
- Professor (Research), JAIST, Japan



Dr. Radhika Biyani Daga

Conference Convener

Assistant Director,
Biyani Group of Colleges, Jaipur

हरिभाऊ बागडे
राज्यपाल, राजस्थान



संदेश

Haribhau Bagde
Governor, Rajasthan

यह जानकर प्रसन्नता हुई है कि बियानी कॉलेज ऑफ ग्रुप द्वारा "बायकॉन 2025" का आयोजन किया जा रहा है।

यह महत्वपूर्ण है कि महिला शिक्षा को समर्पित आपका यह संस्थान भारत-जापान उद्यमिता और शैक्षिक उन्नयन की साझेदारी के आलोक में यह आयोजन कर रहा है। शिक्षा जीवन का आलोक पथ है। महिला शिक्षा से ही समाज के सर्वांगीण विकास की राहों की और हम उन्मुख हो सकते हैं। विद्यार्थियों के श्रेष्ठ प्रदर्शन के आधार पर उन्हें जीवन में आगे बढ़ने के नवीन अवसर प्रदान करने की आपकी यह पहल सराहनीय है। दो राष्ट्रों के मध्य शैक्षिक और उद्यमिता से जुड़ी इस तरह की साझेदारी "विकसित भारत" की संकल्पना में सहायक होगी, ऐसा विश्वास है।

मेरी इस आयोजन के लिए हार्दिक शुभकामनाएं हैं।

(हरिभाऊ बागडे)

राज भवन, सिविल लाइन्स, जयपुर-302006
Raj Bhawan, Civil Lines, Jaipur-302006
दूरभाष : 0141-2228716-19, 2228611-12, 2228722



**CHIEF MINISTER
RAJASTHAN**

Message

I am delighted to learn that Biyani Group of Colleges, Jaipur is organizing the 20th Biyani International Conference (BICON 2025) on the theme "From Collaboration to Transformation: Advancing India-Japan Year of Science, Technology and Innovation Exchange."

This conference is of special significance as it coincides with the celebration of the India-Japan Year of Science, Technology and Innovation Exchange. The enduring friendship between India and Japan has always been guided by shared values of innovation and mutual growth. Looking ahead, this spirit of collaboration promises to open new horizons of achievement in science, technology and innovation, positioning both nations at the forefront of global progress.

I am confident that BICON 2025 will serve as an inspiring platform for scholars, researchers, industry leaders and students to exchange knowledge and ideas.

I extend my best wishes for the success of this conference and for fruitful deliberations.

(Bhajan Lal Sharma)

अशोक गहलोत

पूर्व मुख्य मंत्री, राजस्थान



49, सिविल लाइन्स, जयपुर-302006

दूरभाष : 0141-2229244

0141-2229255

No. PS/

Jaipur, Sept. 05, 2025

Message

I am happy to know about the efforts taken by Biyani Group of Colleges, Jaipur, in organizing the 20th Biyani International Conference (BICON-2025) from September 13th to 16th, 2025.

The theme of the conference, “From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange”, is both timely and significant. Rajasthan has greatly benefited from the special relationship between India and Japan. For a long time, Rajasthan and Japan have collaborated in both education and industry, and this relationship will continue to grow in the future.

I am confident that this conference will provide an excellent platform for India and Japan to explore the Academia-Industry Interface Model, foster new opportunities for research, and strengthen mutual cooperation. Such initiatives not only promote innovation but also inspire young minds to contribute meaningfully towards global progress.

I extend my best wishes to the organizers and participants for the grand success of this conference.

(Ashok Gehlot)

Dr. Rajeev Biyani

Chairman, Biyani Girls College

Sector-3, Vidyadhar Nagar, Jaipur

पानी बचाओ - बिजली बचाओ - सबको पढ़ाओ - बेटी बचाओ - वृक्ष लगाओ

Dr. Prem Chand Bairwa
Deputy Chief Minister
Government of Rajasthan



Technical Education, Higher Education,
Ayurveda, Yoga & Naturopathy, Unani,
Siddha & Homeopathy (Ayush),
Transport & Road Safety Department

No. Dy. CM/2025/R-7469

Date: 16 September, 2025

MESSAGE

I am delighted on invitation at 20th India-Japan International Conference organized by Biyani Group of Colleges, Jaipur on 13th- 16th September, 2025.

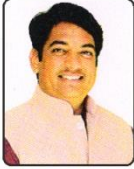
This conference will provide an opportunity to interact between two cultures with "**From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange**". Subjects for discussions and deliberations of importance and would be addressed by eminent experts. It would over all improve the qualities and virtues in the youth - for future of India. Academicians, Industrialists, Scientists and research scholars will have the opportunity to exchange their expertise, build new strategies, and analyse recent advancements in their respective sectors at this four-day conference.

I wish the conference a grand success.

[Dr. PREM CHAND BAIRWA]

Office : 4125, Main Building, Government Secretariat, Jaipur-302005
Resident: 384, Civil Lines, Jaipur-302006 (Raj.)
Ph. No. 0141-2227852, E-mail: dcm.drpcbairwa@rajasthan.gov.in

अविनाश गहलोत
Avinash Gehlot



सामाजिक न्याय एवं अधिकारिता मंत्री
राजस्थान सरकार
Minister of Social Justice and
Empowerment Department
Government of Rajasthan

Message

I am glad to know that the 20th Biyani International Conference (BICON-2025) is being organised on September 13th -14th, 2025 on the theme **"From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange"**.

The theme of the conference will encourage collaboration between Industry and Academia by using futuristic pedagogies and practices in teaching, learning and assessment, as well as deeper engagement between higher education and the industrial ecosystem.

Academicians, industrialists, scientists, and research scholars will have the opportunity to exchange their expertise, build new strategies, and analyse recent advancements in their respective sectors at this four-day conference.

I extend my best wishes for the BICON-2025 success.

(Avinash Gehlot)
Minister

जोराराम कुमावत

मंत्री
पशुपालन, गोपालन, डेयरी
एवं देवस्थान विभाग
राजस्थान सरकार



कार्यालय: 4215, मुख्य भवन, शासन सचिवालय
जयपुर - 302005 (राजस्थान)

दूरभाष : 0141-2227819

ई-मेल : mla.joraram.kumawat@rajasthan.gov.in

संदेश

बियानी गुप ऑफ कॉलेज, जयपुर द्वारा 20वाँ भारत-जापान अंतर्राष्ट्रीय सम्मेलन 13 से 16 सितम्बर, 2025 तक आयोजित किया जा रहा है, जिसमें मुझे आमंत्रित करने के लिए आभार व्यक्त करता हूँ।

यह सम्मेलन दो देशों संस्कृतियों के मध्य संवाद एवं सहभागिता का अवसर प्रदान करेगा, जिसका विषय "सहयोग से रूपांतरण की ओर: विज्ञान का भारत-जापान वर्ष, प्रौद्योगिकी एवं नवाचार विनिमय" है।

चर्चा एवं विचार-विमर्श के विषय अत्यन्त महत्वपूर्ण हैं, जिन पर विशिष्ट विद्वानों द्वारा मार्गदर्शन प्राप्त होगा। यह सम्मेलन निश्चित ही युवाओं में गुणों एवं मूल्यों का विकास करेगा, जो भारत का भविष्य हैं।

उक्त कार्यक्रम के सफल आयोजन किये जाने हेतु मेरी ओर से हार्दिक शुभकामनाएँ।

(जोराराम कुमावत)
मंत्री

गोपाल शर्मा

विधायक

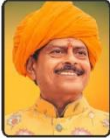
सिविल लाईंस, जयपुर



राजस्थान विधानसभा

9829051742, 8107211887

sharma.gopal@hotmail.com



MESSAGE

I am honored to receive an invitation to the 20th India-Japan International Conference, hosted by the esteemed Biyani Group of Colleges, Jaipur, from September 13-16, 2025.

The theme, "From Collaboration to Transformation: Advancing India-Japan Year of Science, Technology and Innovation Exchange," promises a valuable platform for fostering cultural and intellectual exchange between our nations. I look forward to engaging with distinguished experts on topics of significant importance, which will undoubtedly inspire and empower the youth—the future of India.

I extend my best wishes for a successful and impactful conference.

With warm regards,

(Gopal Sharma)

MLA, Civil Lines, Jaipur

ॐ 'सेवा भवन' 18-बी, गोविंदपुरी-ए, चंबल पॉवर हाउस मार्ग, हवासड़क, जयपुर- 302019



Naveen Jain, IAS
Secretary,
Dept. of Finance (Expenditure)
Govt. of Rajasthan, Jaipur

Message

I am indeed happy to know about effort taken by Biyani Group of Colleges, Jaipur in organizing 20th Biyani International Conference (BICON-2025) on September 13th -16th, 2025.

The theme of the conference is " **From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange**". Rajasthan has been benefited from the special relationship between India and Japan. Since a long time, Rajasthan and Japan have collaborated in both education and industry, and this relationship will continue to grow in the future years.

I am confident that this conference would give an excellent forum for India and Japan to explore the Academia Industry Interface Model.

I wish the conference the very best.

A handwritten signature in blue ink, appearing to read 'Naveen Jain', with a long horizontal stroke extending to the right.



Kishan Kant Pathak, IAS

*Secretary, Dept. of Personnel
Secretary, Women & Child Development Dept.,
Govt. of Rajasthan, Jaipur*

Message

I am glad to know that the 20th Biyani International Conference (BICON-2024) is being organised on September 13th -14th, 2025 on the theme "**From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange**".

The theme of the conference will encourage collaboration between Industry and Academia by using futuristic pedagogies and practices in teaching, learning and assessment, as well as deeper engagement between higher education and the industrial ecosystem.

Academicians, industrialists, scientists, and research scholars will have the opportunity to exchange their expertise, build new strategies, and analyse recent advancements in their respective sectors at this four-day conference.

I extend my best wishes for the BICON-2025 success.



डॉ. ओम प्रकाश बैरवा, भा.प्र.से.
Dr. Om Prakash Bairwa, I.A.S.



आयुक्त
कॉलेज शिक्षा विभाग
राजस्थान सरकार
Commissioner
College Education
Government of Rajasthan



Message

I extend my warmest felicitations to Biyani Group of Colleges, Jaipur for organizing 20th Biyani International Conference (BICON-2025) from 13 to 16 September 2025 with the theme "From Collaboration to Transformation: Celebrating INDIA-JAPAN Year of Science, Technology and Innovation Exchange"

Collaborations between academia and industry play a vital role in strengthening the ecosystem of higher education and innovation. Such initiatives foster knowledge sharing, encourage research and create opportunities for transformative outcomes that benefit society at large.

I extend my best wishes to all the delegates and the organizing committee for the grand success of this International conference.


(Dr. Om Prakash Bairwa)

ब्लॉक नं. 4, डॉ. आर. के. शिक्षा संकुल, जे.एल.एन. मार्ग, जयपुर-302017 (राज.)
Block No. 4, Dr. R.K. Siksha Sankul, J.L.N. Marg, Jaipur-302017 (Raj.)
Phone : 0141-2706847, E-mail : cce_raj@yahoo.com, commissioner.cce@rajasthan.gov.in



Rajasthan University of Health Sciences, Jaipur

(Established by Government of Rajasthan by The Rajasthan University of Health Sciences, Act, 2005)
Sector-18, Kumbha Marg, Pratap Nagar, Tonk Road, Jaipur, Rajasthan-302033

Prof. (Dr.) Pramod Yeole
M.Pharm., Ph.D., D.B.M.
Vice Chancellor



Tel (O) : 0141-2795505
E-mail : vc.sectt@ruhsraj.org
Website: www.ruhsraj.org

NO: F. () P.A / VC Sectt. / 2025 / 118

Dated September 8, 2025

MESSAGE

I am happy and delighted on invitation at 20th India-Japan International Conference organized by most prestigious and pioneer Biyani Group of Colleges, Jaipur on 13th -16th September, 2025.

The theme of the conference will encourage collaboration between Industry and Academia by using futuristic pedagogies and practices in teaching, learning and assessment, as well as deeper engagement between higher education and the industrial ecosystem.

It shall provide an opportunity to interact between two cultures with "From Collaboration to Transformation: Advancing INDIA-JAPAN Year of Science, Technology and Innovation Exchange". Subjects for discussions and deliberations are of great important and would be addressed by eminent experts. It would over all improve the qualities and virtues in the youth - the future of India.

I wish the conference has a grand success.

Prof. (Dr.) Pramod Yeole
Vice Chancellor

FROM THE CONVENER'S DESK

It gives our great pleasure to extend to you all a warm welcome on behalf of all Departments, Biyani Group of Colleges, Jaipur. We are grateful to all the speakers, delegates, organizers and guests, who have accepted our invitation to participate in the BICON 2025.

It is with immense joy and pride that we extend a heartfelt welcome to each one of you on behalf of all the Departments of the Biyani Group of Colleges, Jaipur. We are truly grateful to the distinguished speakers, delegates, organizers, and guests who have so graciously accepted our invitation to participate in BICON 2025.

This conference presents a wonderful opportunity to renew connections, exchange ideas, and explore avenues of mutual interest with colleagues from both Japan and India.

We are delighted to see that the agenda embraces a rich spectrum of thought-provoking themes, reflecting the ever-evolving frontiers of higher education in our two nations and the exciting prospects that lie ahead.

The success of this event is a testament to the sincerity, commitment, and tireless efforts of our management, faculty, staff, and students. Their dedication has made this gathering possible, and we trust their hard work will shine through in every moment of your experience here. We sincerely hope that your time at BICON 2025 proves insightful, enriching, and memorable, leaving a lasting impact well beyond the close of the event.

Once again, we extend our warmest welcome and best wishes for a rewarding participation.



Dr. Shilpa Bhargava
(Dept. of Science)
Convener, Day-1



Dr. Jishu B. George
(Dept. of Nursing)
Convener, Day-1



Dr. Rambir Singh
(Dept. of Pharmacy)
Convener, Day-1



Dr. Shikha Dugar
(Dept. of Commerce &
Management)
Convener, Day-2



Mr. Sachin Bagoriya
(Dept. of IT)
Convener, Day-2



Dr. Sonam Ratnu
(Dept. of Law)
Convener, Day-2



Mr. Virendra Kumar
(Dept. of Humanities)
Convener, Day-3



Dr. Shipra Gupta
(Dept. of Education)
Convener, Day-3

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- Dr. Shikha Dugar
- Dr. Ramakant Gautum
- Ms. Rakhi Khandelwal

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- Mr. Rakesh Kumar Sharma
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- Dr. Kanupriya Sharma
- Dr. Rachna Khandelwal
- Dr. Laxmi Pharaswal
- Dr. Anisha Sharma
- Dr. Manisha Sharma
- Ms. Rumana Ali
- Ms. Diksha Gupta
- Mr. Kishan Lal Choudhary
- Ms. Ritu Agarwal
- Ms. Parul Gothwal
- Ms. Smita Sisodiya
- Ms. Tarawati Choudhary
- Ms. Priya Chauhan
- Mr. Ashok Sharma
- Mr. Mukesh Choudhary
- Ms. Chandni
- Dr. Neetu Khandelwal
- Dr. Ritu Jangid
- Ms. Remya Renjan
- Mr. Mohd. Shakil Parvez Zai
- Ms. Kanchan Sharma
- Ms. Meecal Nobel
- Ms. Gyanwati Agarwal
- Ms. Rashmi Sharma
- Mr. Sushil Kumar Agarwal
- Ms. Bhoomika Sharma
- Ms. Sonakashi Das
- Ms. Latha P.S
- Ms. Sheela Kumari
- Mr. Ramesh Kumar
- Ms. Pooja Rani
- Ms. Prachi

ORGANIZING COMMITTEE (DAY-2 : 14 Sept., 2025):

- Dr. Aparna Dixit
- Mr. Himanshu Mathur
- Mr. Rahul Agarwal
- Ms. Dilpreet Kaur
- Ms. Gunjan Sharma
- Ms. Madhuri Sharma
- Ms. Shabna Ali
- Ms. Sonal Verma
- Dr. Sonam Ratnu
- Mr. Kamlesh Kumar
- Ms. Anu Jangir
- Ms. Gazal Tiwari
- Ms. Hemangini Shekhawat
- Ms. Mumal Singh
- Ms. Shivani Raina
- Ms. Yashi Sharma
- Dr. Surbhi Mittal
- Mr. Mohd. Rafique Quershi
- Ms. Anushka
- Ms. Giti Vatsa
- Ms. Lochan Sharma
- Ms. Preeti Bansal
- Ms. Shruti Kumawat

ORGANIZING COMMITTEE (DAY-3 : 15 Sept., 2025):

• Dr. Arti Gupta	• Dr. Bharti Sharma	• Dr. Tripti Saini
• Dr. Hemlata Mishra	• Ms. Priyanka Sharma	• Ms. Purva Gautam
• Dr. Shipra Gupta	• Ms. Malti Saxena	• Ms. Sonia Sharma
• Dr. Shiv Jhalani	• Mr. Surendra Mathur	• Mr. Dinesh Prajapat
• Dr. Sunita Ku. Sharma	• Ms. Vinita Sharma	• Ms. Shailfali Vijay
• Dr. Sunita Sharma	• Dr. Meenakshi Sharma	• Dr. Mukesh Ku Yadav
• Mr. Shukwinder Singh Dutt	• Ms. Anshita	• Ms. Anshita Gupta
• Ms. Anushka	• Ms. Himanshi Sethi	• Ms. Himanshi Wadhwani
• Ms. Kanishka Joshi	• Ms. Sarika Gupta	• Dr. Ramakant Gautam
• Ms. Lochan Sharma	• Ms. Nirmala Choudhary	• Ms. Ruchika
• Ms. Pushpa Kumawat	• Ms. Sarita Pareek	• Ms. Sarita Sharma
• Ms. Shobha Jangir		

PROGRAMME AT A GLANCE

DAY 1: September 13, 2025 (Saturday)

Theme: *Synergizing Efforts in Science and Health for Sustainable Development*

Time (IST)	Schedule
08:00 AM - 08:30 AM	Registration
08:30 AM - 09:00 AM	Flag Hoisting Ceremony
Inaugural Session (09:10 AM – 11:30 AM)	
Chair: Ms. Kanchan Sharma, Asst. Prof., Biyani Girls College, Jaipur, INDIA	
09:10 AM - 09:20 AM	Introduction of BICON- 2025; 20 th Anniversary Edition Glimpses
09:20 AM - 09:25 AM	Lighting of the Lamp
09:25 AM - 09:30 AM	Ganesh Vandana
09:30 AM - 09:50 AM	Welcome of Guests, Speakers and Japanese Delegates
09:50 AM - 10:00 AM	Opening address by Organizing Chair; BICON-2025 Dr. Manish BIYANI , Director (R&D), Biyani Group of Colleges, INDIA
10:00 AM - 10:10 AM	Address by Chief Guest Shri Prem Chand BAIRWA Dy. Chief Minister & Minister for Higher and Technical Education of Rajasthan, INDIA
10:10 AM - 10:20 AM	Address by Special Guest Shri Gopal SHARMA Legislative Assembly (MLA), Civil Lines, Jaipur, INDIA
10:20 AM - 10:30 AM	Address by Guest of Honor Dr. Pankaj SINGH Director, NIMS University, Jaipur, INDIA
10:30 AM - 10:40 AM	Address by Guest of Honor Dr. Ajay SHARMA Director, State FSL Rajasthan, Jaipur, INDIA
10:40 AM - 10:45 AM	Vote of Thanks by Dr. Sanjay BIYANI Director (Acad.), Biyani Group of Colleges, Jaipur, INDIA
10:45 AM - 11:05 AM	Inaugural Ceremony for Conference Proceedings & Group Photo
11:05 AM - 11:30 AM	Inauguration & Ribbon Cutting Ceremony of <i>Biyani School of Global Languages</i>
11:30 AM - 11:50 AM	High Tea
Technical Session (12:00 PM – 02:30 PM)	
Chair: Dr. Aparna Dixit, IQAC Head, Biyani Girls College, Jaipur, INDIA	
12:00 PM - 12:20 PM	Keynote Speaker-1, Prof. Toshiyuki SAKAKI Professor Emeritus, Toyama Prefectural University, JAPAN
12:20 PM - 12:40 PM	Keynote Speaker-2, Prof. Avinash SONAWANE Department of Bioscience & Biomedical Engineering, IIT Indore, INDIA

12:40 PM - 01:00 PM	Keynote Speaker -3, Prof. Masahiro TAKAGI President, The Society of Biotechnology, Japan Professor Emeritus, JAIST, JAPAN
01:00 PM - 01:20 PM	IL-1, Prof. Kazuhiro MURAKAMI (ONLINE) Kanazawa University, JAPAN
01:20 PM - 1:40 PM	IL-2, Dr. Haridas B. RODE , Senior Principal Scientist, Department of Natural Products and Medicinal Chemistry CSIR-Indian Institute of Chemical Technology, Tarnaka, Hyderabad
01:40 PM - 02:00 PM	IL-3, Prof. Jai PRAKASH , Department of Atmospheric Science, Central University of Rajasthan, INDIA
02:00 PM - 02:20 PM	IL-4, Dr. Rupa VERMA Principal, MKSSS Sitabai Nargundkar College of Nursing, Nagpur, INDIA
02:20 PM - 02:30 PM	Vote of Thanks & Group Photo
02:30 PM - 03:30 PM	Lunch Break & Poster Presentation
Industrial Session & HR Conclave (03:40 PM – 06:10 PM) Chair : Ms. Rumana Ali, Biyani Girls College, Jaipur, INDIA	
03:40 PM - 03:50 PM	Dr. Sudipti ARORA Assistant Director, Dr. B. Lal Institute of Biotechnology, Jaipur, INDIA Founder, Prakrit Foundation, Jaipur, INDIA
03:50 PM - 04:00 PM	Mr. Bheemraj SHARMA Founder of Gaukriti, Inventor of cow Dung Paper, Jaipur, INDIA
04:00 PM - 04:10 PM	Mr. Prateek KUMAWAT Assistant Engineer, State Pollution Control Board, Jaipur, INDIA
04:10 PM - 04:40 PM	Human Resource (HR) Conclave and Panel Discussion Chair : Dr. Smriti Tiwari, Biyani Girls College, Jaipur Panellists: <i>Bhagwan Mahavir Cancer Hospital & research Centre, Amar Jain Hospital, Prakrit Foundation, NewGreen Co., State Pollution Control Board, Alisha Torrent, Naitei Bridge and SF Trading</i>
04:40 PM - 04:50 PM	Vote of Thanks & Group Photo
04:50 PM - 05:50 PM	Oral Presentation Chair : Dr. Aparna Pareek (Department Of Botany, UOR, Jaipur) & Dr. Vishnu Sharma (Research Head, Biyani Girls College, Jaipur)
05:50 PM - 06:00 PM	Award Ceremony & Group Photo
06:00 PM - 06:10 PM	Closing Remarks
06:10 PM Onwards	High-Tea

PROGRAMME AT A GLANCE

DAY 2: September 14, 2025 (Sunday)

Theme: Global Convergence: Partnership in Technology, Business & Law or Connected World

Time (IST)	Schedule
08:30 AM-09:00 AM	Registration
Inaugural Session, (09:00 AM-10:40 AM) Chair: Dr. Smriti Tiwari (Training and Placement Head), BGC, Jaipur, INDIA	
09:00 AM-09:10 AM	Introduction of BICON- 2025: 20 th Anniversary Edition Glimpse
9:10 AM – 09:15 AM	Lighting of the Lamp
09:15 AM-09:20 AM	Saraswati Vandana
09:20 AM- 09:30 AM	Welcome address by Organizing Chair- BICON-2025 Prof. Manish BIYANI , Director (Research & Development) Biyani Group of Colleges, INDIA
09:30 AM – 09:40 AM	Address by Special Guest Dr. Naveen Jain, (IAS) Secretary of Finance (Expenditure), Government of Rajasthan, Jaipur, INDIA
09:40 AM -09:50 AM	Address by Special Guest Prof. B.L. Verma Vice- Chancellor, Vardhman Mahaveer Open University (VMOU), Kota, INDIA
09:50 AM – 10:10 AM	Keynote Speaker 1 Prof. Keiji MIURA , Asso. Professor, Kwansei Gakuin University, JAPAN
10:10 AM - 10:30 AM	Keynote Speaker 2 Prof. Takashi K. SAITO , Professor, Akita Prefectural University, JAPAN
10:30 AM - 10:35 AM	Vote of Thanks by Prof. Dr. Sanjay BIYANI Director (Academics), Biyani Group of Colleges, Jaipur, Rajasthan, INDIA
10:35 AM - 10:40 AM	Group Photo
10:40 AM–11:10 AM	High Tea
Invited Technical Session, (11:20 AM – 01:45 PM) Chair: Dr. Shikha Dugar, HOD of Dept., Commerce & Management, BGC, Jaipur, INDIA	
11:20 AM -11:40 AM	IL- 1, Mr. Kapil KHURANA , Director, Technoviz Automation Solutions Pvt Ltd, Gurugram, Haryana, INDIA
11:40 AM -12:00 Noon	IL- 2, Mr. Shrey MISHRA , Founder, XR Central, Delhi, INDIA
12:00 Noon-12:20 PM	IL- 3, Dr. Ravi Shankar SHARMA , Assistant Professor, Jaipur Engineering College and Research Centre (JECRC), Jaipur, INDIA
12:20 PM-12:40 PM	IL- 4, Dr. Sachin GUPTA , Assistant Professor, Mohanlal Sukhadia University, Udaipur, INDIA

12:40 PM-01:00 PM	IL - 5, Dr. Vijay Laxmi SHARMA Professor, Department of Law, Director Teacher Empowerment Centre Manipal University Jaipur, INDIA
01:00 PM-01:20 PM	IL - 6, Adv. Mohan KUMAR Armed Forces Tribunal, Principal Bench, Delhi, INDIA
01:20 PM-01:40 PM	IL - 7, Dr. Vijay Singh RATHORE Chairman, Shri K Karni Universe College, Jaipur, INDIA
01:40 PM-01:45 PM	Vote of Thanks & Group Photo
01:45 PM-02:45 PM	Lunch Break
Young Talk & Industrial Session, (02:50 PM- 06:05 PM) Chair: Ms. Shivani Raina, Assistant Prof., BGC, Jaipur, INDIA	
02:50 PM-03:00 PM	IL-8, Prof. Masahiro TAKAGI Agricultural Advisor, NewGreen Co., JAPAN
03:00 PM-03:10 PM	IL-9, Mr. Minto MATSUNAGA Section Leader- Water Division, Horiba, JAPAN
03:10 PM-03:20 PM	IL-10, Mr. Sunil TYAGI CEO & Design Director, Noun Design Innovation Pvt. Ltd., Delhi, INDIA
03:20 PM-03:30 PM	IL-11, Mr. Ishan KAPOOR Co- Founder, HopingMinds, Delhi, INDIA IIT- Delhi, IIM - Calcutta Alumnus
03:30 PM-03:40 PM	IL-12, Mr. Naoto HASEYAMA Founder & CEO, Akita General Company, JAPAN
03:40 PM-03:50 PM	IL-13, Mr. Shan MOONDRA Founder & CEO Misskurti, Jaipur, INDIA Forbes DGEMS 200
03:50 PM-04:00 PM	Vote of Thanks & Group Photo
04:05 PM-05:00 PM	Oral Presentations Total 6 Young Oral Presentations (10 min. to each paper with Q & A)
05:10 PM-05:50 PM	Human Resource (HR) Conclave and Panel discussion Chair: Ms. Rakhi Khandelwal, Biyani Girls College, Jaipur, INDIA <i>Panelist(s) : British Council, Starc Professional, Hoping Minds, Noun Design Innovation, Ajimpremi University, Misskurti, Technoviz & XR Central</i>
05:50 PM-06:00 PM	Award Ceremony for Oral Presentation & Group Photo
06:00 PM-06:05 PM	Closing Remarks

PROGRAMME AT A GLANCE

DAY 3: September 15, 2025 (Monday)

Theme: Shaping a Sustainable Future:

Uniting Global Industry & Academia across Diverse Disciplines

Time(IST)	Schedule
09:00 AM - 09.30 AM	Registration
Inaugural Session (09:30 AM-11:15 AM) Chair: Dr. Bharti Sharma, Assistant Prof., Biyani B.Ed. College, Jaipur	
09:30 AM - 09.40 AM	Introduction of BICON- 2025; 20 th Anniversary Edition Glimpses
09:40 AM - 09:45 AM	Lighting of the Lamp
09:45 AM - 09:50 AM	Krishna Vandana
09:50 AM - 10:00 AM	Floral Welcome of Dignitaries
10:00 AM – 10:10 AM	Opening Address
10:10 AM – 10:20 AM	Inaugural Address by the Chief Guest Shri Avinash Gehlot, Cabinet Minister for Social Justice & Empowerment, Jaipur, INDIA
10:20 AM – 10:30 AM	Inaugural Address by the Special Guest Dr. Krishna Kant Pathak, (IAS) Secretary, Department of Personnel, Secretary, Women & Child Develop., Dept., Jaipur, INDIA
10:30 AM – 10:50 AM	Keynote Speaker 1 Prof. Hirohisa TANAKA, School of Sci. & Tech. Dept. of Nanotech. For Sustainable Energy, Kwansei Gakuin University, JAPAN
10:50 AM - 11:10 AM	Keynote Speaker 2 Prof. Surendra SAHRAN, Dean of the Faculty of Education, Maharaja Ganga Singh University, Bikaner, INDIA
11:10 AM - 11:15 AM	Vote of Thanks by Ms. Malti Saxena, Associate Professor, Biyani Girls B.Ed College Jaipur, Rajasthan, INDIA
11:15 AM- 11:20 AM	Group Photo
11:20 AM – 11:45 AM	High Tea
Invited Technical Session-1: (11:50 AM – 01:20 PM) Chair: Prof. Surendra SAHRAN Dean of the Faculty of Education, Maharaja Ganga Singh University, Bikaner, INDIA	

11:50 AM - 12:10 PM	IL- 1, Prof. Deepa P. MATHUR Head of the Department of English, University of Rajasthan, Jaipur, INDIA
12:10 PM- 12:30 PM	IL- 2, Prof. Grishma SHUKLA Professor, School of Education, Jaipur National University, Jaipur, INDIA
12:30 PM - 12:50 PM	IL- 3, Prof. Mridula SHARMA Professor, Department of Psychology, Meerut University, Meerut, INDIA
12:50 PM - 01:10 PM	IL- 4, Dr. Mudita POPLI DD News, New Delhi, INDIA
01:10 PM - 01:20 PM	Vote of Thanks Dr. Shipra Gupta, Biyani Girls B.Ed College (Group Photo)
01:20 PM – 2:20 PM	Lunch Break
Invited Technical Session-2: (02:30 PM – 05:50 PM) Chair : Dr. Shipra Gupta HOD, Biyani Girls B.Ed College, Jaipur, INDIA	
02:30 PM - 02:50 PM	IL- 5 Dr. Amit GAUTAM Associate Professor, School of Education and Non-Formal Education, NEPA, New Delhi
02:50 PM - 03:10 PM	IL- 6 Prof. Soniya Kaur BANSAL Associate Professor, Department of English, Poornima University, Jaipur
03:10 PM - 03:30 PM	IL- 7 Dr. Sulekha OJHA, HOD of Fashion & Textile, IIS University, Jaipur, INDIA
03:30 PM - 03:50 PM	IL- 8 Dr. Rajendra PRASAD, Associate Professor, Department of Drawing & Painting, University of Rajasthan, Jaipur, INDIA
03:50 PM - 04:00 PM	Vote of Thanks & Group Photo Mr. Virender Kumar, Assistant Professor, Biyani Girls B.Ed College Jaipur, Rajasthan, INDIA
04:10 PM - 05:40 PM	Oral Presentations (10 min. to each paper with Q & A)
05:30 PM - 05:40 PM	Award Ceremony for Oral Presentation & Group Photo
05:40 PM - 05:50 PM	Closing Remarks by Dr. Shipra Gupta HOD, Biyani Girls B.Ed College, Jaipur, INDIA

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DAY-1: (13 September, 2025)

Invited Lecture -1

Elucidation of Molecular Mechanism of Vitamin D and Vitamin D Receptor Actions Using Genetically Modified Rats



Prof. Toshiyuki Sakaki

Affiliation & Contact:

Department of Pharmaceutical Engineering, Toyama Prefectural University, 5180 Kurokawa, Imizu, Toyama 939-0398, Japan

Phone +81-766-56-7500; Fax +81-766-56-2498

Email: tsakaki@pu-toyama.ac.jp

Research Interest:

Biochemistry, Molecular biology, Pharmacology

Education & Professional Career:

1978-1980	M.S. in Biophysics, Kyoto University
1986	Ph.D. in Biophysics, Kyoto University
1980-1997	Research Scientist, Research Center, Sumitomo Chemical Co. Ltd.
1997-2004	Asso. Prof., Kyoto University
2004-present	Prof., Toyama Prefectural University

Major Publications:

- Kise S, Morita S, Sakaki T, Kimura H, Kinuya S, Yasuda K., Ligand-Independent Vitamin D Receptor Actions Essential for Keratinocyte Homeostasis in the Skin. *Int J Mol Sci*, 6;26:422. (2025)
- Kise S, Iijima A, Nagao C, Okada T, Nishikawa M, Ikushiro S, Nakanishi T, Sato S, Yasuda K, Sakaki T. Gene therapy for alopecia in type II rickets model rats using vitamin D receptor-expressing adenovirus vector. *Sci Rep*. 13(1), 18528 (2023)

- Nishikawa M, Murose N, Mano H, Yasuda K, Isogai Y, Kittaka A, Takano M, Ikushiro S., Sakaki T. Robust osteogenic efficacy of 2 α -heteroarylalkyl vitamin D analogue AH-1 in VDR(R270L) hereditary vitamin D-dependent rickets model rats. *Sci Rep*. 12(1):12517 (2022)
- Biyani, M, Yasuda, K, Isogai, Y, Okamoto, Y, Weilin, W, Kodera, N, Flechsig, H, Sakaki, T, Nakajima, M, Biyani, M. Novel DNA Aptamer for CYP24A1 Inhibition with Enhanced Antiproliferative Activity in Cancer Cells *ACS applied materials & interfaces*, 14(16), 18064–18078 (2022)
- Yasuda K, Nishikawa M, Okamoto K, Horibe K, Mano H, Yamaguchi M, Okon R, Nakagawa K, Tsugawa, Okano T, Kawagoe F, Kittaka A, Ikushiro S, Sakaki T Elucidation of metabolic pathways of 25-hydroxyvitamin D3 mediated by CYP24A1 and Cyp3A using Cyp24a1 knockout rats generated by CRISPR/Cas9 System. *J. Biol Chem.*, 296, 100668 (2021)

Abstract

Elucidation of Molecular Mechanism of Vitamin D and Vitamin D Receptor Actions Using Genetically Modified Rats

Toshiyuki Sakaki

Department of Pharmaceutical Engineering, Toyama Prefectural University, Japan

Abstract: The active form of vitamin D₃, 1 α ,25-dihydroxyvitamin D₃ (1,25D₃), exerts diverse physiological functions, including regulation of calcium homeostasis, bone formation, anti-cancer activity, and immune responses. Recent studies have revealed multiple modes of action of vitamin D and its receptor (VDR), such as VDR-independent effects of 1,25D₃, VDR-dependent or -independent effects of 25-hydroxyvitamin D₃ (25D₃), and ligand-independent functions of VDR. To investigate these mechanisms, we established a novel in vivo system by generating genetically modified rats with targeted deletions or mutations in the *Vdr* or *Cyp27b1* genes using genome-editing techniques [1–3]. These include:

(i) type II rickets model rats harboring a mutant VDR (R270L), which recognizes 1,25D₃ with an affinity comparable to that of 25D₃; (ii) mutant rats with VDR (H301Q), which exhibits greatly reduced affinity for both 25D₃ and 1,25D₃ relative to wild-type (WT) VDR; and (iii) double-mutant rats with VDR (R270L/H301Q), which show almost no affinity for either ligand [3]. All mutant lines displayed rickets-like phenotypes, including growth retardation and abnormal bone formation. Among them, *Cyp27b1*-KO rats exhibited severe hypocalcemia and the most pronounced growth retardation, whereas *Vdr*-KO rats showed abnormal skin morphology and alopecia [1–3]. Phenotypic comparisons provide insight into distinct modes of vitamin D action. The differences between WT and *Vdr* (R270L) rats likely reflect VDR-dependent effects of 1,25D₃, whereas differences between *Vdr* (R270L) and *Cyp27b1*-KO rats may be attributed to VDR-independent

effects of 1,25D3. Furthermore, comparison of *Vdr* (R270L/H301Q) and *Vdr*-KO rats highlights ligand-independent roles of VDR. Indeed, the absence of alopecia and presence of normal skin in *Vdr* (R270L/H301Q) rats suggest that ligand-independent VDR action is essential for hair cycling and skin formation [2,3]. Collectively, these findings demonstrate that our novel in vivo system provides a powerful tool to elucidate the molecular mechanisms underlying the diverse actions of vitamin D.

[1] Nishikawa *et al.*, *Sci Rep.* 10(1), 5677 (2020)

[2] Kise *et al.*, *Sci Rep.* 13(1), 18528 (2023)

[3] Kise *et al.*, *Int J Mol Sci*, 6;26:422.(2025)

Keywords: vitamin D, vitamin D receptor, genome editing, rickets, alopecia



Invited Lecture -2

Development of novel M-ASPAR to improve the treatment of primary and relapse acute lymphoblastic leukemia



Prof. Avinash Sonawane

Affiliation: Department of Biosciences and Biomedical Engineering, Indian Institute of Technology Indore, Simrol, Indore-453552, Madhya Pradesh

E-mail: asonawane@iiti.ac.in

Brief Introduction: Prof. Avinash Sonawane is currently a Professor at the Department of Biosciences and Biomedical Engineering, IIT Indore and Humboldt Visiting Professor at Leibniz Lung Centre, Borstel, Germany. His major research and technological development interests are on tuberculosis and blood cancer, focusing on diagnostics, drug development, drug delivery, and understanding molecular and immunological mechanisms. He obtained Ph.D. from University of Marburg, Germany, followed by postdoctoral studies at University of Florida, Gainesville, USA, Max Planck Institute for Infection Biology, Berlin, and European Molecular Biology Laboratory (EMBL), Heidelberg, Germany. He is recipient of several prestigious international awards such as Alexander von Humboldt Fellow, EMBO fellow, Swiss National Science Fellow, Swedish Institute Fellow and JSPS Fellow. He is also elected as Fellow of Royal Society of Biology (FRSB) UK and Fellow of Maharashtra Academy of Sciences. Prof. Sonawane have received P. A. Kurup Endowment Award, Major General Saheb Singh Sokhey award, Young Scientist award, SERB-TETRA award, National Bioentrepreneurship award, Best Technology Development award to name a few. He also served as DAAD Research Ambassador, Ambassador of Association Commonwealth Universities, and Steering Executive Council Member, Indo-Europe Heritage Network Association. He has more than 80 publications, 4 patents granted and transferred two technologies to the industry.

Abstract

Development of novel M-ASPAR to improve the treatment of primary and relapse acute lymphoblastic leukemia

Avinash Sonawane

Department of Biosciences and Biomedical Engineering, Indian Institute of Technology Indore, Simrol, Indore-453552, Madhya Pradesh

Abstract: Acute Lymphoblastic Leukemia (ALL) is a cancer that impacts blood, bone marrow, and lymphoid system, collectively referred to as “hematological neoplasms”. Among all types of leukemia, ALL accounts for 57 to 80% cases. ALL is treated by a combination of chemotherapeutic drugs that includes *Escherichia coli* L-asparaginase is an important component of therapy. However, repeated L-asparaginase administration causes severe immunogenicity, hypersensitivity, pancreatitis, hepatotoxicity, neurotoxicity and thromboembolism in ALL patients. Moreover, relapsed ALL patients often develop anti- L-asparaginase antibodies, which reduces the efficacy of the drug. To overcome these limitations, we created more than 10,000 novel L-asparaginase variants by introducing mutations in B- and T-cell epitopes and at subunit interfaces using protein engineering approach. We identified a novel L-asparaginase variant “M-ASPAR”, which showed significantly improved therapeutic efficacy and reduced side-effects. Preclinical studies showed that M-ASPAR exhibit better anti-leukemic activity, significantly less immunogenicity in immunized mice, and higher thermostability compared with wild-type L-asparaginase. M-ASPAR also exhibited reduced L-glutaminase activity, which is responsible for neurotoxicity in ALL patients. M-ASPAR was poorly recognized by pre-existing anti- L-asparaginase antibodies present in serum from primary and relapsed ALL patients, indicating that M-ASPAR can be used for relapse ALL treatment. Pharmacokinetic studies in mice revealed that M-ASPAR have longer half-life. Single and multiple dose toxicity studies showed that M-ASPAR is non-toxic to mice till a higher dose of 5000 IU/Kg and appeared to be safe for use. Therapeutic efficacy study in ALL xenograft mice model showed that M-ASPAR significantly increased survival of ALL xenograft mice by killing 90% of leukemic cells. Presently M-ASPAR is under phase I/II clinical trials. These highly desirable therapeutic characteristics of M-ASPAR may improve therapies for primary and relapsed ALL patients.

Keywords: Leukemia, ALL therapy, L-asparaginase, toxicity



Invited Lecture -3

Suppression of Amyloid- β Adsorption on Endoplasmic Reticulum Stress-Mimicking Membranes by α -Tocopherol and α -Tocotrienol



Prof. Masahiro Takagi

Affiliation & Contact:

Professor Emeritus

Japan Advanced Institute of Science and Technology (JAIST)

1-1 Asahidai, Nomi ISHIKAWA 923-1292 JAPAN Phone +81-761-51-1650

Email: takagi@jaist.ac.jp

Agricultural Advisor

NEWGREEN

Tama Koganei Venture Port 101, Tokyo University of Agriculture and Technology,
2-24-16 Nakamachi, Koganei, Tokyo 184-0012 JAPAN

Research Interest:

Biotechnology, Synthetic Biology, Drug delivery, Microbiome, Organic Farming

Education & Professional Career:

1982-1985	M.S. and Ph.D. Osaka University, Japan (Biotechnology)
1985-1994	Asst. Prof in Biotechnology, Osaka University, Japan
1990-1992	Postdoctoral Researcher, University of California Davis, USA
1994-2001	Assoc. Prof in Biotechnology, Osaka University, Japan
2001-2025	Prof. in Materials Science, Japan Advanced Institute of Science and Technology

Major Publications:

- A new way of enhancing the thermostability of proteases. *Nature (London)* 324, 695-697 (1986).
- Primary sequence analysis of *Clostridium cellulovorans* cellulose binding protein A. *Proc. Natl. Acad. Sci. U.S.A.* 89, 3483-3487 (1992).
- Characterization of DNA polymerase from *Pyrococcus* sp. KOD1 and its application to PCR.

Appl. Environ. Microbiol. 63, 4504-4510 (1997).

- Dynamic processes in endocytic transformation of a raft-exhibiting giant liposome. *J. Phys. Chem. B*, 111, 10853-10857 (2007).
- Membrane disk and sphere: controllable mesoscopic structures for the capture and release of a targeted object. *J. Am. Chem. Soc.*, 132, 10528-10532 (2010).
- Size-dependent partitioning of nano/micro-particles mediated by membrane lateral heterogeneity, *J. Am. Chem. Soc.*, 134, 13990–13996 (2012).
- Charge-induced phase separation in lipid membranes. *Soft Matter*, 10, 7959-7967(2014).
- Molecular behavior of DNA in a cell-sized compartment coated by lipids. *Phys. Rev. E*, 91, 062717(2015).
- Membrane permeation of giant unilamellar vesicles and corneal epithelial cells with lipophilic vitamin nanoemulsions. *Colloids Surf. B-Biointerfaces*, 169, 444-452 (2018).
- Development of robust isothermal RNA amplification assay for lab-free testing of RNA viruses *Scientific Reports*, 11, 15997 (2021).

Abstract

Suppression of Amyloid- β Adsorption on Endoplasmic Reticulum Stress-Mimicking Membranes by α -Tocopherol and α -Tocotrienol

Masahiro Takagi*, Yusuke Nakatani*, Naofumi Shimokawa*

School of Materials Science, Japan Advanced Institute of Science and Technology, Japan

Abstract: Two forms of hydrophobic vitamin E (VE), α -tocopherol (Toc) and α -tocotrienol (Toc3), have been proposed to be effective against Alzheimer's disease (AD) caused by amyloid β (A β), the etiology of which is thought to involve endoplasmic reticulum (ER) stress. Previous studies have shown that A β oligomers and protofibrils, which are highly toxic A β species, have a greater impact on membrane dynamics than monomers and fibrils, which are less toxic species. Furthermore, we found that highly toxic A β oligomers and protofibrils tend to accumulate on the solid-ordered (So) phase of membranes, which is rich in saturated lipids, rather than the liquid-disordered (Ld) phase, which is rich in unsaturated lipids by using liposomes

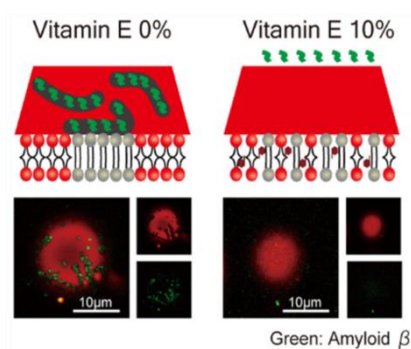


Fig. 1. Suppression of So formation

The ER membrane is known to have low Chol content. Therefore, we considered that the formation of the So phase is related to ER stress. We prepared liposomes mimicking the phase separation of the ER membrane (solid-ordered/liquid-disordered phase separation) and studied how VE can influence the interaction between amyloid- β (A β) and the ER membrane.

We found that Toc could inhibit the formation of the solid-ordered phase more significantly than Toc3. Furthermore, A β protofibril adsorption on ER stress-mimicking membranes was more strongly suppressed by Toc compared with Toc3. Therefore, we concluded that VE can relieve ER stress by destabilizing the solid-ordered phase of the ER membrane and subsequently reducing the amount of A β adsorbed on the membrane.

Moreover, Toc exerted a stronger effect than Toc3 (Fig.1)(1).

Keywords: Alzheimer’s Disease (AD), Amyloid β (A β), Liposome, Phase-separation

(1) Y. Nakatani et al. Journal of Physical Chemistry Letters 2022 13 (51), 11955-11960

Masahiro Takagi

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©**Aigamo Robot** is a self-driving weed control robot designed for rice paddies, offering an eco-friendly alternative to chemical herbicides. Its name comes from the traditional “Aigamo farming” method, where ducks were used to suppress weeds.

©**Suppresses weeds by muddying water:** The robot stirs up the water as it moves through the paddy, making it cloudy and blocking sunlight, which inhibits weed growth.

©**Fully autonomous navigation:** Using GPS and control algorithms, it learns the shape of the field and efficiently covers untraveled areas.

©**Powered by solar energy:** Equipped with solar panels, it operates sustainably using renewable energy.

©**Smartphone connectivity:** Users can monitor battery levels and operating status via a mobile app.



Aigamo Robo (IGAM-2)

Item	Details
Size	900mm (L) × 810mm (W) × 253mm (H) (excluding brushes)
Weight	Approx. 6kg
Material	Expanded polypropylene

Power	Motor (solar-powered)
Battery	Lithium iron phosphate battery
Price	Approx. ¥275,000 (tax included)

- ◎**Social Impact and Verified Benefits Supports organic rice cultivation:** Helps grow high-value organic rice without chemical fertilizers or pesticides.
- ◎ **Suppresses golden apple snails:** The stirred water disrupts the activity of invasive snails, reducing crop damage.
- ◎ **Influences soil microbes:** Studies suggest it may reduce methane-producing bacteria and increase iron bacteria, potentially improving soil health.



Invited Lecture-4

Chemically Diverse Scaffolds in Drug Discovery



Dr. Haridas B. Rode

Affiliation & Contact:

Senior Principal Scientist

CSIR-Indian Institute of Chemical Technology,

Phone: +917661052000

Email: haridas.rode@iict.res.in

haridas.rode.iict@csir.res.in

Research Interests:

The laboratory focuses on the development of preclinical candidates against drug-resistant bacterial infections including tuberculosis. Various new methods are also being developed in his laboratory to build chemically diverse compound libraries for biological screening.

Education & Professional Career: He obtained PhD in 2006 from the University of Greifswald, Germany under the supervision of Professor Hans-Hartwig Otto. Thereafter, he moved to Max-Planck Society in Dortmund, Germany, as a postdoctoral fellow. He joined Council of Scientific and Industrial Research (CSIR) in 2011 with OSDD (Open-Source Drug Discovery). From February 2014, he is working at CSIR-Indian Institute of Chemical Technology, Hyderabad, in the area of Medicinal Chemistry.

Professional Experience

During his PhD (2002-2006) study, his research focused on synthesis and evaluation of pseudosaccharin amine derivatives as elastase inhibitors. During the postdoctoral studies (2006-2010) his research interests included development of irreversible kinase inhibitors. From 2011-2014, he led the Medicinal Chemistry activities of Open Source Drug Discovery (OSDD). From Feb. 2014 till date, his laboratory is working in Medicinal Chemistry research aimed at developing new chemotypes effective against drug-resistant tuberculosis. Further, new synthetic methods are being developed for generating compound libraries.

Major Publications (Total Publications: 51)

- Kotapalli S. S. et al; *PLoS One*, **2015**,10, e0144018.
- Makane V. B. et al; *Eur. J. Med. Chem.*, **2019**, 164, 665-677.
- Makane V. B. et al; *Fut. Med. Chem.* **2019**, 11, 499-510.
- Karale U. B. et al; *Eur. J. Med. Chem.*, **2019**, 178, 315-328.
- Rode H. B. et al; *Org. Biomol. Chem.*, **2019**, 17, 5428–5459.
- Gaikwad V. R. e al; *Bioorg. Med. Chem. Lett.*, **2020**, 38, 127037.
- Babar D. A. and Rode H. B. *Eur. J. Org. Chem.*, **2020**, 1823-1827.
- Sangu K. G. et al; *Fut. Med. Chem.*, **2021**, 13, 229-232.
- 9. Kalari S. et al; *J. Org. Chem.*, **2021**, 86, 17684–17695.
- Kalari S. et al; *J. Org. Chem.*, **2022**, 87, 2435–2445.
- Kaul G. et al; *J. Antimicrob. Chemother.*, **2022**, 77, 2456-2460.
- Karale U.B. et al., *Bioorg. Chem.*, **2023**, 106698.
- Kalari S., et al; *Adv. Synth. Catal.*, **2023**, 2023, 365, 3591-3596.
- Babar D.A. et al.; *ChemMedChem*, **2024**, 19, e202300598.
- Saxena D. et al; *Bioorg. Chem.*, **2025**, 108904.

Abstract

Chemically Diverse Scaffolds in Drug Discovery

Haridas B. Rode

Department of Natural Products and Medicinal Chemistry, CSIR-Indian Institute of Chemical Technology, Hyderabad, India-500007

Abstract: Chemically diverse scaffolds represent a main source of biologically important starting points in drug discovery. Recently, we have reported the development of such diverse scaffolds from nitroarene/ nitro(hetero)arenes using a key synthetic strategy.[1] In a pilot-scale study, the synthesis of 10 diverse scaffolds was achieved from nitro(hetero)arenes. This diverse library is compliant with the rule of five for drug-likeness. The mapping of chemical space represented by these scaffolds revealed a significant contribution to the underrepresented chemical diversity. Crucial to the development of this approach was the mapping of biological space covered by these scaffolds which revealed neurotropic and anti-inflammatory activities. *In vitro*, neuro biological assays revealed that two compounds showed excellent neurotropic potential and neurite growth compared to controls. Further, anti-inflammatory assays (*in vitro* and *in vivo* models) exhibited that, compound 8-methyl-4-(piperidin-1-yl)-[1,2,5]oxadiazolo[3,4-*h*]quinoline showed significant anti-inflammatory activity by attenuating the LPS-induced TNF- and CD68 levels by modulating the NFkB pathway. In addition, this compound significantly ameliorated the LPS-induced sepsis conditions, and pathological abnormalities (in lung and liver tissues) and improved the survival of the rats compared to LPS control. Owing to their chemical diversity along with bioactivities, it is envisaged that new quality pre-clinical candidates will be generated in the above therapeutic areas

using identified chemical leads. Further, the synthetic method was extended to prepare pyvinium pamoate. Pyvinium pamoate was repurposed for its antibacterial activity against drug-resistant *Staphylococcus aureus*. [2] The natural product derived Rheinal showed potent antimicrobial activity in combination with gentamicin and minocycline targeting MDR *S. aureus*. [3]

References:

- Karale U.B., Shinde A., Gaikwad V.R., Kalari S., Gaurishetti K., Radhakrishnan M., Poornachandra Y., Amanchy R., Chakravarty S., Sai Balaji A., Rode H.B. Iron mediated reductive cyclization/oxidation for the generation of chemically diverse scaffolds: An approach in drug discovery. *Bioorg. Chem.*, 2023, 139, 106698.
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- Saxena D., Kaul G., Akhir A., Babar D., Choudhari D., Shinde A., Shukla M., Maitra R., Sridhar B., Rode H. B., Chopra S. *Bioorg. Chem.*, 2025, 139, 108904.



Invited Lecture-5

AQP5: A Functional Gastric Cancer Stem Cell Marker Driving Tumourigenesis in Mice and Humans



Prof. Kazuhiro Murakami

Affiliation & Contact:

Division of Epithelial Stem Cell Biology, Cancer Research Institute, Kanazawa University, Kukuma-machi, Kanazawa, 920-1192, Japan

Phone +81-76-234-4510; Fax +81-76-234-4510

Email: kmurakami@staff.kanazawa-u.ac.jp

Research Interest:

Stem Cell Biology, Oncology

Education & Professional Career:

2004-2008 Ph.D. Tottori University, Japan (Molecular Biology, Oncology)

2007-2011 Research Scientist in CDB, RIKEN, Japan

2011-2013 Postdoctoral fellow in University of Cambridge, UK

2013-2016 Asst. Prof in Hokkaido University, Japan

2016-2022 Asst. Prof in Kanazawa University, Japan

2022- Asso. Prof in Kanazawa University, Japan

Major Publications:

Nakayama M., Saito H., Murakami K., Oshima H., Oshima M. Missense Mutant p53 Transactivates Wnt/ β -Catenin Signaling in Neighboring p53-Destabilized Cells through the COX-2/PGE2 Pathway. *Cancer Research Communications*, 5(1), 13-23 (2025)

Morita A., Nakayama M., Wang D., Murakami K., Oshima M. Frequent loss of metastatic ability in subclones of *Apc*, *Kras*, *Tgfbr2*, and *Trp53* mutant intestinal tumor organoids. *Cancer Science*, 114(4) 1437-1450 (2023)

Yamamoto D., Oshima H., Wang D., Takeda H., Kita K., Lei X., Nakayama M., Murakami K., Ohama T., Takemura H., Toyota M., Suzuki H., Inaki N., Oshima M. Characterization of *RNF43*

frameshift mutations that drive Wnt ligand- and R-spondin-dependent colon cancer. *The Journal of pathology*, 257(1) 39-52 (2022)

Fatehullah A., Terakado Y., Sagiraju S., Tan T.L., Sheng T., Tan S.H., Murakami K., Swathi Y., Ang N., Rajarethinam R., Ming T., Tan P., Lee B., Barker N. A tumour-resident Lgr5+ stem-cell-like pool drives the establishment and progression of advanced gastric cancers. *Nat. Cell Biol.*, 23, 1299–1313 (2021).

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Tan S.H., Swathi Y., Tan S., Goh J., Seishima R., Murakami K., Oshima M., Tsuji T., Phuah P., Tan L.T., Wong E., Fatehullah A., Sheng T., Ho S.W.T., Grabsch H.I., Srivastava S., Teh M., Denil S.L.I.J., Mustafah S., Tan P., Shabbir A., So J., Yeoh K.G., Barker N. AQP5 enriches for stem cells and cancer origins in the distal stomach. *Nature*, 2020 Feb;578(7795):437-443.

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Murakami K.*, Günesdogan U.*, Zylcz J.J., Tang W.W.C., Sengupta R., Kobayashi T., Kim S., Butler R., Dietmann S., Surani M.A. NANOG alone induces germ cells in primed epiblast in vitro by activation of enhancers, *Nature*, 2016 Jan; 21 (529): 403-407. (* Equal contribution)

Abstract

AQP5: A Functional Gastric Cancer Stem Cell Marker Driving Tumourigenesis in Mice and Humans

Kazuhiro Murakami

Division of Epithelial Stem Cell Biology, Cancer Research Institute, Kanazawa University

Abstract: Cancer stem cells (CSCs) are a special type of cell within tumors that can self-renew and drive long-term tumor growth. However, in gastric (stomach) cancer, the exact identity and role of these CSCs have not been clearly proven, as previous studies lacked direct evidence showing their stem-like behavior.

Recent advances in 3D culture systems—known as organoid models—have transformed how we study epithelial tissues in the stomach. These models allow scientists to grow stable, self-renewing mini-organs in the lab that closely mimic the structure and function of in vivo tissues. This technology has made it possible to study cancer development in a more accurate and controlled way.

In our study, we identified a specific group of CSCs in stomach tumors that express a protein called AQP5. These AQP5-positive cells were found in both mouse and human tumors located in the pyloric region of the stomach. Using advanced organoid cultures and mouse models, we showed that AQP5 expressing cells are essential for starting and maintaining tumor growth. Furthermore, we found that AQP5 not only marks these stem-like cells but also actively promotes tumor invasion and growth through key signaling pathways known as WNT and PI3K.

These findings establish a clear hierarchy of CSCs in gastric cancer and highlight AQP5 as a potential target for future treatments. By aiming therapies at these key cells, we may be able to suppress tumor growth and prevent relapse more effectively.



Invited Lecture-6

Characterization of Particle-Bound Metals from Vehicular Emissions and their Associated Health Risks: A Case Study of Delhi



Prof. Jai Prakash

Affiliation & Contact:

Assistant Professor, Department of Atmospheric Science, Central University of Rajasthan, Bandarsindri, N.H. 8 (Jaipur Ajmer Highway), Kishangarh - 305 817

Phone +91-98-186-07154

Email: jai.prakash@curaj.ac.in

Education & Professional Career:

2007-2009 M.Tech. IIT (ISM) Dhanbad (Environmental Engineering)

2010-2017 Ph.D. IIT Delhi (Environmental Engineering)

2017-2021 Post-Doctoral Fellow University of Gothenburg Sweden and Washington University in St. Louis, St. Louis USA

2021-2022 Centre for Science and Environment, New Delhi

2022-till date Assistant Professor in Central University of Rajasthan

Major Publications:

- Kumar, V.; Sahu, M.; Biswal, B.; **Prakash, J.**; Choudhary, S.; Raliya, R.; Chadha, T. S.; Fang, J.; Biswas, P. Temporal Dynamics and Source Characteristics of Fine Particulate Matter Using Positive Matrix Factorization (PMF). *Atmos. Pollut. Res.* **2025**, 16 102539.
- **Prakash, J.**; Choudhary, S.; Raliya, R.; Chadha, T.; Fang, J.; Biswas, P. PM Sensors as an Indicator of Overall Air Quality: Pre-COVID and COVID Periods. *Atmos. Pollut. Res.* **2022**, 13 (11), 101594.

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Abstract

Characterization of Particle-Bound Metals from Vehicular Emissions and their Associated Health Risks: A Case Study of Delhi

Jai Prakash

Assistant Professor, Department of Atmospheric Science, Central University of Rajasthan

Abstract:

The rapid expansion of India's transport sector has positioned on-road vehicles as a major source of urban particulate matter (PM), raising urgent concerns for air quality and public health. While vehicular exhaust has been studied extensively for gaseous pollutants, less is known about the elemental composition of fine particles (PM_{2.5}) under real-world driving conditions. Here, we present a comparative assessment of particle-bound metals emitted from light-duty vehicles (LDVs) powered by diesel, gasoline, and compressed natural gas (CNG) across Bharat Stage II–IV categories. Emissions were sampled on-road along a 10 km route in Delhi using a portable dilution system (PDS) to achieve aerosol formation prior to PM_{2.5} collection on Teflon filters. Sixteen (16) trace metals were quantified via Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). We

observed the highest metal concentrations from four-wheeler diesel vehicles, followed by gasoline and CNG-powered three- and two-wheelers. Among non-carcinogenic species, chromium (Cr), manganese (Mn), nickel (Ni), zinc (Zn), and lead (Pb) were most abundant. Risk assessment revealed that inhalation exposure to Cr exceeded the tolerable cancer risk threshold (10^{-4}) across all fuel types, whereas Ni, As, Cd and Pb remained within the safe-to-tolerable range (10^{-6} – 10^{-4}). Notably, excess cancer risks (ECRs) associated with PM_{2.5} from gasoline and CNG vehicles were higher than those from diesel vehicles, highlighting fuel-specific health risks. However, other toxic species such as volatile organic compounds (VOCs)-poly-aromatic hydrocarbons (PAHs) and per-fluorinated compounds (PFCs), can give strength to understanding the potential risk posed by diesel, gasoline and CNG vehicles. This study provides baseline information for understanding vehicle emission and their potential risk and for estimating burden of disease and crafting policy to help reduce the exposures.

Keywords: On-road vehicle, PM_{2.5}, Particle-bound metals, Non-carcinogenic risk, Delhi



Invited Lecture -7

Higher Education Institution Role in Achieving Sustainable Development Goals via Nursing Research and Teaching



Prof. Rupa Verma

Affiliation & Contact:

Professor cum Principal, MKSSS Sitabai Nargundkar College of Nursing for Women Narendra Nagar, Nagpur – 440015, Maharashtra, India

Phone: +91-9960962340

Email: rupashok@yahoo.co.in; principalnursingcollege@gmail.com

Research Interests:

- Child Health Nursing
- Nursing Education & Pedagogy
- Digital Transformation in Nursing and Healthcare
- Forensic Nursing & Geriatric Nursing
- Nursing Leadership, Policy, and Administration

Education & Professional Career:

2021 Ph.D. (Child Health Nursing), Datta Meghe Institute of Medical Sciences (Deemed University), Nagpur

2005 M.Sc. (Child Health Nursing), Dr. M.G.R Medical University, Chennai

2002 M.A. (Sociology), Pt. Ravishankar Shukla University, Raipur

2000 B.Sc. (Nursing), Pt. Ravishankar Shukla University, Raipur

Professional Career (22+ years):

- 2007–Present Professor & Principal, MKSSS Sitabai Nargundkar College of Nursing for Women, Nagpur
- 2006–2007 Lecturer, Choithram College of Nursing, Indore
- 2005–2006 Lecturer, Shreyas College of Nursing, Bhilai
- 2001–2003 Clinical Instructor, College of Nursing, Bhilai
- 2000–2001 Staff Nurse, Jawaharlal Nehru Hospital & Research Centre, Bhilai

Major Publications :

- Artificial Intelligence: A huge augmentation in Nursing Curriculum. IP Journal of Paediatrics and Nursing Science. DOI:10.18231/j.ijpns.2024.025
- Bridging expertise and empathy: The critical role of nurses in neonatal care. IP Journal of Paediatrics and Nursing Science. DOI:10.18231/j.ijpns.2024.024
- Transforming Health Professional Education in India: The Role of NEP 2020. IP Journal of Paediatrics and Nursing Science. DOI:10.18231/j.ijpns.2024.016
- Advancing Nurse-led Innovations. IP Journal of Paediatrics and Nursing Science. DOI:10.18231/j.ijpns.2024.008
- An Updated Trend in Nursing – Artificial Intelligence: A Review Article. IP Journal of Paediatrics and Nursing Science, Vol 6(1).

Abstract

Higher Education Institution Role in Achieving Sustainable Development Goals via Nursing Research and Teaching

Rupa Verma

Professor cum Principal, MKSSS Sitabai Nargundkar College for Women, Nagpur, India

Abstract: The United Nations' Sustainable Development Goals (SDGs) provide a universal blueprint for addressing urgent global challenges, including health inequities, education gaps, gender inequality, and environmental concerns. Nursing, being at the frontline of healthcare, is uniquely positioned to contribute to several of these goals, especially SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), and SDG 13 (Climate Action). Higher Education Institutions (HEIs) play a pivotal role by integrating SDG principles into nursing education, research, and practice, thereby shaping the future of healthcare delivery in alignment with global priorities.

HEIs enhance the competence of nurses by offering high-quality, evidence-based, and inclusive education. Through the integration of innovative teaching methods—such as simulation-based training, digital health technologies, and e-learning platforms—institutions ensure that nurses are equipped with critical thinking, clinical expertise, and leadership skills. Such education not only improves patient care but also fosters lifelong learning, career advancement, and the development of nurse leaders, educators, and researchers. By prioritizing accessibility and inclusivity, HEIs also provide opportunities for women, rural students, and marginalized groups, reinforcing the principles of equity and social justice embedded in SDG 4 and SDG 10.

In advancing SDG 3, nursing research and teaching focus on critical areas such as maternal and child health, communicable and non-communicable diseases, and mental health. Nurses are at the forefront of preventive and promotive healthcare, advocating healthy lifestyles, managing chronic illnesses, and ensuring universal health coverage. HEI-led research strengthens evidence-based practice, informs policies, and supports community-based interventions, thereby bridging gaps in healthcare delivery.

Gender equality (SDG 5) is inherently tied to nursing education and practice. Nursing, a predominantly female-led profession, empowers women through education, employment, and leadership opportunities. HEIs also work to dismantle gender stereotypes, address wage disparities, and promote inclusivity by encouraging male participation in nursing. Similarly, climate action (SDG 13) is addressed through research and advocacy in disaster preparedness, environmental health, and sustainable healthcare practices, preparing nurses to respond effectively to emerging climate-related health threats.

Partnerships (SDG 17) are central to nursing's contribution to sustainable development. HEIs collaborate with governments, NGOs, health organizations, and international universities to strengthen nursing education and research, share best practices, and promote innovation. Case studies from India—including initiatives by TERI School of Advanced Studies, Nitte University, KLE Academy, Kerala's nurse skill development program, and the Kalinga Institute of Nursing Sciences—demonstrate the transformative impact of nursing research and education on community health, gender empowerment, and sustainable development.

In conclusion, Higher Education Institutions serve as vital catalysts in achieving the SDGs by integrating sustainable practices into nursing research and teaching. By producing competent, ethical, and globally aware nursing professionals, HEIs advance not only the health sector but also the broader mission of social equity, gender justice, and environmental stewardship. Thus, nursing education and research act as powerful instruments to realize the SDG vision of a healthier, more equitable, and sustainable world by 2030.

Keywords: Sustainable Development Goals, Nursing Education, Higher Education Institutions, Nursing Research, Gender Equality, Climate Action, Health Equity.



CONTRIBUTED PAPERS

Abstract

Impact of Different Biopesticides on Feeding Behaviour of *Papilio demoleus*

Puja Dewanda¹, Umesh Dutt², Sandeep Dewal¹

¹ Biopesticidal Lab, Dept. of Zoology, S.D. Govt. College, Beawar

² Dept of Zoology, S.P.C.G.C. Ajmer

Email ID: puja.chandra16@gmail.com

Abstract: India is on fifth position in production of citrus fruit in the World. It produces 7464000 MT citrus fruit every year. These fruits are well known and have high demand because of rich substance of vitamin C and reviving juice the major insect pests of citrus in our country (Tandon et al. 1988). Various sorts of citrus fruits like lime/lemon, Sweet/orange, musambi, Malta and kinnow are grown in India in enormous scale. Maharashtra, Andhra Pradesh, Punjab, Karnataka, Uttarakhand, Assam, Gujarat and Bihar are major citrus fruits producing states in India. Production of citrus fruit is profoundly influenced by the serious invasion of various kinds of insect pests. Insects' pest is one of the major constraints to reduce the production of citrus crops (Bindra, 1969).

Methodology: Use of plant extract of neem, calotropis and castor leaves. Leaf dip method uses for feeding.

Result and Discussion: Shown of mortality rate with different plant extract is reach at significant level. Use of such bio pesticides individually or in combination will be effective for getting rid of *Papilio demoleus* from the citrus plants and will not be harmful for soil, plant and human health as compared to chemical pesticides. Conclusion: The insecticides offer a very good control of the insect pests, but these are directly or indirectly harmful to mankind. So, it has become necessary to evolve control measures, which may be selective in action and relatively harmless to non-target organisms and human beings.

Keywords- bio pesticides, lemon, caterpillar, mortality, extract.

Introduction: Bio pesticides are the most promising alternative for a sustainable and a healthy environment. Looking at the hazards of use of chemical pesticides in farms, it is the need of the hour to approach for some eco-friendly management strategies. Bio-pesticides perfectly fill the lacunae and have a wide prospect. Here in this research paper impact of the Bio-pesticides on the feeding behaviour and mortality of *Papilio demoleus* is been investigated. A survey work conducted by I.C.A.R. gave an emphasis for a lot of damage caused by insect-pests species namely *Papilio demoleus* (lemon butterfly), *Phyllocnistis citrella* (leaf miner) and *Diaphoriba citric* (citrus psylla) etc. Lemon butterfly (*Papilio demoleus*) is observed as one of a serious threat to citrus plantations

exceptionally in nurseries. Its caterpillars feed on young leaves, defoliate the small plants and young twigs of grown-up trees. The caterpillar feed voraciously on leaf lamina. The caterpillar has five instars in their larval period. One cycle of *Papilio demoleus* takes commonly 25-28 days and in ideal condition 5-8 cycles have been recorded in one year. I, II and III instar stages are dark brown in colour and has white marking on 8th and 9th segment, this helps them to escape from predation. The study deals with the impact of the Bio pesticide (plant extracts of *Azadirachta indica* (Neem), *Calotropis procera* (Akk) and *Ricinus communis* on the feeding behaviour and mortality rate of 2nd instar larva of *Papilio demoleus*. The plant extracts of Neem, *Calotropis procera* and *Ricinus communis* was prepared by soaking 14mgs of dried powder of the leaves of the plants in 100ml of distil water for 24 hrs. **Azadirachtin** a limonoides obtained from *Azadirachta indica* (neem) from the Meleaiaceae family. The yellow, bitter oil extracted from the seed kernels of neem contains approximately 2% of bitter principles including nimbidin, nimbinin, nimbrin, nimbidol and other related minor limonoid triterpense (Windholz, 1987). Azadirachtin is considered as a contact poison. The material is generally less toxic to beneficial insects and mites. Azadirachtin has broad mode of action, it works as a feeding deterrent, checks the moulting of pest and also increases the moulting period and thus act as an insect-growth regulator, repellent, oviposition deterrent and also as a sterilant Rembold, (1989). ***Calotropis procera*** of family Asclepiadaceae produces large quantities of latex that contains alkaloids. These alkaloids are produced by the plant as a defence strategy against organism such as virus, fungi, insects (Larshini et al., 1997). ***Calotropis procera*** contains some pesticidal compounds such as calotropin and calotoxin in the milkweed plant extracts (Dubey et al., 2007). ***Ricinus communis***- Castor oil obtained from plant *Ricinus communis* possesses larvicidal properties against pest and might evolve as a potential biological control measure in near future. Omoya Funmilola Oluyemi (2017) in his research revealed that the extract of castor leaf and seed oil has the highest mean larvae mortality of 97.60±1.00% and larvicidal activity with high mortality at lowest concentration of 200 mg/l. Chemical pesticides are hazardous to health of living beings and also a threat to the biodiversity. As a result, it hinders the path to a sustainable eco-safe world. Bio pesticides generally affect only the target pest and closely related organisms, in contrast to broad spectrum, conventional pesticides that may affect organisms as different as birds, insects and mammals. Bio pesticides often are effective in very small quantities and often decompose quickly, resulting in lower exposures and largely avoiding the pollution problems caused by conventional pesticides. In pursuit of the aforesaid, and to develop an eco-safe biopesticide, the present research study was undertaken.

Material and Methods: Bio pesticides Selected for Research Work:

Neem Leaf Extract (*Azadirachta Indica*) 14mg/100ml

Calotropis Leaves Extract (*Calotropis procera*) 14mg/100ml

Castor Leaves Extract (*Ricinus communis*) 14mg/100ml

Method: The larva of *P. demoleus* recovered and collected from the garden of S.D. Govt. College, Beawar. The captured butterflies were used for raising the initial culture of test insect in laboratory. Larvae were reared in control conditions at 27±1°C and 75± 5% RH in BOD on clean citrus leaves.

Bioassay was conducted in petri dish covered by a muslin cloth fasten by rubber bands. The method used was leaf dip bioassay method, also known as ‘no choice bioassay’. 12 larvae of *P. demoleus* at 2nd instar stage were allowed to feed on the treated leaves of Lemon for 24 hours, 48 hours, 72 hrs, there after fresh food was provided to them. Mortality of the larvae was recorded after every 24 hrs till treated larvae surviving or control larvae pupate. Each treatment was replicated 6 times. The plant extracts of Neem, *Calotropis procera* and *Ricinus communis* was prepared by soaking 14mg of dried powder of the leaves of the plants in 100ml of distil water for 24 hrs. After this the solution was filtered, a few drops of liquid detergent was added to it and stored in clean glass. The bio pesticides so obtained was kept in refrigerator until used.

A control treatment was also conducted for reference. In the control treatment leaves were dipped in distil water. A few drops of liquid detergent were used as a surfactant. Mortality rate was calculated using Abbott’s formula. The formula is given as follows:

$$\text{Corrected Mortality\%} = [(P - P_o) / (100 - P_o)] \times 100$$

Where ‘P’ is the observed % of dead insects in the treated group and ‘P_o’ is the observed % of dead insects in the control group.

Observations and Results: Result revealed that higher concentration of the bio-pesticide showed significant feeding deterrence and anti-feedant property. Neem leaf extracts (14gms in 100ml water) reduced the feeding capacity of larva and causes mortality up to 63.33% (after 72 hrs of treatment). Calotropis leaves however showed less mortality that is up to 36.35% after 72 hrs of treatment. The leaves extract of Castor resulted in 54.54% mortality of the larvae.

Table 1: Mortality rate after using bio-pesticides with time interval.

Bio Pesticides	24 hrs	48 hrs	72hrs
NEEM LEAF EXTRACT (<i>Azadirachta indica</i>) 14mg/100ml	0%	41.66%	63.33%
CALOTROPIS LEAVES EXTRACT (<i>Calotropis procera</i>) 14mg/100ml	0%	16.66%	36.35%
CASTOR EXTRACTS (<i>Ricinus communis</i>) 14mg/100ml	0%	33.33%	54.54%
Control	0%	0%	8.33%

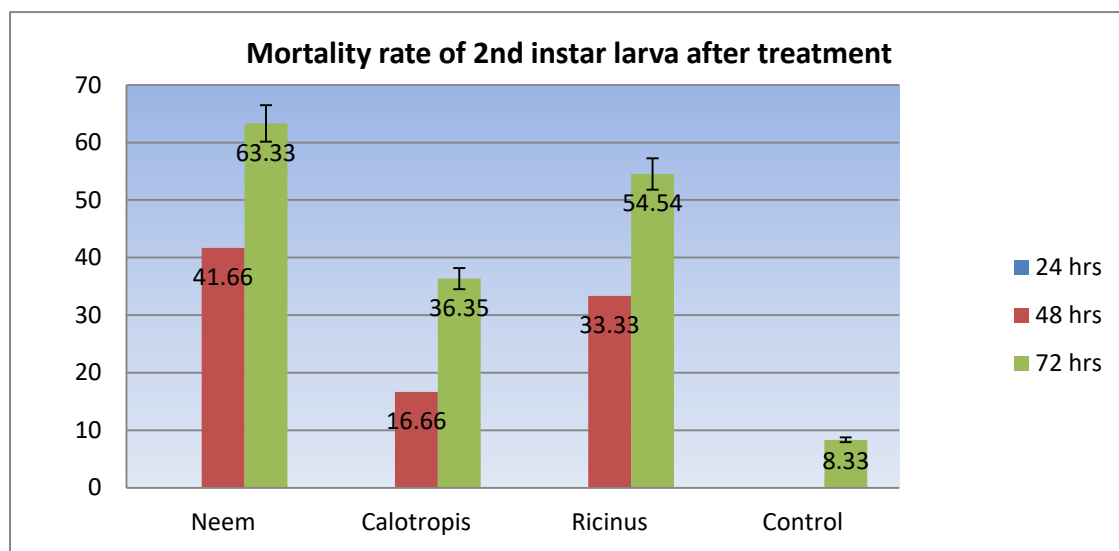


Figure 1: Mortality rate of 2nd instar larva after treatment.

Conclusion: With these results, we can conclude that extract of leaves of *Azadirachta indica* and *Ricinus communis* found to be more effective as an antifeedant when compared with the efficacy of the plant extracts of *Calotropis* against 2nd instar larva of *Papilio demoleus*. Use of such biopesticides individually or in combination will be effective for getting rid of *Papilio demoleus* from the citrus plants and will not be harmful for soil, plant and human health as compared to chemical pesticides.

Acknowledgement: Thanks to S.D. Government College, Beawar and Principal Dr. Rekha Mandowara for providing facilities in the Department of Zoology, during the study.

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Green Nanotechnology Based Sustainable Energy Solutions and Environmental Impacts

Anupama Goyal

Professor, Department of Botany, Jayoti Vidyapeeth Womens University Jaipur

Abstract: This study looks at how green nanotechnology can change things in the area of healthy energy use and help reduce the bad effects on nature. By making nanomaterials in a better way for the environment, like silver nanoparticles (AgNPs) and quantum dots, this research found that solar cells became much more efficient. They improved from normal solar cells to 53% efficiency. Also, adding silicon nanoparticles to lithium-ion batteries made them much better, giving a 50% increase in their ability to hold a charge compared to batteries using traditional materials. These results show that nanotechnology can really help change how energy is used and stored. The paper also did a Life Cycle Assessment (LCA) to look at the whole life of green nanomaterials and how they affect the environment. The LCA showed that using these new materials cut down greenhouse gas emissions by 32%, energy use by 33%, and toxic pollutants by 37% compared to traditional materials. This shows that using green nanotechnology can lead to more sustainable energy solutions. The findings give useful ideas for developing better green technologies.

Keywords: Green Nanotechnology, Sustainable Energy, Nanomaterials, Life Cycle Assessment, Environmental Impact

Introduction: Looking for the more lasting parts of life, the push to find sustainable answers to the quickly growing issues of climate change and environmental damage has brought together the fields of advanced technology and eco-friendly efforts. This has led to a big breakthrough. The research aims to explore the complex connections of "Green Nanotechnology," which serves as the final point in this discussion. I recommend the reader look into "Sustainable Energy Solutions and Environmental Impacts" as a strong way to understand how all the topics in this section relate to nanoscience, especially in the areas of sustainable energy and environmental effects.

Nanotechnology, which works at the nanometer level, gives the ability to control materials and systems at the atomic and molecular level. This research takes a look at the idea of "shade" towards green nanotechnology, which is a concept focused on using eco-friendly processes and materials to reduce the environmental impact of nanotechnology^[1-2]. This approach uses the special properties of nanomaterials to make sustainable technologies possible. It shows that technological progress doesn't have to harm the environment. However, a key part of this study looks at how green nanotechnology can help drive the development of environmentally friendly energy solutions. With the increasing demand for clean energy worldwide, nanotechnology becomes a central focus in building highly efficient and safe energy technologies. Energy storage systems that use both chemical and electrical methods will also be transformed through the use of nanomaterials. Starting from an economic perspective and ending with the ecological aspect of sustainability, nanomaterials offer the chance to create a greener future, as long as all these ideas are put into practice^[3]. This research also aims to explain the detailed environmental effects of creating and using products based on nanotechnology solutions. The use of nanomaterials opens up new possibilities but also brings new risks to the global ecosystem and can have harmful effects on human health. This means that the potential benefits must be carefully balanced against these risks.

Methodology:

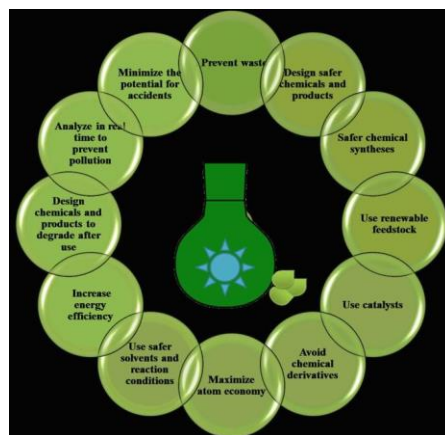
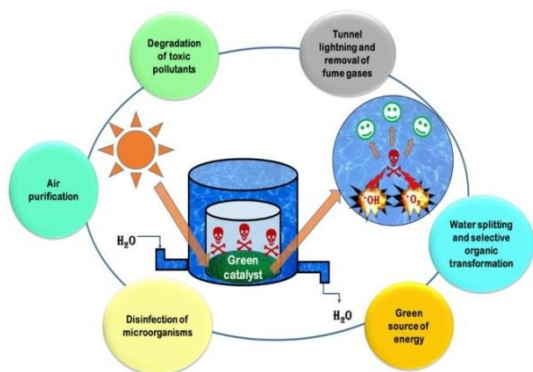
Synthesis of Nanomaterials: This study had several stages, and the first stage was making nanomaterials with a focus on sustainability. It considered both green and non-green methods. Green methods included using plants, while non-green methods involved chemicals and had some effect on the environment^[4]. For example, silver nanoparticles (AgNPs) were made using an aqueous extract from green tea leaves. The process involved a redox reaction where silver ions (Ag⁺) were reduced by polyphenols found in the green tea extract.

Ag⁺+Polyphenols->AgNPs + Other Byproducts

Solar Cell Fabrication: Nanotechnology helps improve the efficiency of solar cells. In this study, a mix of nanomaterials was used to create thin-film solar cells. Using nanostructured materials helped the cells absorb light and store energy more effectively.

Table-1: Power conversion efficiency of different nanomaterials

Nanomaterial	PCE (%)
AgNPs	8.7
QuantumDots	9.5
Control	6.2



Other uses of nanotechnology include improving energy storage devices like lithium-ion batteries [5]. Silicon nanoparticles were added to the anode, which boosted battery capacity. The best way to make silicon nanoparticles is through a method that uses a template. These silicon nanoparticles were then added to the anode material. To test the battery's performance, cyclic voltammetry and charge-discharge tests were conducted.

Experiments & Results: The results show a big improvement in the anode's capacity when silicon nanoparticles were added to metal oxide.

Nanomaterials Synthesis and Characterization:

Making silver nanoparticles (AgNPs) with green tea extract produced well-distributed particles with an average size of 20 nm. These were studied using TEM. DLS analysis confirmed the uniformity of the nanoparticles [6]. The synthesis methods used had little or no environmental impact, showing that sustainable nanomaterial production is possible.

Table2. Different synthesis method showing particle size and stability

Synthesis Method	Particle Size(nm)	Stability
Green Tea Extract	20	High
Citrus Peel Extract	25	Moderate
Chemical Reduction	30	Low

Solar Cell Performance: The solar cells made with nanomaterials performed better than the control ones. Adding silver nanoparticles (AgNPs) increased the power conversion efficiency (PCE) to 40%. Adding quantum dots increased efficiency by 53%, showing how effective nanotechnology is in improving solar cell performance.

Table3. PCE conversion efficiency

Solar Cell Configuration	PCE (%)
Control	6.2
AgNPs	8.7
Quantum dots	9.5

Results and Discussion: The data gathered and analysed from the work in this study shows how green nanotechnology has a huge potential in creating eco-friendly technologies that help with sustainable energy and have less impact on the environment. The green method of making silver nanoparticles (AgNPs) using green tea extract is a sustainable process that gives well-dispersed and stable nanoparticles, which is a good example of how to make nanomaterials in an environmentally friendly way ^[7]. Studies have shown that solar cells made with nanomaterials, such as AgNPs and quantum dots, have better efficiency in converting power. This supports and improves upon previous findings ^[8]. The level of efficiency demonstrates how nanotechnology can make solar energy harvesting a globally efficient and clean way to generate energy that is also cost-effective. Lithium-ion batteries that include silicon nanoparticles showed a significant increase in specific capacity (50% more), which is a major achievement in the field of energy storage technology ^[9]. This result highlights the potential of nanotechnology as a key solution for the growing need for energy storage, especially as renewable energy sources and portable electronic devices become more common, and there is a greater demand for efficient storage systems. The life cycle assessment results clearly show that green nanomaterials have a much lower environmental impact. Features like energy saving and reducing toxicity, which come with working with green nanotechnology, support the idea that using green nanotechnology is environmentally friendly across many areas. Looking at the current regulatory framework, it was clear that it was fragmented, which calls for a more unified and standardized approach to regulation.

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Pharmacognostical Study of Seed *Psoralea corylifolia*

Rajshri Nagar and Archana Gaur

University of Rajasthan, INDIA

Corresponding Email: archanagaur2403@gmail.com

Introduction: India possesses one of the richest traditions related to the use of medicinal plants. Currently a significant increase in the global demand for herbal products, accelerated pharmacognostical research and therapeutic potential. The name “Pharmacognosy” was derived from the Greek word Pharmacon which means a drug and gignosco means acquire knowledge. *Psoralea corylifolia* is commonly known as ‘Bakuchi’. One of the most endangered plants, *Psoralea corylifolia*, has been used medicinally to cure a number of illnesses, including diabetes, asthma, fever, itching, and skin problems. It grows throughout the plains of India, especially in the semi-arid regions of Rajasthan and Eastern districts of Punjab, adjoining Uttar Pradesh. The plant thrives well in areas with low to medium rainfall during the summer months. The plant showed properties like cardio active, antimicrobial and cytotoxicity. The aim of the present research work was to study the pharmacognostical study of the seed *Psoralea corylifolia*.

Methodology: *Collection and preparation of plant seed:* The seed of *Psoralea corylifolia* were collected and was washed to remove physical impurities and dried well. The dried seeds were

thoroughly powdered and stored in an air tight container for further use. *Organoleptic study*: - The seeds were subjected for organoleptic examination, based on colour, odour, taste, size, texture and shape. *Physical evaluation*: - Physical evaluation of seed was done by Powder and fluorescent Behavioural Study. The powder was treated with different chemicals like conc. HCl, conc. HNO₃, conc.H₂SO₄, water, ethanol and methanol. *Physico-Chemical Analysis*: - The determination of the foreign organic matter, loss on drying, ash values and extractive values, foaming index, swelling index gives a clear idea about the specific characteristics of crude drug.

Results & Discussion: Organoleptic study of the seed *Psoralea corylifolia* was done. The seeds are brown in colour, bitter in taste, partially kidney or oval shaped, which had a strong pungent smell, with 0.45mm-0.50mm in length, 0.30mm-0.40mm breadth and 0.20mm-0.25mm thickness. The seed was oily in touch. For Physical evaluation the powder was treated with different chemicals like conc. HCl, conc. HNO₃, conc.H₂SO₄, water, ethanol and methanol and showed light brown, burgundy colour, orange colour, light brown and dark brown colour respectively. The results obtained from the determination of the Physico-Chemical Analysis were Foreign organic matter 95.6%, Total ash value 75 %, Acid insoluble ash 74.5%, Water soluble ash 75 %, Loss on drying 11%, Foaming index <100, Swelling index No change observed, Extractive values (Water soluble 4.8%, Ethanol soluble 7.6%, Chloroform soluble 3.6%, Petroleum ether 5.8%).

Conclusion: Present work is an attempt to compile Pharmacognostical Study of Seed *Psoralea corylifolia*. This study indicates the organoleptic study which is used to identify the crude drug. Physical evaluation (powder microscopy and fluorescent microscopy) and the physico-chemical analysis such as ash value which can be used as reliable aid for detecting adulteration. These simple but reliable standards will be useful to a lay person in using the drug as a home remedy. Also, the manufacturers can utilize them for identification and selection of the raw material for drug production.

Keywords: Pharmacognosy, Organoleptic study, fluorescent Behavioral Study, Endangered, Chemotaxonomy, Biotransformation



Effect of Chitosan Packaging Supplemented with Wheatgrass Zinc Oxide Nanoparticles on Storage Life of Banana

Anjali Pandit¹ and Anita Mishra²

¹*Dr. B Lal Institute of Biotechnology, Jaipur, INDIA*

²*Biyani Girls College, Jaipur, INDIA*

Corresponding Email: anitamishra1103@gmail.com

Background: One of the major fruit crops in the global market is the banana. Bananas have a comparatively shorter shelf life due to their vulnerability to viral infections. Therefore, improving and expanding the storage life of ripened bananas has drawn a lot of interest from researchers and farmers. The postharvest life of bananas is affected and accompanied by the conversion of starch to sugar, softening of texture, postharvest weight loss, chlorophyll decay, and degradation. The issue regarding the loss of bananas due to their decreased post-harvest life should be addressed. This will overcome the problem of inappropriate supply of banana fruits to meet the demand of domestic and international markets.

Methodology: In the present study, a 7-day evaluation was done on the effect of chitosan coating supplemented with zinc oxide nanoparticles prepared with wheatgrass extract on bananas and compared with the effect of edible coating of chitosan alone. Edible coatings of zinc oxide nanoparticles extended storage life by reducing the rate of ripening and maintained the quality and freshness of banana fruits. Zinc oxide nanoparticles synthesis was done with wheatgrass (*Triticum aestivum*) aqueous extract and zinc salt, zinc acetate as precursors. Dynamic Light Scattering (DLS) and Ultraviolet–Visible spectroscopy (UV–Vis) were used to characterize the synthesized ZnO nanoparticles.

Result and Discussion: Nanocomposite film prepared with nanoparticles helped effectively in delaying the rate of fruit ripening and weight loss of bananas by 17% in the present work.

Conclusion: Nanocomposite film protects bananas from changes in sensory quality and firmness of fruit. Nanocomposite film also prevented changes in titratable acidity and reducing sugar throughout the storage period.

Keywords: Banana, Edible coating, Post harvest quality, Zinc Oxide nanoparticle.



Barriers to Survival: Health Decision-Making among Women in Yemen

Aziza Mohammed Derhem, Refka Sallam, Piyusha Majumdar

IIHMR University, Jaipur, India; Email: Aziza.mphis02@iihmr.in

Background: Yemen has been in conflict for more than ten years, which has created one of the world's worst humanitarian crises. The war has destroyed hospitals, limited basic health services, and forced millions to leave their homes. Women and children are the most affected, making up nearly 80% of displaced people. Many women face serious health risks such as pregnancy complications, lack of access to family planning, and gender-based violence (GBV). Even with humanitarian support, women's ability to make their own health decisions is still very limited. Poverty, cultural traditions and the need for male permission often prevent them from getting timely care. This article reviews existing studies and reports to understand the barriers that stop women from making health decisions in Yemen.

Methodology: This study is based on secondary data review. Information was collected from published research articles, reports by international organizations such as UNFPA, WHO, IRC, and ACAPS, as well as humanitarian databases between 2015 and 2025. The data was analyzed using frameworks for access to care, gender, and health systems, particularly Andersen's Behavioral Model and McLeroy's Ecological Model, to explore the multilevel barriers to women's decision-making.

Results and Discussion: Findings show that 80% of Yemen's population need humanitarian aid, with 8.1 million women and girls of reproductive age requiring urgent reproductive health services. The maternal mortality ratio is 385 per 100,000 live births, while the unmet need for family planning is estimated at 30-40% in conflict-affected areas. Only 50% of health facilities remain functional, and there are severe shortages of skilled birth attendants. Women's autonomy is restricted by cultural norms requiring male approval for health seeking, financial dependence, and exposure to gender-based violence. Similar barriers are observed in Afghanistan and Syria, where maternal mortality rates exceed 638 deaths per 100,000 live births, and over 50% of health facilities are non-functional.

Conclusion: Women's health decision-making in Yemen is shaped not only by individual choices but by structural inequities and conflict. Addressing these barriers requires strengthening laws, empowering women economically, expanding female health workforce especially in remote areas, and integrating gender-based violence services into health programs. Lessons from Afghanistan and Syria highlight that without systematic change, women in fragile settings remain at risk of preventable mortality.

Keywords: Women's Decision-Making, Maternal Health, Gender-Based Violence, Yemen, Secondary Data

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Natural Chalcone as Targeted Therapy for Obesity

Shubham Mathur and Manali Datta

Amity University Rajasthan, INDIA

Corresponding Email: shubham.mathur929@gmail.com

Background: The alarming rise in global obesity rate underscores the urgent need for the development of sustainable therapeutic strategies. World Health Organization defines obesity as abnormal or excessive fat accumulation that poses a health concern. A complex interaction between sedentary lifestyles, increased consumption of processed foods, decreased physical activity, and genetic predispositions are the feed forward instigators. Obesity can manifest in both preclinical (risk factor) and clinical (stand-alone illness) forms, each with distinct characteristics and health implications. Several approaches have been made to combat the progression of obesity. In the case of preclinical obesity, people with lower risks might be managed through lifestyle modifications, while those at higher risk may require pharmacotherapy. Sirtuin-1 (SIRT1) is found to play anti-obesity effect, mainly through the browning of white adipose tissue. According to research, people who naturally have higher levels of SIRT1 could be aided in weight loss. In this regard, activation of SIRT1 through natural compounds could be a promising approach for pharmacotherapy of obesity.

Methodology: Present study utilizes computational approaches to assess the direct binding potential of two natural polyphenols viz. butein, and piceatannol with SIRT1. These polyphenols were selected based on their previously reported role in sirtuins activation and good ADMET properties. The study would reveal the activating mechanism of selected polyphenols and helps in finding the potential natural compound for combating obesity. The SIRT1 direct binding capacity of butein, and piceatannol was evaluated through molecular docking followed by molecular dynamics simulation of the best docked complex.

Result and Discussion: Docking analysis revealed that butein, and piceatannol show significant binding affinity, suggesting their potential to directly interact with the SIRT1 protein. The estimated free energies for butein, and piceatannol were comes to be -4.30 and -3.83 kcal/mol, respectively. Butein demonstrated the strongest binding interaction supported by favorable binding energy and robust interaction with crucial residues of SIRT1. Butein interacts with SIRT1's allosteric or substrate-binding sites, as their interaction are similar to resveratrol's reported SIRT1 activation in related research. Further validation through MD simulations confirmed the stability of the butein–SIRT1 complex over the simulation time.

Conclusion: Computational findings strongly support the notion that butein is a promising natural compound for SIRT1-targeted therapy against obesity. More in-vitro and clinical research is required to validate these interactions and evaluate their functional relevance in SIRT1 activation for combating obesity.

Keywords: Polyphenol, Sirtuin-1, Adipose tissue browning, Molecular Docking, Obesity

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Bridging Traditional and Modern Approaches: Lessons from Global Mental Health Interventions for Yemen's Fragile Context

Refka Sallam and Anoop Khanna

IIHMR University, Jaipur, India

Corresponding Email: refka.khalid@gmail.com

Background: Mental health disorders present a significant public health burden globally. However, this burden is aggravated when it comes to low and middle-income countries. Yemen, particularly as a country facing ongoing conflict, poor economic growth, and a depleted public health system. This study explores the cultural and social hindering factors to mental health service delivery and to allocate optimal methods for integrating traditional healing with modern psychiatric care in Yemen. The study also aims to underscore the necessity for policy reforms to address systemic gaps in mental health infrastructure and promote effective service delivery.

Methodology: This study uses a desk-based research approach by synthesizing available secondary data in the literature, analyzing existing national Yemeni policies, and examining case studies from around the world to choose the best possible context-applicable methods that might ease the accessibility, acceptability, and effectiveness of mental health services in Yemen.

Result: Key strategies were identified, including empowering traditional healers through training programs that equip them to recognize mental health symptoms and refer patients to mental health professionals. Additionally, the development of a mobile-based system is proposed to facilitate access to mental health resources, self-assessment tools, and virtual consultations.

Discussion: This research highlights the potential for culturally relevant solutions to improve mental health care acceptance and effectiveness through a combination of psychological counselling and modern mental health practices, with local spiritual support, fostering community support networks, and public education campaigns aimed at sensitization of the community are all essential components of this proposed integrated approach. Furthermore, capacity building through national & international partnerships, strengthening local expertise skills, and achieving sustainability and scale-up of mental health care in Yemen.

Conclusion: Ultimately, the findings of this study advocate for a transformative and innovative approach to connect mental health delivery with culturally accepted practices in Yemen, aligning global mental health practices with the contextual needs of local communities. This study proposed that digitalization and contextualization of mental health care in fragile settings offer effective practical insights for policymakers and healthcare practitioners eager to enhance mental health services in Yemen.

Keywords: Mental Health, Mobile Health, Traditional Healing, Community Engagement, Yemen



Biosorption Approach for Heavy Metal Bioremediation

Pallavi Kaushik and Renu Khandelwal

Department of Zoology, University of Rajasthan, Jaipur

Corresponding Email: pallavikaushik512@gmail.com

Abstract: The industrial expansion that has unfolded over the last two centuries has unleashed a wave of heavy metal contamination upon our environment, creating alarming health risks that cannot be ignored. To address this critical challenge, a diverse array of remediation techniques has emerged, among which biosorption stands out as the most effective and sustainable solution. This innovative method is characterized by its inherent simplicity, cost-effectiveness, and minimal environmental footprint. During the biosorption process, harmful contaminants, known as sorbates, adhere strongly to the surfaces of biosorbents—materials often derived from inert biomass that do not necessitate growth or metabolic activity. Remarkably, various biological agents such as algae, fungi, and bacteria have demonstrated exceptional efficiency as biosorbents, allowing for the concentration and removal of heavy metals from polluted environments. The efficiency of biosorption is profoundly influenced by several key factors, including pH levels, temperature, and the specific type of biosorbent employed. Additionally, the mechanisms behind this remarkable process—encompassing complexation, ion exchange, and chelation—highlight the extraordinary ability of biological agents to detoxify and neutralise hazardous contaminants effectively. Biosorption primarily involves the surface properties of sorbent and chemical nature of the contaminants along with the impact of various factors on its efficiency. The standardization of biosorptive potential of biosorbents have been studied in batch or continuous flow experiments. The biosorptive potential is estimated from the ratio of initial to final contaminant concentration with respect to variables of time, pH, temperature, biomass dose, initial toxicant concentration to obtain the removal percent and biosorption capacity. Clearly, the undeniable success of biosorption not only provides a hope-filled pathway to mitigate heavy metal pollution but also reinforces its significance as a pivotal strategy in the relentless battle for environmental stewardship and public health protection.

Keywords: Biosorption, Heavy Metal, Contamination, Toxicity, Bioremediation



Phytochemical Analysis (Qualitative and Quantitative), Antioxidant and Antibacterial Analysis of *Prosopis cineraria*

Sonakshi Das and Ritu Jangid

Biyani Girls College, India

Corresponding Email: sci.ritujangid@biyanicolleges.org

Abstract: *Prosopis cineraria* (Spung tree) belonging to Fabaceae family is a well-known medicinal plant in Ayurvedic system of medicines. It was used as traditional medicine for treatment of various non-communicable diseases such as diabetes. Keeping in above properties in view, the present investigation has been done to study about the phytochemical screening, antioxidant activity and antibacterial potential of methanolic extract of *Prosopis cineraria* bark.

Methodology: The methanolic extract of *Prosopis cineraria* bark (10% w/v) was prepared in the laboratory by using decoction method and further tested for phytochemical screening, antioxidants and antibacterial activities.

Results: The methanolic extract of *Prosopis cineraria* bark was of Brown color and contain Alkaloid, Flavonoid, Glycosides, Saponins etc. as phytochemicals due to which it shows 93-95% antioxidant level and also shows good resistance against bacteria *Escherichia coli*.

Conclusions: The plant *Prosopis cineraria* and contain large number of phytochemicals such as Alkaloids, Flavonoids, Terpenoids, Tannins etc. and have good antioxidant activity which protects cells against free radicals that damages the cell and shows resistance against bacteria *Escherichia coli* thus with this we can conclude that further this extract can be used as antioxidant and antibacterial medicines for more use in vivo studies are required to be done.

Keywords: *Prosopis cineraria*, Phytochemical, Antioxidant, DPPH (2,2-diphenyl-1-picrylhydrazyl), Antibacterial.

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Gold Nanoparticle-Based Lateral Flow Assay for Hepatitis B and C virus Detection

Ankita Sharma, Yashika Kumawat and Nikita Sharma*

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding Email: yashikakumawat02@gmail.com

Abstract: One of the most significant types of paper-based point-of-care (POCT) diagnostic tools that are present today is lateral flow assays (LFAs). These devices demonstrate exceptional potential for rapid screening and management of infectious diseases during global pandemics and other public health emergencies, particularly where no modern research centre administrations are available. It offers rapid, cost-effective detection of various biomarkers across diverse biological sample types. A lateral flow assay (LFA) made up of four components that are a sample pad, where the sample is dropped; a conjugate pad, where biorecognition elements and labelled tags combine, a reaction membrane, which contains the test line and control line for target DNA-probe DNA interaction or antigen-antibody interaction and an absorbent pad, which stores waste. The scientific literature describes a number of different labelling probes, including gold nanoparticles (GNP), latex particles (LP), magnetic nanoparticles (MNP), and quantum dots (QDs). Effective infectious disease prevention and control require a comprehensive understanding of transmission dynamics. Hepatitis B virus (HBV) infection is a significant global health challenge, with nearly two billion people infected worldwide and 350 million suffering from chronic HBV disease. This study principally centres around the development and design of in vitro diagnostic (IVD) assay kits for hepatitis B and C virus detection. Gold nanoparticles with a diameter of 40 nm are utilized in developing test kits. Gold nanoparticles and particular antibodies are covalently bound together during the conjugation process. Whereas device assembling incorporated the following specifications that are nitrocellulose membrane (NCM) of 80 μm thickness, sample release pad of 20 mm, conjugate release pad of 10 mm, and absorbent pad of 18 mm. Performance evaluation assessed assay functionality and response time. The developed kits shows 99% sensitivity and specificity, with no interference or cross-reactivity.

Keywords: POCT, lateral flow assay, IVD, gold nanoparticles, infectious disease, Hepatitis B virus, Hepatitis C virus.

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Fast and Precise: Molecular Tools for Pathogen Detection

Anu Samota and Vishnu Sharma

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding Email: anusamotas@gmail.com

Abstract: Fast and accurate pathogen detection is critical for timely treatment and effective infection control, particularly during pandemics. Conventional diagnostic methods such as culture and microscopy are often time-consuming and may fail to identify causative agents. Molecular tools, including Cartridge-Based Nucleic Acid Amplification Test (CBNAAT) and real-time Reverse Transcription Polymerase Chain Reaction (RT-PCR), provide rapid and reliable alternatives. CBNAAT is a fully automated, cartridge-based assay that integrates nucleic acid extraction, amplification, and detection within a single platform, delivering results in 1–2 hours. It is especially useful in resource-limited settings and is widely employed for rapid detection of *Mycobacterium tuberculosis* and rifampicin resistance. In contrast, RT-PCR—considered the gold standard—enables both qualitative detection and quantitative assessment through real-time fluorescent monitoring, and is extensively used for viral infections such as COVID-19, Influenza, and H1N1. In the present study, both techniques were evaluated using clinical specimens for *M. tuberculosis* (MTB), COVID-19, H1N1, and HBV. CBNAAT analysis identified three MTB-positive samples with variable Ct values and two negative samples. RT-PCR results showed MTB detection in three samples (two low-positive and one high-positive), while two samples were negative. For viral detection, one sample was positive for COVID-19 and two were negative; all H1N1 samples were negative. HBV and HSV specimens tested positive in RT-PCR analysis. Overall, CBNAAT offers speed, simplicity, and point-of-care utility, whereas RT-PCR provides superior sensitivity, specificity, and scalability for large-scale testing. Together, these complementary molecular tools enhance diagnostic accuracy, enable early clinical decision-making, and contribute significantly to infectious disease control.

Keywords: Molecular Diagnostics, CB-NAAT, RT-PCR, Drug Resistance, Infectious Diseases.



Biotechnological Tools for STR-Based Forensic Analysis

Bhoomika Rajwaniya and Bhoomika Sharma

Department of Biotechnology, Biyani Girls College Jaipur, India

Corresponding email: bhoomikaraj03@gmail.com

Abstract: Biotechnological tools and technique are widely used in many fields to improve human life. With wide spectrum of usage, they are used in various field like medicine and clinical, pharmacology and even in Forensic Science. Such tools are PCR (Polymerase Chain Reaction), DNA sequencing, Electrophoresis, CRISPR- CAS 9, STR (Short Tandem Repeat). STR is a region of DNA consisting of short, repeated sequence of nucleotide based that vary in length. We mainly focused on analysis of the samples by using PCR, genetics sequencer and STR region. STR is highly sensitive and reliable even degraded or very low-quality sample can be analysed properly. STR analysis use PCR to amplify these variable regions, which are then separated by size to create a unique DNA profile. With the help of Biotechnological tools, STR profiling is broadly used in Forensic DNA for criminal cases (murder, rape, sexual assault) paternity testing and identification of unknown bodies. This process starts with the collection of sample-like blood, saliva, semen, hair, bones and teeth. DNA is extracted by Promega Maxwell and Applied Biosystems Automate Express. Then we use the PCR machine and gene sequencer for identify the STR profiles. The analysis of short tandem repeat (STR) data using GeneMapper software is a critical step in forensic DNA profiling for human identification. This process involves the detailed review and interpretation of electropherograms (E-grams) and associated data to generate a reliable DNA profile. Biotechnological tools provide the backbone for STR-based forensic analysis by ensuring accurate, fast, and reproducible results.

Keywords: Biotechnology, Short Tandem Repeat (STR), Forensic DNA, Genetic Markers, DNA profiling.



A Sustainable Carbon-Based Portable Water Filtration System for Fluoride Removal

Niharika Rajotiya and Bhoomika Sharma

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding Email: niharikarajotiya@gmail.com

Abstract: Availability of safe drinking water is a global challenge. Various heavy metals are present in water beyond the limits set by WHO and other healthcare organizations. Fluoride contamination, being a major concern in many regions due to its severe health such as dental and skeletal fluorosis. Conventional water purification methods fail to selectively remove fluoride with efficiency while being cost friendly. We use carbon-based water filters that are specifically designed for fluoride removal. Activated carbon, biochar, carbon nanotubes and grapheme derivatives are used in terms of their properties, adsorption mechanisms and modifications strategies to enhance fluoride affinity. The advantages of using carbon-based filters include availability, scalability and potential integration of raw material into household filtration system.

Laboratory tests demonstrated significant reduction of fluoride levels within safe drinking water limits (< 1.5 mg/L WHO guideline) while maintaining water quality with respect to other physiochemical parameters. The system also showed reusability which makes it cost efficient and sustainable. Our work highlights the potential of carbon-based portable filters as a practical solution to fluoride contamination, particularly in fluoride-prone regions and paves the way for scalable applications in decentralized water treatment.

Our result shows that the portable carbon-based filter gives an affordable and sustainable method for fluoride-specific purification. By combining selectively, reusability and ease of use, this innovation addresses a critical gap in safe drinking water technologies and holds promise for large-scale deployment.

Keywords - Fluoride, Contamination, Carbon-based, Reusability, Affordable



Pharmacognostical study of seed *Piper nigrum*

Riddhi Jangid and Anita Mishra

Biyani Girls College, Jaipur, Rajasthan

Corresponding e mail: anitamishra1103@gmail.com

Introduction: Pharmacognosy is the study of medicines derived from natural sources, and study of the physical, chemical, biochemical and biological properties of the drugs. *Piper nigrum* is commonly known as 'black pepper' has been used in the spices and also used in folk medicines in the treatment of various diseases i.e. cold, flu, fever, headache and also improves digestive health. Black pepper considered as the 'king of spices'.

Methodology: Pharmacognostical study helps in the identification of organoleptic study, physical evaluation and physicochemical analysis of *Piper nigrum* seed. Organoleptic evaluation based on colour, odour, taste, size, texture and shape. Physical evaluation of seed was done by using powder behavioural study and fluorescence study, physicochemical analysis- estimation of foreign organic matter, ash value determination, loss on drying, foaming index, swelling index, determination of phytoconstituents when extracted with suitable solvents.

Result and discussion: The seeds are brown and black in color, spicy in taste, round in shape, which had spicy, sharp pungent smell, with 0.77cm radius, 1.54 cm diameter. Seed was dry in touch. The results obtained from physicochemical analysis- foreign organic matter-98%, total ash value 95%, acid insoluble ash 25%, water soluble ash 39%, sulphated ash 8.5%, loss on drying 8%, water soluble extractive 6.2%, ethanol soluble extractive 6%, chloroform soluble extractive 4.2%, petroleum ether soluble extractive 10%.

Conclusion: These pharmacognostical evaluation provide data for standardisation and serve as a basis for the quality assurance of black pepper in traditional and modern herbal formulation.

Keywords: Pharmacognosy, Organoleptic, Physicochemical, extraction, phytoconstituents, fluorescence.



Green-Nanotechnology in Waste-Water Treatment for Public Health Safety

Sakshi and Ritu Jangid

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding Email: sakshicharan96@gmail.com

Introduction: Green-nanotechnology offers a sustainable and highly efficient approach to wastewater treatment directly contributing to improve public health safety. Nanomaterials such as green-synthesized metal nanoparticles, carbon-based nanostructures and nano-composites exhibit superior surface area, catalytic reactivity and anti-microbial properties that enhance contaminant removal efficiency.

Methodology: Importantly green synthesis of nanomaterials using plant extract of many plants like *Azadirachta indica*, *Eucalyptus globulus*, *Carica papaya*, microorganisms like *Pseudomonas stutzeri*, *Trichoderma harzianum*, *Chlorella vulgaris* and biodegradable polymers minimizes secondary pollution and reduces energy input, aligning with the principle of sustainable development. Integration of these eco-friendly nanomaterials into advanced oxidation processes, adsorption systems has demonstrated significant improvements in pathogen inactivation, heavy metal sequestration and organic pollutants degradation.

Result and discussion: The application of green nanotechnology in waste-water treatment thus represents a promising paradigm for ensuring safe water reuse and protecting community health, while mitigating environmental risks associated with conventional nanomaterials production. The integration of nanomaterials with membrane and photocatalytic systems enhances water purification efficiency.

Conclusion: Green-nanotechnology not only holds promise for pollution reduction but also aligns with the global goals of sustainability and circular economy.

Keywords: Green-nanotechnology, eco-friendly nanomaterials, Environmental Biotechnology, Public health and safety.



Biotechnology and Emerging Infection Disease: Building Climate-Resilient Health System

Shagun Kumari Meena and Anita Mishra*

Department of Biotechnology, Biyani Girls College Jaipur, India

Corresponding email: 5shagunmeena@gmail.com

Abstract: Climate change is intensifying the spread of emerging infection diseases through modified rainfall, deforestation, global health, and increase in the average temperature, flooding, climate-related disasters, expanding the range of vector distribution such as mosquitoes, ticks, rodents and increasing in human-pathogen interactions. Vector borne disease and water borne disease such as malaria, chikungunya, Japanese encephalitis, typhoid, cholera and zika virus. During the rainfall seasons further health risk by skin allergies, insect- related allergies, fungal infections, coughing, sneezing, mosquito borne illnesses.

Biotechnology plays a pivotal role in climate-resilient health system by improving the disease prevention, detection, treatment and response to lighten the burden of (EIDs). Advances such as Genomic sequencing allow rapid identification of new pathogens, biosensors and molecular diagnostics enable rapid detection and monitoring of pathogens in climatic-sensitive region. Vaccines and therapeutics including DNA and mRNA to recombinant technologies. Biotechnological inventions such as CRISPR-based antivirals and antimicrobial agents. Additionally, monoclonal antibodies, therapeutic proteins and biologics for targeted therapies for rapid response to emerging disease. Gene editing (CRISPR\Cas9) to reduce mosquito fertility or transmission capacity. Genetically engineered microbes for controlling water-borne pathogens. Biotechnology facilitates the development of climate-resilient crops and safe water systems, indirectly reducing disease. By integrating biotechnology with bioinformatics, artificial intelligence, epidemiological modelling, health system can predict and prepare for future outbreaks more effectively. In conclusion, biotechnology serves as cornerstone in building climate-resilient health system by ensuring adaptability, sustainability, and preparation against the growing threat of climate-driven infectious disease.

Keywords: biotechnology, CRISPR, Emerging infectious disease, Climate change

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Healthcare in Polycystic Ovary Syndrome and Polycystic Ovary Disease

Tamanna and Anita Mishra

Department of Biotechnology, Biyani Girls College Jaipur, India

Corresponding email: tamannapoonia1206@gmail.com

Abstract: In recent years, PCOD (Polycystic ovary disease) and PCOS (Polycystic ovary syndrome) are become major health problem in women. Health Care is most important in PCOD and PCOS if we cannot manage health care or life style. These both conditions are associated with menstrual irregularities, increased risk of type 2 diabetes, insulin resistance, subfertility or in some cases it is converted into ovarian cancer and immature ovarian cysts. Healthcare management for PCOD and PCOS require an integrated and multi-disciplinary approach. Lifestyle modifications for healthcare management in PCOD and PCOS are healthy diet, weight management and yoga. These lifestyle modifications help to reduce stress, regulate hormones secretion, improve productive health blood circulation in the pelvic region etc. Some yoga asanas are Pranayama, Bhujang asana, Dhanu asana, core and pelvic exercise also help to overcome the PCOD and PCOS. Medical management including oral contraceptive pills, metformin, improve insulin resistance. Anti-androgenic medications are used for acne and excess hair growth. Some herbs also help to reduce PCOD and PCOS, such as Tulsi, Ginger, ajwain, dalcini, etc. Addition of green vegetables, fruits and lean protein in diet. Avoid dairy products, refined food and oily food maintain hygiene properly and also maintain a balanced diet and healthy life style. To prevent occurrence and onset of PCOD one should take balanced diet rich in proteins, including physical activities in daily routine, stay hydrated, reduce stress, meditate, take 6-7 hours' sleep, avoid excessive intake of processed food and caffeine, avoid excess carbohydrates and sugary drinks. Negative thinking, stress for long period of time, anxiety, depression, increases probability of occurrence of PCOD. To prevent occurrence of PCOD and PCOS maintain healthy life style, be in touch with nature, think positive.

Keywords: PCOD, PCOS, lifestyle, yoga, healthcare



Production of Biofuel Using Microorganism

Yugeshwari Goutam and Anita Mishra*

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding Email: raksha.goutam2019@gmail.com

Introduction: Energy plays a central role in human development, industrial growth, and modern lifestyles. Today, most energy requirements are met through fossil fuels such as coal, petroleum, and natural gas. These resources are non-renewable and are being consumed at a very fast rate. Their excessive use has also led to environmental concerns such as greenhouse gas emissions, climate change, and air pollution. This situation has created the need for alternative energy sources that are renewable, eco-friendly, and sustainable. Biofuels have emerged as one of the most promising options. They are produced from biological materials and are considered carbon-neutral, meaning they release only as much carbon dioxide as was absorbed during growth. Microorganisms including bacteria, yeast, fungi, and microalgae are being explored as natural producers of biofuels due to their ability to grow quickly and utilize waste or low-cost feedstock.

Methodology: Different microorganisms are capable of producing different biofuels. Yeast such as *Saccharomyces cerevisiae* ferments sugars from crops, fruit wastes, or agricultural residues to produce bioethanol. This ethanol can be blended with petrol to reduce pollution. Bacteria and fungi are able to generate biogas like methane and hydrogen through anaerobic digestion of organic matter. Microalgae are especially important because they use sunlight and carbon dioxide to produce large amounts of biomass. Their lipids can be extracted and converted into biodiesel using transesterification. Advanced biotechnology is further enhancing microbial performance. With the help of metabolic engineering and genetic modifications, scientists are increasing fuel yield, reducing production cost, and making processes more efficient.

Results and Discussion: Research and pilot projects worldwide have confirmed that microbial biofuels are sustainable and environment-friendly. They reduce greenhouse gas emissions, recycle agricultural waste, and provide a cleaner energy source. For countries that rely heavily on imported fossil fuels, biofuels offer energy security and economic independence. However, large-scale production still has challenges. High cultivation costs, difficulties in harvesting microorganisms, need for large bioreactors, and feedstock availability are major barriers. Still, continuous research is improving these processes. Advances in synthetic biology, bioprocess optimization, and large-scale cultivation techniques are showing positive results. Several pilot plants and industries have successfully demonstrated the potential of microbial biofuels, indicating that commercial production at a large scale is possible in the near future.

Conclusion: Biofuels produced by microorganisms are an effective, renewable, and sustainable alternative to fossil fuels. They not only reduce pollution and greenhouse gas emissions but also make use of agricultural and industrial waste. Although economic and technological challenges exist, ongoing research and development are steadily overcoming these issues. With wider adoption,

microbial biofuels can reduce dependence on fossil fuels, improve environmental quality, and support global sustainable development. Thus, microbial biofuels represent a highly practical renewable energy solution for the future.

Keywords: Biofuel, Microorganisms, Renewable Energy, Sustainability, Biotechnology



Nanoparticle-Based Approaches for *Skin Cancer*

Khushi Khan and Smita Sisodiya

Biyani Girls College Jaipur, India

Corresponding Email: smitasisodiya@gmail.com

Abstract: Skin cancer, a serious and increasingly common disease, is primarily caused by overexposure to ultraviolet (UV) radiation from the sun or artificial sources like tanning beds. With global warming and a weakening ozone layer, UV radiation levels are rising, increasing the risk of DNA damage and mutations in skin cells. The main skin cells affected are melanocytes, basal cells and squamous cells. Conventional treatments, such as chemotherapy, frequently lack specificity, harming both healthy and malignant tissues and causing significant side effects. Nanotechnologies provides a promising alternative for targeted drug delivery by using nanoparticles such as liposomes, carbon nanotubes, and polymer-based carriers. These microscopic carriers improve cancer medications' therapeutic index by focusing their actions on tumour locations while minimizing systemic toxicity. Treatment based on nanoparticles are more accurate than conventional chemotherapy and may result in fewer side effects. Engineered nanoscale drug delivery devices use the enhanced permeability and retention (EPR) effect to selectively locate within tumour tissues, increasing therapeutic dosage concentration at the cancer cell whereas decreasing target injury. This marks a significant change in the potential future treatment of skin cancer and is consistent with the more general objectives of minimally invasive and individualized care. According to preliminary studies, treatments based on nanoparticles greatly improve the specificity and effectiveness of treating skin cancer, which is consistent with the larger objectives of minimally invasive and customized therapy. As research progresses, nanoparticle-mediated strategies have the potential to revolutionize dermatologic oncology care standards by providing patients all over the world with safer and more efficient treatment alternatives.

Keywords: skin cancer, Nanoparticles, Nanotechnology, Cancer treatment, Chemotherapy (limitations), Polymer-based nanoparticles.



A Descriptive Study to Assess the Knowledge and Attitude Regarding Eating Disorder Among Adolescent in Selected School at Sikar District (Rajasthan)

Anesh Kumar Saini

Government College of Nursing, Rajasthan University of Health Sciences, Jaipur, Rajasthan, India

Abstract : Adolescence represents a phase of transition between childhood and adult life, marked by significant changes in the biological, psychological and social dimensions. This period is extremely important for the adolescents to choose a healthy lifestyle, as it is when habits and attitudes are established, including eating habits. The three most common eating disorders are Anorexia nervosa, Bulimia nervosa and binge eating disorders. Eating disorder should be taken very seriously. Developing the knowledge and attitude of adolescent about eating disorders is helpful in prevention of medical and psychiatric complications that may result from Anorexia nervosa, and Bulimia nervosa.

Objective of the study: The objectives of the study are to: To assess the existing knowledge regarding eating disorders among adolescent in selected school at Sikar District. To assess the attitude regarding eating disorders among adolescent in selected school at Sikar District. To find the association between knowledge with selective demographic variables among adolescent in selected school at Sikar District. To find the association between attitude with selective demographic variables among adolescent in selected school at Sikar District. To establish relationship between knowledge and attitude regarding eating behaviour of adolescents of selected school at Sikar District (Rajasthan).

Hypothesis:

H1- There is a significant association between knowledge and selected demographic variables regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

H0- There is no significant association between knowledge and selected demographic variables regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

H2- There is a significant association between attitude and selected demographic variables regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

H0- There is no significant association between attitude and selected demographic variables regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

H3- There is a significant relationship between knowledge and attitude regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

H0- There is no significant relationship between knowledge and attitude regarding eating disorder among adolescent in selected school at Sikar District at 0.05 level of significance.

Methodology: The study was descriptive in nature sample size was 100 adolescents selected by simple random sampling techniques from a selected school of Sikar. The data collection was done by structured knowledge questionnaire on eating disorder and modified EAT 26 attitude scale. Collected data was analyzed by using descriptive and inferential statistics.

Results: The result revealed that the that overall mean knowledge score with standard deviation was 3.32 and the highest frequency of adolescents 60 (60.00%) had inadequate knowledge on eating disorders and in attitude the mean attitude score with SD was 8.48 and the most of 70 (70.00%) adolescents had positive attitude towards eating disorders. The negative correlation ($r = -0.020$) was found between the knowledge of adolescents and attitude of adolescents towards eating disorders.

Interpretation & Conclusion: The study revealed that the level of knowledge and attitude regarding eating disorder was low among the adolescents. The findings also provide guidelines to plan different level of intervention strategies at primary secondary and tertiary level that present and control eating disorders and by contributing towards adolescent's health and safety.

Keywords: Adolescents; eating disorder; knowledge; attitude; Anorexia nervosa; EAT 26; Bulimia nervosa; binge eating disorder



AI and Machine Learning in Chemical Analysis: Driving the Future of Smart Laboratories

Riya Sharma, Kanupriya Sharma

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding email: drkanu.chem@gmail.com

Abstract : The combination of Artificial Intelligence (AI) and Machine Learning (ML) in chemical analysis is changing how chemists interpret data, design experiments, and solve problems. As advanced analytical techniques grow rapidly, laboratories generate complex datasets that need innovative tools for effective processing. AI algorithms can find hidden patterns, predict how molecules behave, and automate instrument control, making chemical analysis quicker and more reliable than ever. ML models have shown great potential in improving chromatographic methods, increasing the accuracy of spectroscopy, and advancing electrochemical sensor technologies. AI is also helping create autonomous laboratories, where robotic systems conduct experiments, monitor

reactions, and adjust parameters in real time. This reduces human involvement and errors. These advances speed up pharmaceutical discovery and environmental monitoring while paving the way for cost-effective, sustainable, and high-throughput chemical research. Despite ongoing challenges with data quality, algorithm training, and computing resources, the combination of AI and chemistry is likely to transform scientific exploration. By merging computational intelligence with chemical knowledge, AI not only aims to speed up discovery but also aims to redefine the fundamentals of analytical chemistry. It has the potential to shape the future of chemical analysis.

Keywords: Artificial Intelligence, Machine Learning, Analytical Chemistry, Data Science, Smart Laboratories



Green Nanotechnology in oral care: Indian Tradition Inspired Functionalized Bristle

Kaustubh Jumle, Manali Datta

Amity University Rajasthan, INDIA

Corresponding Email: manali.datta@gmail.com

Abstract

Gingivitis is a reversible periodontal disease caused by microbial plaque accumulation and can progress to the more severe periodontitis. *Pseudomonas aeruginosa* contributes to its progression by forming resilient biofilms that enhance adhesion and resistance. Combining betel leaf extract with silver nanoparticles represents an effective and sustainable strategy in oral care, as betel leaf provides potent antimicrobial and anti-inflammatory phytochemicals while silver nanoparticles offer broad-spectrum antibacterial activity and enhanced biofilm disruption. This synergy can significantly improve prevention and treatment of biofilm-associated gingivitis, promoting healthier gums and overall oral hygiene.

Keywords: Gingivitis, Biofilm, *Pseudomonas aeruginosa*, Betel leaf extract, Silver nanoparticles



Biosynthesis of Nanoparticles Using Endophytes: An Eco-Friendly Solution

Lalita and Amita Sharma

Department of Botany, Kurukshetra University, Haryana, INDIA

Corresponding Email: lalitayadav22111999@gmail.com

Abstract: Nanotechnology offers vast potential across agriculture, medicine, and environmental sustainability, but conventional nanoparticle (NP) synthesis methods are often costly, energy-intensive, and environmentally hazardous. Green synthesis using endophytic microorganisms has emerged as an eco-friendly alternative. Endophytes—bacteria, fungi, and actinomycetes residing within plants—can reduce metal ions into stable nanoparticles with defined size and shape through enzymatic and metabolic processes. These biogenic nanoparticles demonstrate antimicrobial, anticancer, antioxidant, and plant growth-promoting activities. Moreover, they offer solutions for environmental challenges such as pollution remediation and eco-friendly crop protection. This work summarizes the biosynthesis, potential applications, and future perspectives of endophyte-mediated nanoparticles as a sustainable approach. Plant tissues are surface-sterilized, and endophytic microorganisms are isolated using selective media.

Identification is performed through morphological and molecular methods (16S rDNA and 18S rDNA sequencing). For nanoparticle synthesis, the isolates are exposed to metal salts, and nanoparticles are formed either extracellularly in culture filtrates or intracellularly within cells. Biosynthesis is confirmed by colour change and characterized using techniques such as UV-Vis spectroscopy, TEM/SEM, XRD, and FTIR. The biological and environmental activities of nanoparticles are evaluated for antimicrobial, antioxidant, anticancer, and pollutant remediation potential. Endophyte-mediated synthesis has successfully produced nanoparticles of silver, gold, zinc oxide, and copper with diverse shapes and sizes. These nanoparticles exhibit strong biological activities, including suppression of plant pathogens, stimulation of plant growth, and inhibition of cancer cell lines.

Compared to chemical and physical methods, microbial synthesis is safer, cost-effective, and scalable. From an environmental perspective, this green approach avoids the release of toxic by-products, reduces dependence on harmful chemicals, and lowers energy consumption. Biogenic nanoparticles also show promise in wastewater treatment, heavy metal removal, and controlling agricultural pests without damaging ecosystems. Thus, endophytic microorganisms not only provide new opportunities in agriculture and medicine but also contribute to environmental sustainability. Despite these advantages, challenges remain. Many endophytes are unculturable, and the precise biosynthetic pathways are not fully understood. Additionally, large-scale and field-level applications require optimization and regulatory guidelines to ensure safety and effectiveness. Endophytic microorganisms represent a promising, sustainable platform for nanoparticle biosynthesis. Their ability to generate eco-friendly nanomaterials offers practical applications in agriculture, medicine,

and environmental remediation. By reducing chemical use and preventing environmental pollution, this approach contributes to global sustainability goals. Future research should focus on unlocking unculturable microbial diversity, clarifying enzymatic mechanisms, and scaling up production for industrial and environmental applications.

Keywords: Endophytes, Green nanotechnology, Sustainable agriculture, Environmental remediation, Ecofriendly synthesis.



Investigation of Therapeutic Efficacy of Silver Nanoparticle of Citrus Peel Extract

Chhavi Acharya, Priyanka Singh

Nims institute of Allied Medical Science and Technology, NIMS University Rajasthan, Jaipur, INDIA
Corresponding Email: priyay20@gmail.com

Abstract: This study aimed to evaluate the efficacy of silver nanoparticles synthesized from orange peels extracted as antimicrobial and anticancer agents against growth of pathogen and human colon carcinoma cell line (HCT-116). Phytochemical screening was done to estimate bioactive components in peel extract of *Citrus reticulata* (kinnow). Green synthesis nanoparticles are carried out by incubating a mixture of silver nitrate and peel extract in dark conditions under standard conditions. The nanoparticles were further characterized using FTIR, SEM, TEM and DLS techniques.

Agar well diffusion technique was used to determine their antimicrobial property and MTT assay methodology was employed to estimate their efficacy against human colon carcinoma cell line (HCT-116). Phytochemical screening of *Citrus reticulata* (kinnow) showed the presence of flavonoid, saponin, terpenoids, proteins, carbohydrates and phenolic compounds. Flavonoid enriched citrus orange peel's extract was used for synthesis of silver nanoparticles (AgNPs). SEM and TEM analysis confirmed the formation of spherical and uniform nanoparticles.

The average size of the synthesized nanoparticle was estimated as 11 nm by DLS technique. FTIR analysis of the green synthesized AgNPs showed the presence of alcohols, phenolics, alkynes, aliphatic primary amines, and amino acid groups. The nanoparticles showed an effective zone of inhibition against growth of pathogens like *Klebsiella pneumoniae* and *Enterococcus bacteria*. Their cytotoxic effect was estimated against the human colon carcinoma cell line (HCT-116). The results revealed the concentration has a direct correlation with cell viability and their concentration varying 8-10 µg/ml (IC₅₀) showed effective anticancer activity against HCT-116 cell line. The synthesized silver nanoparticle has improved anticancer, antimicrobial activity in comparison to the orange peel

extract. This method for green synthesis silver nanoparticles can be considered as a simple, low-cost, and environmentally-friendly approach for bioconversion of biological waste products into value-added products.

Keywords: Green Silver Nanoparticles, *Citrus orange* peels, Antibacterial Activity, Cytotoxic Activity, Carcinoma Cell Line

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Green Synthesis of Nanoparticles

Isha Sharma, Kanupriya Sharma

Department of Chemistry, Biyani Group of Colleges, Jaipur, INDIA

Corresponding Email: ishash909@gmail.com

Abstract: Green synthesis of nanoparticles using plant extracts provides a sustainable alternative to conventional chemical and physical methods, which often use toxic chemicals and require substantial energy. This environmentally friendly approach harnesses natural compounds like flavonoids, alkaloids and phenolic acids to reduce and stabilize nanoparticles. Cost-effective and biocompatible, it supports applications in drug delivery, cancer therapy, antimicrobial treatments, water purification, and energy storage systems like batteries and supercapacitors. The increasing focus on eco-conscious nanotechnology drives interest in green synthesis due to its alignment with sustainable practices.

The process starts with selecting and identifying plant materials, such as leaves, roots, or seeds, based on their bioactive compound content. The chosen plant part is washed, dried, and extracted using a solvent, typically water or ethanol, to produce a clean extract, which is filtered to remove impurities. This extract is mixed with a metal salt solution, such as silver nitrate or gold chloride, under controlled conditions. Bioactive molecules reduce metal ions, initiating nanoparticle formation, often indicated by a color change. Parameters like pH, temperature, and extract concentration are adjusted to tailor nanoparticle size and morphology. The synthesized nanoparticles, typically 10–100 nm in size, are characterized using UV-Vis spectroscopy, FTIR, XRD, and SEM to confirm their size, shape, and stability. Nanoparticle properties vary with the plant extract's composition and reaction conditions, with phenolics often enhancing stability, particularly for silver nanoparticles. These nanoparticles show potential in antimicrobial applications, drug delivery, and water treatment. However, challenges like scalability and reproducibility persist, requiring further research to optimize synthesis for consistent, large-scale production. Green synthesis of nanoparticles using plant extracts offers a biocompatible, eco-friendly approach to nanotechnology, reducing the environmental impact of traditional methods. Its versatility supports advancements in healthcare, environmental remediation, and energy storage. Continued efforts to refine synthesis parameters and improve scalability are essential for widespread

use. This method aligns with global sustainability goals, fostering innovative solutions in green nanotechnology.

Keywords: Nanoparticles, Bioactive molecules, Spectroscopy, Sustainability



AI and Robotics: Shaping Future Healthcare

Kashish Swami and Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: sci.gyanwati@biyanicolleges.org

Abstract: Community-based approaches to health and sustainability emphasize active participation, empowerment, and collaboration of local populations in addressing health and environmental concerns. By integrating indigenous knowledge with scientific practices, these approaches encourage culturally relevant, cost-effective, and sustainable solutions. They promote preventive health measures, foster behavioral change, and strengthen social networks, ultimately bridging the gap between policy and practice. Through shared ownership and responsibility, community-driven strategies contribute to better health outcomes, resilience, and long-term ecological sustainability. The significance of community-based approaches lies in their ability to ensure inclusiveness, accountability, and adaptability. Unlike top-down interventions, these strategies empower communities, encourage local innovation, and strengthen marginalized voices. They also enhance trust and build resilience against public health crises and environmental challenges, contributing directly to the goals of equity, environmental stewardship, and sustainable development.

Challenges: Limited resources and funding for community-led initiatives. Lack of awareness or resistance to behavioral change. Inadequate training and technical expertise within communities. Difficulty in sustaining long-term participation and motivation. Conflicts between traditional practices and modern interventions. Policy gaps or weak institutional support for community engagement.

Conclusion: Community-based approaches are essential for linking health and sustainability in a way that is participatory, equitable, and resilient. While challenges exist, their benefits in fostering empowerment, sustainability, and stronger health systems outweigh the barriers. Strengthening institutional support, capacity-building, and partnerships between communities and policymakers can enhance the effectiveness of these strategies.

Keywords: Community participation, Sustainability, Environmental stewardship, Preventive healthcare, Inclusive development



The Role of Microgravity in Cancer Research and Human Health

Kashish Yadav and Smita Sisodiya

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: smitasisodiya2018@gmail.com

Abstract: Microgravity, a near-weightless environment, causes significant alterations in cellular function that provide important information about people's health and illness. In cancer research, microgravity has emerged as a potent technique for researching tumour biology, revealing abnormalities in cell shape, expression of genes, and proliferation. Microgravity promotes apoptosis in various cancer cells by disrupting the regulation of proteins responsible for cell survival and death, and by inhibiting cellular proliferation. However, increased reactive oxygen species (ROS) levels in microgravity environments can damage DNA, cause mutations, and activate oncogenes, underlining its dual role in suppressing and potentially beginning cancer. Simulated microgravity, accomplished with tools such as the clinostat, allows for long-term terrestrial research in which cancer cells form three-dimensional spheroid forms that closely resemble in vivo tumours. The clinostat eliminates the unidirectional influence of gravity, allowing for more accurate studies of cellular responses and drug sensitivity. These models facilitate drug sensitivity testing and treatment development. Beyond cancer, microgravity research advances our understanding of illnesses such as osteoporosis, cardiovascular malfunction, and immunological suppression, which benefits both astronauts and patients on Earth. In conclusion, microgravity is a transformational research tool in the life sciences. Its ability to uncover hidden aspects of cellular behaviour and disease pathways opens up new possibilities for precision medicine, drug development, and therapeutic innovation. The findings from microgravity research offer the potential to benefit both astronauts in space and patients on Earth, bridging the gap between space exploration and medicinal advances.

Keywords: Microgravity, Cancer, Apoptosis, Clinostat, Oncology.

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Sustainable Modifications of Biodegradable Polymers

Komal Kanwar and Neetu Khandelwal

Department of Chemistry, Biyani Girls College, Jaipur, INDIA

Corresponding Email: kanwarsingh@gmail.com

Abstract: The increasing environmental impact of synthetic plastics has created an urgent need for sustainable alternatives, biodegradable polymers have emerged as promising eco-friendly materials that can decompose naturally through microbial action, thereby reducing long term pollution. Continuing technological progress in the modifications and processing of biodegradable polymers leads not only to the enhancement of the product quality, but also to the reduction of their price.

Recent research is focused on improving their performance through polymer blends, nanocomposites and enzymatic modifications. Biodegradable polymers are rapidly emerging as a sustainable alternative to traditional petroleum-based plastics and polymers. One ongoing development focuses on biodegradable plastic made from a synthetic-base polymer, such as polylactic acid and polycaprolactone, with added synthesized selected nanoparticles starches.

Keywords: Nanocomposites, enzymatic modifications, sustainable, polylactic, petroleum.



Impact of Different Biopesticides on Feeding Behavior of *Papilio demoleus*

Puja Dewanda¹, Umesh Dutt², Sandeep Dewal¹

¹Biopesticidal Lab, Dept. of Zoology, S.D. Govt. College, Beawar

²Dept of Zoology, S.P.C.G.C. Ajmer

Corresponding Email: sandeepdewal91@gmail.com

Abstract: India is on fifth position in production of citrus fruit in the World. It produces 7464000 MT citrus fruit every year. These fruits are well known and have high demand because of rich substance of vitamin C and reviving juice. Various sorts of citrus fruits like lime/lemon, Sweet/orange, musambi, Malta and kinnow are grown in India in enormous scale. Maharashtra, Andhra Pradesh, Punjab, Karnataka, Uttarakhand, Assam, Gujarat and Bihar are major citrus fruits producing states in India. Climate change will provide new ways for invasive species to encroach on new territory and sometimes helps to maintain the widespread biodiversity and ecological balance. Production of citrus fruit is profoundly influenced by the serious invasion of various kinds of insect pests; however, lemon butterfly (*Papilio demoleus*) is the most dangerous pest in citrus plantations exceptionally in nurseries. Its caterpillars feed on young leaves, defoliate the small plants and young twigs of grown up trees. The caterpillar feed voraciously on leaf lamina. The caterpillar has five instars in their larval period. One cycle of *Papilio demoleus* takes commonly 25-28 days and in ideal condition 5-8 cycles have been recorded in one year. I, II and III instar stages are dark brown in colour and has white marking on 8th and 9th segment, which seems a white patch of uric acid stored in a Bird's droppings. It causes them to escape from predation. The insecticides offer a very good control of the insect pests, but these are directly or indirectly harmful to mankind. So, it has become necessary to evolve control measures, which may be selective in action and relatively harmless to nontarget organisms and human beings.

Keywords: biopesticides, lemon, caterpillar.



Bio-Based Textiles: EcoStitch's Vision for a More Sustainable Industry

Vanshika Dadhich, Muskan Sharma, Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding email: vanshikadadhichyellow@gmail.com

Abstract:

As a sustainable alternative to traditional petroleum-based synthetic fibers, bio-based textiles are developed from renewable, biological sources, including plants, animals, and microorganisms. These materials contribute to a more eco-conscious textile industry by being biodegradable, reducing the industry's carbon footprint, and lessening dependency on fossil fuels. Their production processes often require significantly less energy and water. Bio-based fibers are typically categorized by their origin: cellulose-based fibers from plants, protein-based fibers from animals, biopolymers like PLA and PHA, and innovative fibers derived from microbial sources. The methodology for creating these textiles is dictated by the selected raw material. For instance, plant-based fibers involve the mechanical or chemical extraction, purification, and regeneration of cellulose through spinning. Protein-based textiles are formed by extracting proteins like keratin or fibroin, dissolving them, and then employing a wet-spinning process. Microbial textiles are cultivated through fermentation to produce biomaterials such as bacterial cellulose or fungal mycelium, which are then processed into usable sheets or fibers. Furthermore, biopolymers are synthesized when plant-derived starches or sugars undergo microbial fermentation to produce monomers like lactic acid, which are subsequently polymerized and spun into fibers. The resulting regenerated fibers exhibit strong environmental credentials, including notably lower water consumption and reduced carbon emissions compared to conventional textile production. Crucially, these ecological benefits are achieved while maintaining the essential mechanical properties required for modern applications. These properties include high tensile strength, adequate stretchability, long-term durability, softness, breathability, and effective moisture management, ensuring they can meet the functional demands of today's consumers. This study specifically focused on converting plant-based by-products into semi-synthetic fibers, demonstrating that the integration of biotechnological methods with sustainable material sources offers a practical and environmentally responsible pathway for the future of textile manufacturing.

Keywords: Plant-based fiber, carbon footprint reduction, sustainable textiles, eco-friendly, semi-synthetic.

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The Future of Space Medicine

Bhavya Lilani, Rachna Khandelwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding email: lilanibhavya22@gmail.com

Abstract: Human space exploration presents unique medical challenges due to conditions like microgravity, space radiation, isolation, and psychological stress. These factors contribute to bone density loss, muscle atrophy, cardiovascular shifts, immune dysfunction, and mental health issues. As missions expand beyond Earth orbit toward the Moon and Mars, the development of advanced space medicine becomes essential for astronaut survival and mission success. The field integrates medicine, mathematics, and advanced technology. Wearable sensors and telemedicine systems are being developed to enable real-time astronaut health monitoring. Artificial intelligence supports diagnostics and decision-making during emergencies, while 3D bioprinting shows promise in generating tissues and organs in space.

Mathematical models and simulations help predict radiation risks, cardiovascular responses, and pharmacokinetics in microgravity, guiding both prevention and treatment strategies. Recent innovations highlight the importance of predictive and preventive healthcare in space. Telemedicine is already effective on Earth in remote locations and is now being adapted for spacecraft. Wearable devices detect early physiological changes, and AI enhances interpretation of biomedical data. Mathematical modeling has successfully estimated long-term health risks and optimized countermeasures for astronauts. Additionally, research in 3D bioprinting is opening new pathways for regenerative medicine during long-duration missions. The future of space medicine depends on an interdisciplinary framework that combines medical science, technology, and mathematics. This approach will not only ensure astronaut safety during lunar and Martian exploration but also contribute to innovations in healthcare on Earth. Space medicine, therefore, represents a frontier where scientific advancement directly benefits human survival beyond our planet and improves life at home.

Keywords: Space medicine, Microgravity, Astronaut health, Telemedicine, Artificial intelligence



Indigenous Antimicrobial Agent

Khushboo Kanwar, Neetu Khandelwal

Department of Chemistry, Biyani Girls College, Jaipur, INDIA

Corresponding Email: khushbookanwar361@gmail.com

Abstract : Over the past decades, the use of Antimicrobials increased enormously. Antimicrobials like benzoates, sorbets etc. are generally used to increase shelf life of products but there are a lot of dangerous effects on human health. The synthetic antimicrobials can cause allergic reactions, trigger asthma, enhance risk of cancer and affect oral health. So, despite them we can use natural preservatives like oils, vinegar, salt and dried products. We can move on plant extracted Antimicrobials like terpenes, terpenoids, alkaloids and phenolic compounds. Also, substances like diacetyl, organic acid and hydrogen peroxide act as antifungal and are generated from microbes. We can use antimicrobial proteins like lysozyme, lactoferrin and polysaccharides for preservation. After all we have to keep in mind it is not easy to replace synthetic antimicrobials completely but by using natural antimicrobials we can make a step towards a healthy world.

Keywords: Terpenes, Terpenoids, lactoferrin, sorbets, benzoates, polysaccharides, lysozyme



Enhancing the Implementation of Cancer Care and Prevention Strategies in Aden, Yemen: Secondary data-based implementation study

Nadeen Abduljabbar, Mamta Chauhan

MPHIS Program, IIHMR University, Jaipur, India

Corresponding Email: nadeen.abduljabbar94@gmail.com

Abstract: Cancer is becoming an increasingly serious public health issue in Yemen, worsened by ongoing conflict, limited resources, weak infrastructure, and poor implementation of prevention and early detection strategies. Even with national efforts, significant gaps persist that hinder effective cancer control. This study aimed to pinpoint the barriers to implementation and suggest tailored solutions to improve cancer prevention and care in Aden, Yemen. Used a retrospective qualitative implementation research design, relying on secondary data sources analyzed four key documents, including the National Cancer Control Plan (2023–2027) and peer-reviewed studies on cancer in Yemen, through narrative document review and thematic synthesis. The Consolidated Framework for Implementation Research (CFIR) helped guide our coding and analysis of system-level barriers across three areas: Intervention Characteristics, Outer Setting, and Inner Setting. Tackling cancer

control in Yemen presents a host of intertwined challenges within the health system and society as a whole. To make real progress, we need collaboration across various sectors, building up local capacities, and crafting interventions that truly resonate with the community's needs. Key steps include enhancing cancer data systems, weaving oncology into medical education, and securing sustainable funding sources. This research provides solid, evidence-based recommendations for stakeholders to create practical, culturally relevant, and sustainable strategies for implementation.

Keywords: Cancer prevention, Yemen, implementation research, CFIR framework, secondary data, health policy.

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Physiological Adaptations of Plants to Climate Change: A Review

Priya Swami, Manisha Sharma

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding email: priyaswami771@gmail.com

Abstract : Climate change is one of the most significant environmental challenges of the 21st century, profoundly influencing the distribution, physiology, and survival of plant species. Rising global temperatures, erratic rainfall patterns, prolonged droughts, soil salinity, and elevated atmospheric carbon dioxide concentrations are reshaping ecosystems and threatening plant biodiversity. In this context, understanding the physiological adaptations of plants to climate change is critical for ensuring ecosystem stability, food security, and sustainable development. Plants exhibit remarkable plasticity in their response to environmental stress, employing a wide range of physiological mechanisms that enhance survival and reproduction under adverse conditions. Genetic adaptations represent one of the most fundamental strategies, involving alterations in DNA sequences that confer improved stress tolerance, such as resistance to drought, salinity, or extreme temperatures. These heritable traits, shaped by natural selection, enhance the reproductive success and long-term fitness of plant populations. Epigenetic modifications, on the other hand, enable rapid and reversible changes in gene expression without altering the underlying DNA sequence. This flexibility allows plants to respond quickly to fluctuating environmental pressures, making epigenetics a vital tool for short-term survival in rapidly changing climates. Phenological shifts are another crucial adaptation, where plants adjust their life cycle events such as flowering, fruiting, and seed germination in response to seasonal and climatic cues.

These shifts help synchronize plant reproductive cycles with favorable conditions, ensuring successful pollination, seed dispersal, and survival. For example, earlier flowering in response to warmer temperatures may provide an advantage in some regions, while in others it may lead to mismatches with pollinator availability, posing new ecological challenges. The ecological significance of these physiological adaptations cannot be overstated. By enabling plants to persist

under stressful conditions, they contribute to ecosystem resilience, maintain genetic diversity, and stabilize ecological interactions such as nutrient cycling, carbon sequestration, and food web dynamics. From an agricultural perspective, understanding plant adaptation strategies is essential for developing climate-resilient crops. Breeding programs that incorporate knowledge of genetic and epigenetic mechanisms can enhance crop tolerance to environmental stress, ensuring sustainable food production in a warming world. Similarly, adopting sustainable farming practices, such as agroforestry, crop diversification, and soil management, can complement natural plant adaptations and mitigate the impacts of climate change. Conservation biology also benefits significantly from insights into plant adaptations. Effective conservation strategies must prioritize preserving genetic diversity, which underpins the adaptive potential of species. Adaptive management plans that integrate ecological knowledge with socio-economic considerations are vital to safeguard both natural ecosystems and human communities. Moreover, restoration projects aimed at reviving degraded ecosystems should emphasize the selection of resilient plant species capable of thriving under future climatic scenarios.

Future research directions should focus on deepening our understanding of plant responses to multiple, interacting climate stressors. Investigating plant responses to rising temperatures, altered rainfall patterns, increased atmospheric CO₂, and combined stress factors will provide a more holistic view of plant adaptation strategies. Additionally, exploring the molecular and biochemical pathways that regulate stress responses will enhance our ability to engineer or select resilient plant varieties. Interdisciplinary research linking plant physiology, genetics, ecology, and agricultural sciences will be crucial in addressing the multifaceted challenges posed by climate change. In conclusion, plants possess a suite of physiological adaptations—genetic, epigenetic, and phenological—that enable them to cope with the dynamic challenges of climate change. These adaptations are essential not only for ensuring plant survival and reproductive success but also for maintaining ecosystem stability, food security, and biodiversity conservation. By integrating scientific research with conservation and agricultural practices, we can develop effective adaptation strategies to mitigate the adverse impacts of climate change. Strengthening these efforts will be key to ensuring a sustainable and resilient future for both natural ecosystems and human societies.

Keywords: Climate change, Plant physiology, Phenotypic plasticity, Plant resilience, Carbon dioxide enrichment



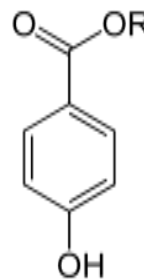
Uncovering the Harmful Effects of Parabens

Harshita Sharma, Neetu Khandelwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: hs2627410@gmail.com

Abstract : Parabens are a group of substances commonly employed as preservatives, mainly in personal care products, pharmaceuticals and food. Parabens are alkyl esters of p-hydroxybenzoic acid. Four parabens are commonly used in cosmetic products. These are methyl parabens, ethyl parabens, propyl parabens and butyl paraben. Parabens affect the human body adversely. Scientific studies suggest that parabens can disrupt hormones in the body, infertility, reproductive organs, affect birth outcomes and increase the risk of cancer. They can also cause skin irritation. Some studies show that paraben can imitate the estrogen activity in the body's cells; this estrogenic activity has been linked to some types of cancer. Both female and male endocrine functions have been affected by these substances. In animal research, male rodents had decreased testosterone and sperm production in maturity. Paraben can cause skin irritation and allergies, particularly in delicate, damaged or cracked skin. Each time you use paraben – containing hair care products, your hair and scalp absorb them. There is also evidence that paraben can cause your hair colour to fade and contribute to hair loss.



Keyword: Estrogenic activities, Endocrine function, Skin irritation, p-hydroxybenzoic acid, Methyl parabens, Ethyl parabens, Propyl parabens, Butyl paraben, Infertility.

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Antimicrobial Nanostructures Developed Via Green-Synthesis

Aditi Yadav and Kanupriya Sharma

Biyani Girls College Jaipur, India

Corresponding Email: aditiyadav.1209@gmail.com

Abstract: The rise of multidrug-resistant pathogens has intensified the search for innovative approaches to combat infections. Nanostructures synthesized through green methods provide both effectiveness and environmental sustainability. This eco-friendly synthesis relies on plants, microorganisms, and natural polymers to produce nanoparticles without the use of toxic chemicals. These natural materials serve as reducing as well as stabilizing agents during synthesis. Metals such as gold, silver, zinc oxide, and titanium dioxide have demonstrated strong antimicrobial effects by disrupting microbial cell walls, generating reactive oxygen species, binding with DNA and proteins, and releasing metal ions that interfere with metabolic processes. Their antimicrobial potential can be

further enhanced by adjusting their size, morphology, and surface chemistry, allowing them to act against a broad spectrum of bacteria, fungi, and viruses. Green-synthesized nanostructures not only provide safety and environmental compatibility but also possess additional biomedical properties, including antioxidant, anti-inflammatory, and anticancer activities. Compared with chemically synthesized nanoparticles, they are more stable and less prone to aggregation, as plant-derived agents enhance dispersion and maintain long-term functionality. These features have broadened their applications: in healthcare, they are incorporated into wound dressings, medical device coatings, and drug delivery systems; in the food industry, they are used in active packaging to prevent microbial contamination and extend shelf life; and in environmental applications, they are being explored for water purification to remove pathogens and hazardous compounds. Nonetheless, challenges remain. Large-scale production techniques are still underdeveloped, and comprehensive clinical studies are required to confirm long-term safety. Future directions should focus on optimizing synthesis parameters, utilizing agricultural or industrial residues as cost-effective precursors, and establishing reliable large-scale manufacturing methods. In summary, green-synthesized antimicrobial nanostructures represent a safe, sustainable, and promising strategy to address the global challenge of drug-resistant infections.

Keywords: Antimicrobial Nanostructures, Drug-resistant, Sustainability, Reducing agent



Algal-Mediated Green Synthesis of Nanoparticles for Heavy Metal Removal and Water Purification

**Hansika Yadav, Yashvi Vyas, Khushi Kumawat,
Aaradhya Sharma, Yashi and Smita Sisodiya**

Biyani Girls College, Jaipur, India

Corresponding E-mail: smitasisodiya2018@gmail.com

Abstract: Rapid industrialization, urbanization, and natural geochemical processes have significantly increased heavy metal contamination in global water resources. These toxic elements accumulate in aquatic ecosystems and pose serious health risks to humans, including neurological, renal, and carcinogenic effects. Conventional remediation technologies—such as electrolysis, polymer encapsulation, and leaching—are often costly, energy-intensive, and inefficient at low metal concentrations, prompting the need for sustainable alternatives. Green nanotechnology, particularly algal-mediated synthesis of metallic nanoparticles (NPs), has emerged as a promising solution. Algae such as cyanobacteria, green, red, and brown algae act as natural bio-nano factories, capable of bioaccumulating and reducing metal ions into stable, reactive nanoparticles. These biologically synthesized NPs exhibit unique physicochemical properties that enhance their effectiveness in water purification and environmental remediation. Studies have demonstrated the

successful biosynthesis of gold, silver, platinum, and copper oxide nanoparticles using various algal strains, with notable antimicrobial activity against waterborne pathogens. Additionally, algal-mediated synthesis of metal oxide NPs—including TiO₂, ZnO, MgO, and FeO has shown potential for heavy metal removal and hydrocarbon degradation. Optimization of synthesis parameters such as pH, extract concentration, and metal ion levels further improves efficacy. Algae based nanotechnology offers a scalable, eco-friendly approach to water purification. Future research should focus on enhancing synthesis efficiency, exploring novel algal strains, and integrating these systems into large-scale environmental management strategies.

Keywords: Algal Nanotechnology; Heavy Metal Remediation; Green Synthesis; Metallic Nanoparticles; Water Purification



Harnessing Algae for Sustainable Biofilter Technology

Meenal Sharma and Shilpa Bhargava

Biyani Girls College, Jaipur, INDIA

Corresponding Email: meenalsharma2112@gmail.com

Abstract: Scalable and integrated solutions can benefit the environment while saving costs, addressing climate change, air pollution, and water issues. This research explores how algae-based filters can absorb CO₂, purify air and water, and produce useful materials. Some algae, such as *Chlorella vulgaris*, *Spirulina*, and *Scenedesmus obliquus*, are far more efficient at utilizing sunlight than land plants, absorbing carbon dioxide roughly 50 times faster, generating oxygen, and removing over 80% of harmful chemicals like benzene. They also reduce nitrogen and sulfur gases and eliminate more than 90% of nitrates from polluted water. Systems range from small indoor units to large-scale photobioreactors. For example, Mexico City's BioUrban units can clean the same air volume as 368 trees. The Hamburg BIQ House utilizes algae-coated walls for energy, and Hypergiant's Eos Bioreactor captures a significant amount of CO₂. Biomass plays a crucial role in recycling and sustainability, contributing to the production of biofuels, fertilizers, and health products. Lower costs, reduced energy use, and potential carbon credits encourage adoption. These findings demonstrate that algae can help clean the environment and reduce expenses, making them a valuable resource for urban planning, industry, and policies aimed at lowering carbon emissions and enhancing environmental health.

Keywords: Photobioreactors, Algae, Biofilters, Carbon emissions, Biomass



Jeffrey–Hamel Flow of Casson Fluid under the Influence of Magnetic Field with Heat Source Effects

Manoj Kumar Nahlia

Department of Mathematics, University of Rajasthan, Jaipur, INDIA

Corresponding Email: manojkumarnahlia@gmail.com

Abstract : The work explores the Jeffrey–Hamel flow of a Casson fluid under the combined influence of magnetic field, volumetric heat source. The governing equations, derived from the Navier–Stokes, energy conservation principle and modified to incorporate the non-Newtonian behavior of the Casson fluid along with magnetohydrodynamic effects. These coupled nonlinear equations are addressed using the Differential Transformation Method, an efficient semi-analytical technique well-suited for nonlinear fluid flow, heat and mass transfer problems. A detailed parametric study is carried out to assess how variations in the Casson parameter, magnetic field strength, influence velocity and temperature fields. Results indicate that increasing the Casson parameter reduces fluid velocity in divergent channels while enhancing it in convergent channels. Meanwhile, stronger magnetic fields and internal heat generation significantly raise the temperature of the fluid. Comparisons with available numerical data confirm the accuracy of the method. These findings offer valuable insight into the behavior of non-Newtonian fluids in MHD environments, relevant to various engineering and industrial applications.

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Climate Change and Human Health: Scientific Strategies for Adaptation and Mitigation

Tashi Sharma, Saniya Khan, Priyanshi, and Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Abstract : Climate change represents a major and escalating threat to global public health in the 21st century. Rising temperatures, extreme weather events, shifting rainfall patterns, and sea-level rise directly influence human health by affecting disease transmission, food and water security, air quality, and mental well-being. Addressing these challenges requires integrating scientific adaptation and mitigation strategies into health systems and policies to protect present and future populations.

Health Consequences of Climate Change: The health impacts of climate change are wide-ranging. Heatwaves increase heatstroke, cardiovascular stress, and mortality. Floods and storms damage

health infrastructure and heighten waterborne diseases such as cholera and leptospirosis. Changing climates expand mosquito habitats, increasing malaria, dengue, and chikungunya. Poor air quality worsens respiratory illnesses including asthma and COPD. Agricultural disruptions from drought and soil erosion undermine food security, causing malnutrition and childhood stunting. Climate-related displacement and livelihood loss also fuel anxiety, depression, and post-traumatic stress, confirming climate change as a public health emergency.

Adaptation and Mitigation Approaches: Science and technology are crucial in reducing health risks. Adaptation strategies include climate-resilient hospitals powered by renewable energy, mobile health units for disaster-affected communities, and AI-based predictive models for epidemics and extreme weather. Mitigation strategies target the root causes by shifting to renewable energy, improving urban design with green infrastructure, advancing carbon capture, and restoring ecosystems such as wetlands and mangroves to protect communities from floods and storms.

Policy Priorities: Health must be central to climate policy. Priorities include strengthening health systems with climate risk assessments and disaster-ready infrastructure; developing predictive surveillance tools; promoting renewable energy in healthcare and transport; supporting climate-smart agriculture; integrating mental health care for climate-related stress; redesigning cities with sustainable mobility and green spaces; and fostering cross-sector collaboration. Education in climate-health and global advocacy for equity and funding in vulnerable regions are also critical. Climate change poses immediate and profound risks to human health. Embedding adaptation and mitigation into public health frameworks builds resilience and ensures solutions that are equitable and sustainable. A science-driven, health-centered approach that unites innovation, policy, and community action is essential for securing a healthier future.

Keywords: Climate Change, Public Health, Climate Adaptation, Mitigation Strategies, Health Policy, Environmental Health, Health Equity, Community Resilience



Antimicrobial Efficacy of Biogenic Silver Nanoparticles from *Aloe vera* Leaves

Poorva Pareek and Meenakshi Fartyal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: poorvapareek25@gmail.com

Abstract : As technology evolves, there is an increasing need for novel nanoparticles with specific chemical and physical characteristics that are also feasible, safe, non-toxic, and safe. Presently, antibacterial, antimicrobial, and photocatalytic applications of silver nanoparticles appear intriguing. Nanosilver particles have become widely employed in several fields, such as medicine, cosmetics, apparel, sunscreen, sensing, antibacterial, antimicrobial, and photocatalytic, due to their toxicity. The significance of plant extracts in AgNP production is highlighted. Silver nanoparticles (AgNPs) were produced in the current study by utilising the green synthesis technique on the inner gel extract of *Aloe vera* leaves. These produced AgNPs were evaluated for their antibacterial efficacy against two fungi, *Aspergillus niger* (*A. niger*) and *Fusarium oxysporum* (*F. oxysporum*), one gram-negative bacteria, *Escherichia coli* (*E.coli*), and one gram-positive bacteria, *Staphylococcus aureus* (*S. aureus*). The findings indicate that the synthesised nanoparticles have strong antimicrobial action, with the greatest activity against *F. oxysporum* (Zone of Inhibition/ ZOI= 28 mm at a concentration of 100µl plant extract). Additionally, studies suggest that a far more economical and environmentally responsible way to create nanoparticles is through green synthesis. This work advances our knowledge of improving health, protecting the environment, and mitigating infectious diseases by examining the function of green synthesised *Aloe vera* AgNPs in antimicrobial applications.

Keywords: *Aloe vera* silver nanoparticles, antimicrobial activity, *Escherichia coli*, *Staphylococcus aureus*, *Aspergillus niger*, *Fusarium oxysporum*

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Eco-Friendly Nanomaterials for CO₂ Capture and Application: A Review of Practical Paths toward Decarbonization

Khushi Pareek, Rishita Saini, Mukesh Saran, Anita Mishra

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding email: anitamishra1103@gmail.com

Abstract: There are innumerable environmental issues that the globe has been dealing with over the past decades. Global warming is currently one of the most pressing environmental challenges faced by researchers and governments worldwide. The average global surface temperature is expected to rise by about 1.5–2 °C over the next four to five decades. If this trend continues, life on Earth will

become increasingly difficult, with potentially catastrophic consequences. The primary driver of global warming is the emission of carbon-associated gases, particularly greenhouse gases such as CO₂. The urgent challenge posed by rising atmospheric CO₂ levels demands innovative and scalable carbon-capturing solutions. Recent advances in nanotechnology have opened promising pathways for greenhouse gas mitigation, particularly through energy-efficient CO₂ capture and storage. Nanomaterials such as nanoporous metal–organic frameworks (MOFs), and zeolitic nanotubes exhibit high surface areas, tunable pore geometries, and surface functionalization capabilities, making them highly effective in adsorbing and storing CO₂ from the atmosphere or industrial sources. Beyond capture, these nanomaterials also show potential for practical applications in CO₂ conversion into value-added products, including fuels, chemicals, and construction materials, thereby linking environmental mitigation with industrial innovation. Even with these advances, there are still major hurdles; therefore, scaling up production is difficult, the costs are high, and the long-term environmental impact is not yet clear. This review explores the development and application of eco-friendly nanomaterials for CO₂ capture and conversion, emphasizing their role in advancing global decarbonization strategies. A strategic pathway can be established toward sustainable and scalable climate solutions by integrating nanotechnology with industrial processes.

Keywords: CO₂ capture, Eco-friendly nanomaterials, Adsorption, Metal–organic frameworks (MOFs), Climate change mitigation.



Efficient Removal of Methylene Blue Dye from Wastewater using *Murraya koenigii* (Curry) Leaves as a Bio-Adsorbent

Saveena and Anita Mishra

*Department of Science, Biyani Girls College, Jaipur, Rajasthan, India
saveenababerwal@gmail.com and aninareda11@yahoo.co.in*

Background: Synthetic dyes such as Methylene blue (MB) are widely used in textiles, paper, and cosmetics, but they pose serious risks to both the environment and human health. MB is non-biodegradable and can cause skin irritation, nausea, jaundice, breathing problems, and even cancer. In water, its intense color blocks sunlight and disrupts photosynthesis, threatening aquatic life. Because of these hazards, finding eco-friendly and low-cost ways to remove MB from wastewater is very important.

Methodology: In this study, I investigated the application of *Murraya koenigii* (curry) plant leaves as a natural bio-adsorbent for the extraction of methylene blue dye from wastewater. The dried and powdered leaves were activated and tested against 10 ppm and 50 ppm MB solutions. Experiments

were carried out at different pH levels and adsorbent doses, and dye removal was measured using UV-Vis spectroscopy at 661 nm.

Results: The curry leaf adsorbent demonstrated significant effectiveness in eliminating MB, particularly under acidic conditions. At pH 4, removal reached 50% for 10 ppm and 89.4% for 50 ppm MB solution. A noticeable reduction in color was detected within 60 minutes of contact, and the efficiency of removal improved with an increased dosage of the adsorbent.

Conclusion: The findings suggest that *Murraya koenigii* leaves could serve as a simple, economical, and eco-friendly option for addressing dye-contaminated wastewater. Their easy accessibility and notable adsorption capacity highlight substantial potential for industrial applications.

Keywords: Bio-adsorbent, Methylene blue, *Murraya koenigii*, pH, Wastewater treatment, Adsorption efficiency.



Climate Change and Human Health: Scientific Strategies for Adaptation and Mitigation

Prashasti Sharma, Anchal Tiwari, Chanchal Jatav and Anisha Sharma

Department of Science, Biyani Girls College

Corresponding Email: sharmaanu7790@gmail.com

Abstract: Human-caused climate change represents an unprecedented problem of global stability, threats to ecological systems, human health and socioeconomic stability. The main driving factors are the accumulation of greenhouse gases, especially carbon dioxide, methane and nitrogen, mainly products from fossil fuel combustion, and industrial activities. Increased atmospheric concentrations of these gases accelerate global warming and creates widespread measurable effects on the Earth, the ocean and the Earth's atmosphere. Forecasts for the coming decades mean increasing the frequency and severity of climate-related hazards, including heat waves, droughts, forest fires, storms and floods. These risks represent not only physical health, but also serious risks to mental wells, livelihoods and biodiversity. Furthermore, environmental degradation and pollution further increase population and ecosystem vulnerability to stress-related stress, especially in developing regions. To solve these problems, softening and adaptation represent two main strategies. Softening focuses on reducing greenhouse gas emissions and improving carbon absorption, while adaptation aims to coordinate systems and practices to address the inevitable climate impacts. Historically, softening has attracted more attention and is supported by detailed scientific research and international financial mechanisms. However, the homeostasis of the warming trend indicates that adaptation is relatively slow, but increasingly urgent. The interaction between these feces and compromises involves a central location in the development of effective climatic responses.

Methodology: *Empirical data:* Trends in greenhouse gas emissions, climate variability, and frequency of extremes have been thought to assess the current state of climate change around the world. Environmental and public health indicators are included to assess the impact on human systems. *Systematic review of the literature:* The articles investigated were extracted from PubMed, Scopus, and Web of Science. Studies related to softening and adaptation measures have been conducted, highlighting those who have reported quantitative results in the field of environmental and health. 90 naked articles were selected covering subjects such as air quality, temperature effects, health risks, and climate policy.

Results and Considerations: First, climate speeches have historically dominated decay through technological innovation, financial mechanisms and global agreements. Despite the fact that softening has not changed the current warming trajectory on long-term climate stability, it separately highlights the introductory limitations. Second, adaptation has achieved the urgency of the effects of mountaineering already felt around the world. Measures such as stable infrastructure, improved water management and reduced risk of natural disasters are becoming increasingly important, especially in vulnerable regions. Third, more caution is required in the synergy and compromise between adaptation and softening. Synergies, like excessive infrastructure, can simultaneously reduce emissions and increase stability. Conversely, when adaptive measurements such as high energy strength cooling systems, increased emissions, and softening are measured, compromises arise. Fourth, data on health outcomes remains limited. Most studies focus on non-communicable diseases related to air pollution and temperature, but mental health, infectious diseases, nutrition, and social vulnerability are not fully expressed. Furthermore, few studies analyse the impact on vulnerable groups, such as children, elderly people, and low-income communities. Finally, in the study there is a geographical imbalance. This is most countries with high incomes. This ignores low- and average-income countries despite their disproportionate vulnerability to climate impacts.

Conclusion: The results highlight the need for a more integrated and equitable approach to climate action. Four priorities have been identified. Reinforce the relationship between understanding and adaptation and softening of general mechanisms. Creating a reliable monitoring and evaluation system. Expansion of empirical research in sectoral and regional scales. Institutional policies and strengthening executives to ensure coordinated implementation; Adding these areas will improve economic efficiency, cooperative cooperation on health and stability of climate strategies. Ultimately, solutions to damping and adaptation in a balanced way are important to protect ecosystems, protect public healthcare, and ensure socioeconomic stability in the face of accelerated climate risks.

Keywords: Climate Change, Adaptation, Synergy, Health Impact, Policy Integration

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Application of AI in Petroleum Fuel Production

Sonam Singh and Smita Sisodiya

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: smitasisodiya2018@gmail.com

Abstract: In recent years, artificial intelligence (AI) has been widely utilized more frequently to improve problems in the petroleum exploration and production industry. This survey offers a comprehensive research study on various types of algorithms for artificial intelligence, their utilization in fields within the petroleum sector, publication year, and geographical area of development. Artificial intelligence (AI) is a key component of machine learning, deep learning, and advanced analytics, and it has become a transformative tool for managing these issues. For this reason, we divide AI methods into four main categories including evolutionary algorithms, swarm intelligence, fuzzy logic, and artificial neural networks. Additionally, we analyse these types of algorithms with respect to their applications in petroleum engineering.

AI models can predict fluid flow and restore reservoirs. Demand planning: AI models study historical data, market trends, and production plan and stock management Data integration and analysis: AI models process, include seismic surveys, and geological information. The result highlights the excellent performance of AI methods in improving various selection criteria that are essential for industrial decision making including minimum mixing pressure, oil production rate. In the future, it will be possible to effectively apply hybridization and combinations of several AI techniques to address significant enhancement issues and produce superior results. The detailed explanation provided in this result gives a comprehensive reference of AI improving techniques for further studies and research in this area. AI is a game-changing technology for the petroleum fuel industry, providing progress solutions that will reshape the industry, and prevent system failure, greater environmental responsibility or a safe and clean environment. This work is a useful resource for future research and development in AI-driven petroleum engineering.

Keywords: Artificial intelligence, swarm intelligence, seismic surveys, fuzzy logic, artificial neural networks

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The Future of Healthcare: AI and Robotics in Diagnostics, Treatment and Care

Surbhi Upadhyay and Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Abstract: Artificial Intelligence (AI) and robotics are playing a major role in transforming healthcare. AI is being used to quickly analyze medical images, patient histories, and lab results, helping doctors detect diseases like cancer and heart conditions at earlier stages. Robotics is improving the accuracy of surgeries, reducing risks, and speeding up patient recovery. Robots are also helping in tasks like physical rehabilitation, elderly care, and even delivering medicines in hospitals.

Significance: These technologies are improving the quality of care, reducing human errors, and saving time for medical staff. They also support personalized treatment by studying patterns in patient data. For example, AI tools are now helping doctors choose the best cancer treatments based on a patient's genetics.

Challenges: However, there are still some challenges. Many hospitals cannot afford advanced machines. There are also concerns about data privacy, job replacement, and the need for proper training to use these tools effectively.

Conclusion: Even with these issues, the future looks promising. With the right approach, AI and robotics can make healthcare faster, safer, and more focused on the needs of each patient. This combination of human skill and smart technology is not just improving healthcare — it is redefining it.

Keywords: Artificial Intelligence, Healthcare Robotics, Smart Hospitals, Digital Health, Surgery Automation.

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Empowering Communities for Health and Sustainability: A Collaborative Approach

Deepasha, Vinita Rathi and Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email- sci.gyanwati@biyanicolleges.org

Abstract: Community-based approaches are vital for achieving sustainable development and health equity by actively engaging local populations in addressing health and environmental challenges. This study investigates the effectiveness of these approaches in fostering well-being and ecological resilience. It posits that by leveraging community knowledge, fostering partnerships, and promoting grassroots engagement, these initiatives can address the complex, interconnected issues of human health, social equity, and ecological integrity.

Methodology: This qualitative study employs a multiple case-study approach, analyzing four distinct community-based initiatives: two in urban settings and two in rural settings across India. Data were collected through semi-structured interviews with community leaders and participants, as well as a review of program documents, reports, and observational data over a 12-month period. The analysis focused on identifying key strategies, outcomes, and challenges in each initiative, using a thematic analysis framework.

Results: The case studies revealed that community-based approaches led to significant improvements in health outcomes, including increased access to sanitation and healthcare, and a notable rise in environmental awareness. These initiatives also fostered stronger social cohesion and built local adaptive capacity against environmental stressors. However, findings also highlighted consistent challenges, such as limited resource availability, political and institutional barriers, and the necessity for long-term commitment.

Conclusion: The findings demonstrate that community-based strategies are effective and provide a holistic, inclusive pathway toward sustainable development. Their success is rooted in their ability to foster culturally appropriate and locally-led solutions. Overcoming persistent challenges requires supportive policy frameworks, robust capacity building, and a commitment to long-term community empowerment.

Keywords: Community Health, Environmental Sustainability, Social Equity, Grassroots Initiatives, Sustainable Development



Nanoparticle-Mediated Cancer Therapy: A Novel Strategy for Improved Treatment

Divyanshi Shekhawat, Parul Gothwal

Department of Science, Biyani Girls College, Jaipur, India

Corresponding Email: shekhawatdivyanshi10@gmail.com

Abstract: Nanoparticle-mediated cancer therapy is a promising new approach that aims to overcome the limitations of traditional treatments like chemotherapy. The core issue with conventional methods is their lack of specificity; they often harm healthy cells while trying to destroy cancerous ones. This is a significant problem because cancer cells originate from the body's own cells, making it difficult to target them without causing collateral damage. Nanomedicine, a specialized branch of nanotechnology, uses tiny particles between 1 and 100 nanometers to create new materials and de, preventing, and treating diseases. When applied to cancer therapy, these nanoparticles act as precision delivery vehicles. They are engineered to carry a variety of therapeutic agents, such as DNA-damaging drugs or other small molecules, directly to the tumor. This allows for a multi-pronged attack on cancer cells from a single delivery platform.

Methodology: The effectiveness of this targeted delivery hinges on a unique biological phenomenon called the Enhanced Permeability and Retention (EPR) effect. As solid tumors grow, they develop a disorganized and leaky network of blood vessels. These vessels have large pores that allow nanoparticles to easily slip through and accumulate within the tumor tissue. In contrast, the blood vessels in healthy tissues are intact and tightly sealed, preventing the nanoparticles from leaking out. This natural accumulation provides a built-in mechanism for selective drug delivery. To further enhance this process, scientists can fine-tune the nanoparticles' characteristics, such as their size, surface charge, and biocompatibility, to ensure maximum efficiency and minimal harm to the rest of the body.

Conclusion: By exploiting the unique weaknesses of tumor vasculature, nanoparticle-mediated cancer therapy offers a highly efficient and targeted method for treatment. This strategy significantly reduces the systemic toxicity and harmful side effects associated with traditional chemotherapy, while simultaneously maximizing the therapeutic punch delivered directly to the tumor.

Keywords: Nanoparticle, Chemotherapy, EPR effect, Cancer

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Immunological Applications of Green Nanotechnology: A Review

Karuna Pareek and Shilpa Bhargava

Department of Science, Biyani Girls College, Jaipur, India

Corresponding Email: pareekkaruna1010@gmail.com

Abstract: The handling of materials at the nanoscale scale—one billion times smaller than a meter—is the focus of nanotechnology, a groundbreaking avenue for scientific advancement. In actuality, nanotechnology refers to any technology at the nanoscale that has a wide range of practical uses. The creation and use of chemical, physical, and biological systems at scales ranging from individual molecules or atoms to submicron dimensions, as well as the incorporation of the resultant nanomaterials into larger systems, are all literally included in nanotechnology whereas green nanotechnology is a sustainable strategy that creates environmentally friendly nano-products and processes by combining nanotechnology and green chemistry concepts. In order to create non-toxic, biodegradable, and reasonably priced products with little effect on the environment, it focuses on the environmentally friendly synthesis of nanomaterials employing biological agents such as plants, microorganisms, and waste materials. Different types of green nanoparticles are being produced which can be either differentiated on the basis of their method of production, function or chemical composition such as Biosynthesized Metallic Nanoparticles which includes AuNPs, AgNPs, CuNPs, FeNPs, and other metallic nanoparticles are created using natural reducing agents from plants or microbial sources, making them environmentally friendly and the other type is Bio-based Nanomaterials which includes nanoparticles like cellulose nanocrystals (CNCs) and chitosan nanoparticles (CSNPs) are derived from renewable biomass and offer diverse applications in various fields.

Green nanotechnology has a great significance in agriculture, environmental pollution monitoring, biomedical practices, of which emerging applications in immunological processes and pathways are also being practiced. It's possible to make nanoparticles of various materials with the possibility of controlling their size, composition, and uniformity. The usage of plant-based extracts in the photosynthesis of nanoparticles, which is known as green synthesis, can be used as a nature-friendly method and a suitable alternative to conventional methods for example physical and chemical methods. Copper nanoparticles (CuNP) have various biological properties, e.g., antimicrobial, anti-inflammatory, anticancer, and antioxidant. CuNP seems to be potent in vivo antiparasitic efficacy against some pathogenic parasite strains; however, these differences in the obtained results are due to some factors, such as the type of pathogen, the synthesis methodology of nanoparticles, and the amount used. Nitric oxide is the main metabolite released by various immune cells after being triggered by cytokines, which play a key function in the protection against several parasites, especially intracellular ones. Green nanotechnology has introduced as an aid for efficient vaccine delivery systems that can protect the encapsulated antigen from the hostile in vivo environment and also helps in maintaining a sustained release that helps to induce the immunostimulatory properties of the vaccine with the aid of different kinds nanovehicles, some of those are liposomes,

microparticles, dendrimers, and micelles, etc. Green nanomaterials are also used to enhance drug delivery systems. These systems improve therapeutic safety and efficacy by addressing limitations of conventional therapies, such as poor stability, solubility, and toxic side effects. Green nanotechnology-based devices including inorganic nanoparticles, quantum dots, polymeric nanoparticles, mesoporous silica nanoparticles, dendrimers, and solid lipid nanoparticles, are designed for precise targeting of diseases.

Keywords: Nanomaterial, Biodegradable, Anti-inflammatory, Antioxidant, Biosynthesized.

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Breast Cancer: A Modern Review of Molecular and Clinical Advances

Samiksha Sharma, Afreen Parveen and Smita Sisodiya

Department of Science, Biyani Girls College, Jaipur, Rajasthan, INDIA

Corresponding Email: smitasisodiya2018@gmail.com

Abstract: Breast cancer is now the most common cancer diagnosis in the world, with over 2.5 million new diagnoses annually. It is still the leading cause of cancer deaths in women worldwide. It is an extremely heterogeneous disease. Progress in Biotechnology has offered considerable insights into breast cancer pathogenesis, enhanced diagnostic, prognostic and therapeutic approaches. These strategies have made possible the identification of the important biomarkers like BRCA1/2, HER2 and hormone receptor status, which are now being used routinely for diagnosis. Recent Biotechnological innovations like CRISPR - Cas9 - directed genome editing, next generation sequencing are further demystifying tumor heterogeneity and increasing precision medicine. Molecular subtyping using markers like estrogen receptor (ER) and progesterone receptor (PR) has transformed personalized treatment strategies enabling more effective and specialized treatments. From 2016 to 2025, breast cancer incidence among women between the age group 50 to 64 years (postmenopausal) is expected to increase considerably. Total breast cancer incidence will increase by 23.1% in 2020 and will be 60.7% by the year 2025. This year, the WHO introduced the new global Breast cancer initiative. It seeks to enhance survival worldwide by means of Health promotion, early detection and palliative care. It highlights the critical function that biotechnology will have in shaping the way breast cancer is treated in the future and the importance of global collaboration in fighting this emerging public health problem.

Keywords: Breast cancer, Biotechnology, Biomarkers, Molecular Subtyping, Receptors.

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The Climate Conundrum: How Human Actions Fuel Reciprocal Consequences

Shristy Shreya and Parul Gothwal

Department of Science, Biyani Girls College, Jaipur

Corresponding Email: shreyashristy9122@gmail.com

Abstract: The 21st century is defined by an escalating global environmental crisis, with climate change representing its most critical and pervasive manifestation. This examines the reciprocal relationship between human activities and the escalating global environmental crisis, with a specific focus on climate change. It contends that the increasing frequency and intensity of catastrophic environmental events, such as extreme weather patterns, accelerated cryospheric degradation, and unprecedented flooding, are not random occurrences but a direct consequence of sustained and exploitative human activities. The dominant development paradigm has historically prioritized short-term economic growth over ecological integrity, operating under the flawed assumption that planetary resources are infinite. This anthropocentric approach has resulted in compromised atmospheric integrity, rising sea levels threatening coastal populations, and the systemic degradation of vital ecosystems. While governments and non-governmental organizations play a crucial role, this paper argues that a meaningful and lasting response to the crisis necessitates a fundamental paradigm shift. It posits that genuine sustainable change is contingent upon a collective and individual re-evaluation of humanity's relationship with the environment. The paper asserts that a transition from a model of exploitation to one of stewardship is imperative, recognizing that planetary health and human well-being are inextricably linked.

Keywords: Climate change, Environmental crisis, Anthropocentrism, Sustainable development, Global warming



Artificial intelligence (AI) in Women Healthcare

Gyanwati Agarwal and Manvi Twinwal

Department of Science, Biyani Girls College, Jaipur India

Corresponding Email: shrishrikrishan1972@gmail.com

Introduction: As a young science student, I have often asked myself why women's health doesn't get the same priority as other areas of medicine. In many parts of the world, especially in India, women still face late diagnoses, lack of awareness, and social barriers when it comes to healthcare. Today, Artificial Intelligence (AI) is opening new possibilities. It can help in early detection, provide better guidance, and even personalize treatments in ways that once felt impossible. This paper explores how AI technologies can make women's healthcare more accurate, accessible, and

inclusive. The focus is on areas like reproductive health, cancer screening, maternal care, and mental well-being, where timely intervention can make the biggest difference.

Methodology: For this study, I went through published research papers and WHO reports. I looked at how AI is being applied in breast and cervical cancer screening, in fertility and PCOS tracking apps, and in predictive models for pregnancy-related complications. I also considered ethical questions, such as data privacy and gender bias, which remain critical when applying technology in real life.

Result and Discussion: The review shows that AI is already making a difference. For instance, AI-supported mammography has achieved up to 94% accuracy in detecting breast cancer. Fertility apps and chatbots are helping young women understand their bodies better. Predictive models are showing potential in reducing maternal health risks. At the same time, challenges like affordability, limited awareness in rural areas, and the need for more diverse datasets must be addressed.

Conclusion: AI is not just about machines; it is about giving women a fairer chance at healthier lives. The technology is powerful, but its true success will depend on how empathetically and ethically it is used. For me, as a student and as a young woman, this topic feels deeply personal. I believe the future of women's healthcare will shine brighter if science and compassion move forward together.

Keywords: Artificial Intelligence, Women's Healthcare, Reproductive Health, Inclusivity



Climate Change and Human Health: Scientific Strategies for Adaptation and Mitigation

Shazia and Gyanwati Agarwal

Department of Science, Biyani Girls College, Jaipur, INDIA

Corresponding Email: dr40ma@gmail.com

Abstract: Climate change poses one of the most pressing challenges to human health in the 21st century, influencing disease patterns, food security, water resources, air quality, and extreme weather events. Rising global temperatures and shifting climatic conditions increase the prevalence of vector-borne diseases, exacerbate respiratory disorders, and heighten risks of malnutrition and heat-related illnesses. To address these challenges, scientific strategies focusing on both adaptation and mitigation are essential. Adaptation approaches include strengthening public health systems, improving early-warning mechanisms, promoting climate-resilient infrastructure, and ensuring equitable access to healthcare. Mitigation strategies emphasize reducing greenhouse gas emissions through renewable energy adoption, sustainable agriculture, and urban planning that minimizes environmental impact. By integrating scientific evidence into policy frameworks, fostering

interdisciplinary collaboration, and enhancing community awareness, it is possible to safeguard human health while progressing toward climate resilience. This dual approach of adaptation and mitigation not only protects populations from immediate threats but also builds long-term capacity to address the evolving health impacts of climate change.

Keywords: Climate Change, Human Health, Adaptation, Mitigation, Public Health, Sustainability.



Climate Change and Human Health

Suman Soni

Department of Mathematics, Biyani Girls College Jaipur, India

Corresponding Email: oni11022@gmail.com

Abstract: Climate change has emerged as a critical global health issue, with rising temperatures, extreme weather events, air and water pollution, food insecurity, and shifting disease patterns posing significant risks to human well-being. Scientific strategies for both adaptation and mitigation are essential to reduce health impacts and protect vulnerable populations. Key measures include developing early warning systems for heatwaves, poor air quality, and disease outbreaks; strengthening public health surveillance to monitor and model climate-sensitive diseases; and advancing vaccines for emerging vector-borne illnesses. Equally important is transitioning away from fossil fuels through clean energy research and promoting alternatives such as active transport—cycling and walking—which not only lower emissions but also improve health outcomes. Given that the transport sector alone contributes 24% of global CO₂ emissions, addressing this area is vital. This review employed a narrative and scoping design to synthesize scientific evidence on climate change and health, examining both quantitative studies (e.g., epidemiological analyses, climate projections, cost-effectiveness models) and qualitative or policy analyses. On the adaptation side, priorities include developing climate-smart crops such as drought- and heat-resistant varieties, enhancing infrastructure resilience, strengthening agricultural systems, and investing in research on climate–health interactions. The review highlights the importance of integrating both short- and long-term strategies, with emphasis on actions that simultaneously address adaptation and mitigation. Ultimately, climate change poses profound threats to global health, but coordinated, science-based action across sectors offers pathways toward a healthier and more climate-resilient future.

Keywords: Climate, Human Health, Adaptation, Mitigation, Climate-Resilient Health Systems



Recognizing Breast Cancer: An International Health Concern

Akshita, Diya Jain, Gargi Sharma, Smita Sisodiya

Biyani Girls College, India

Corresponding Email: smitasisodiya2018@gmail.com

Abstract: Breast cancer is one of the most frequently diagnosed cancers in women and the largest cause of cancer-related deaths globally. Breast cancer occurs when breast cells begin dividing uncontrollably, usually in the ducts or lobules of the breast. Risk factors for breast cancer include mutations in BRCA1 or BRCA2, an advanced age, family history of cancer, obesity, hormonal changes, and lifestyle choices like smoking or drinking excessive alcohol. Early stages breast cancer may not show obvious symptoms, making it difficult to detect. Symptoms include a lump in the breast or underarm, a change in the size or shape of the breast, nipple discharge, dimpling of the skin, and constant pain. Because it is possible for symptoms to emerge in the more advanced stage of cancers, self-examinations and the importance of screening are very important

for early detection. Diagnostic imaging tools to confirm the diagnosis such as mammogram, ultrasound, MRI, and biopsy are routinely used. Breast cancer is classified into five stages: Stage 0 (in situ, confined to its place of origin), Stages 1–2 (early-stage invasive), Stage 3 (locally advanced breast cancer), and Stage 4 (metastatic, when cancer spreads to other organs). The type and stage of the cancer will determine the treatment and it may include surgery (lumpectomy or mastectomy), hormone therapy and drug therapy, but the two most common treatments are chemotherapy and radiation therapy. Breast cancer is a major health issue, but early detection through screening and self-examination improves the outcomes. With monthly diagnosis and proper treatment, survival rates can be increased. Awareness and prevention remain the best way to reduce its impact.

Keywords: Biopsy, Chemotherapy, Mammogram, Screening and Radiation Therapy

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The Algorithmic Manager: Examining the Technological, Economic, and Social Implications of AI-Driven Performance Management and Worker Surveillance

Kismat Gothwal, Abhivyakti, Harshita, Preeti, and Gyanwati Agarwal

Department of Zoology, Biyani Girls College, Jaipur, India

Corresponding Email - Kismatgothwal001@gmail.com

Abstract: In the 21st century, artificial intelligence (AI) has emerged as a transformative technology, reshaping industries, revolutionizing healthcare, and redefining the future of work, with the worldwide impact. The enactment of artificial intelligence into the workplace has changed the

current state of workplace management, which we now define to as algorithms of governance. This study evaluates the several difficulties raised by AI in performance management and worker surveillance, including the technical, economic, and social implications of this significant development. We are to establish a study that presents research from management studies, sociology, economics, and computer science, which we will then use to examine how AI algorithms are reconfiguring what were once traditional managerial functions, as well as how they impact worker productivity and the shifting of power structures within companies. We examine the advantages and disadvantages of AI-mediated assessing performance systems using a combination of techniques that incorporates workplace data analysis, in-depth management and employee interviews, and surveys. In addition to the beneficial effects of increased efficiency and informed choices, we also observe the emergence of bias, loss of employment, and worker autonomy waste. We also examine the social and economic effects of mass surveillance, which may actually work in some people's interest and against others, as well as contribute to a decrease in relationship between employers and worker's trust. This study contributes to the developing conversation related to the nature of labor in the future, which is mainly a discussion of AI role in raising productivity and encouraging societal change. We examine the outcomes of algorithmic management in many ways. We also provide research that suggests methodologies to mitigate both beneficial and adverse effects of AI in performance management. As businesses attempt to navigate the challenges of the algorithmic age, we additionally suggest the idea of an appropriate blend of tech innovation with social responsibility.

Keywords: Artificial intelligence, Social Implications, Algorithmic management, Worker Surveillance



A Review on Efficacy of *Saraca asoca* against Polycystic Ovary Syndrome

Madhuri Yadav and Anita Mishra

Department of Biotechnology, Biyani Girls College, Jaipur, India

Corresponding email: anitamishra1103@gmail.com

Abstract : Polycystic ovary syndrome (PCOS) is a common hormonal disorder that occurs in women during their reproductive years. The ovaries produce too many male hormones (androgens), leading to hormonal imbalances. Due to which, small fluid-filled cysts containing immature eggs may develop on the outer edge of the ovaries. Women can develop PCOS any time after puberty. PCOS is very common – up to 15% of women of reproductive age suffer from PCOS. Irregular menstrual cycles, abnormal hair growth, acne, obesity, thinning hair and infertility are some of the symptoms of PCOS. The exact causes are not known, but genetics, high insulin levels and lifestyle

play a role. PCOS increases the risks of heart disease, diabetes and endometrial cancer. *Saraca asoca* belongs to Fabaceae family, commonly known as Ashoka and is used for several gynecological disorders, including polycystic ovary syndrome (PCOS). *Saraca asoca*, is an ancient medicinal herb that shows therapeutic effects against infertility and hormonal imbalances in women. *Saraca asoca* has several medicinal properties such as anti-cancer, antibacterial, anti-diabetic, estrogenic. Ashoka Rishta, one of the Ayurvedic formulations used to treat PCOS, contains the bark as the main ingredient. This help balance hormone levels and regulate menstrual cycles. Ashoka Rishta reduces common symptoms associated with PCOS such as heavy menstrual bleeding, pelvic pain, and cramps. The herbs present in Ashoka Rishta have anti-inflammatory properties that relax the uterus and may reduce pain. Two of the aromatase inhibitor compounds, procyanidin B2 and luteolin, were obtained from the study of flavonoids derived from the *S. asoca* plant. Computer simulations and experiments on zebrafish have shown that both these compounds can effectively inhibit the aromatase enzyme. This suggests that these compounds could potentially be used to treat infertility in PCOS patients with estrogen dominance.

Keywords: Polycystic Ovary Syndrome, Hormonal Imbalance, *Saraca asoca*, *Ashoka rishta*, Aromatase Enzyme



Harnessing Narrow AI in Healthcare: Opportunities, Challenges, and the Road Ahead

Bhavika Singathia and Kanupriya Sharma

Biyani Girls College, Jaipur

Corresponding Email: singathiab@gmail.com

Abstract: Artificial Intelligence (AI) has surfaced as a transformative force in healthcare, with the eventuality to ameliorate diagnostics, treatment planning, resource operation, and patient issues. Still, much of the current progress and real-world deployment in healthcare is being driven not by general or mortal-suchlike AI, but by narrow AI — task-specific systems that are trained to perform well-defined functions with high delicacy. This paper examines the geography of narrow AI in healthcare, pressing its practical operations, benefits, limitations, and ethical counteraccusations. Narrow AI systems are erected to break specific problems, similar as assaying radiological images, prognosticating patient deterioration, optimizing sanitarium workflows, or supporting decision-making in electronic health records (EHRs). These systems do n't retain the broad logic or rigidity of general AI, but their focused design makes them largely effective in disciplines where large, high-quality datasets are available. For illustration, AI models trained on thousands of mammograms can describe bone cancer with performance similar to radiologists, and algorithms that dissect EHRs can identify cases at threat for sepsis or sanitarium readmission before than

traditional styles. Despite these successes, the deployment of narrow AI in clinical practice is n't without challenges. One major limitation is contextual understanding — narrow AI lacks the capability to generalize knowledge or reason outside of its training sphere. This makes it vulnerable to crimes when faced with strange data, edge cases, or distribution shifts. Also, numerous AI models are trained on datasets that are n't representative of the broader population, raising enterprises about bias, fairness, and healthcare equity. For example, an algorithm trained generally on data from one demographic group may underperform for others, potentially leading to differences in care. Another critical issue is explainability.

Clinicians are frequently reluctant to trust "black box" models whose internal decision-making processes are opaque. This lack of translucency can hamper clinical relinquishment, especially in high-stakes surroundings where interpretability is essential. Regulatory bodies are decreasingly emphasizing the need for AI tools to be both accurate and interpretable to ensure patient safety and ethical use. Despite these challenges, the integration of narrow AI into healthcare systems is accelerating. Hospitals and health tech companies are laboriously investing in AI-powered tools for individual support, workflow robotization, and substantiated treatment recommendations. Still, to completely realize the benefits of narrow AI, a multidisciplinary approach is essential. Collaboration between data scientists, clinicians, ethicists, and policymakers is demanded to ensure that AI tools are designed responsibly, validated strictly, and enforced courteously. With applicable safeguards, confirmation, and stakeholder involvement, narrow AI can contribute meaningfully to more effective, indifferent, and case-centered care. The future of AI in healthcare may not depend on general intelligence, but on the careful design and deployment of narrow systems that break real-world problems.

Keywords: Artificial Intelligence in Healthcare, Healthcare Equity, Medical Diagnostics, Workflow Automation, Patient Safety

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Green Nanotechnology

Sonam Kanwar and Monika Saini

Department of Science, Biyani Girls College Jaipur, Rajasthan

Email: shekhawatb784@gmail.com

Introduction: Green nanotechnology is a sustainable approach to nanoscience that focuses on the design, production, and application of nanomaterials using environmentally responsible methods. Traditional nanomaterial synthesis often requires toxic chemicals, elevated temperatures, and high energy input, leading to harmful byproducts. These conventional techniques pose risks not only to the environment but also to human health. Green nanotechnology, on the other hand, applies the principles of green chemistry and green engineering to minimize waste, reduce hazards, and

enhance the efficiency of nanoparticle production. By utilizing natural reducing and stabilizing agents such as plant phytochemicals, microbial enzymes, and biodegradable polymers, researchers can obtain nanoparticles with controlled size, shape, and enhanced functional properties while remaining environmentally benign.

Methodology: The biosynthesis of metallic and metal oxide nanoparticles forms the foundation of green nanotechnology. Plant-mediated synthesis is one of the most studied methods, where extracts of medicinal plants such as neem, aloe vera, Tulsi, and tea leaves act as reducing and stabilizing agents. These extracts are rich in bioactive compounds like flavonoids, phenols, terpenoids, and alkaloids, which facilitate the reduction of metal ions into nanoparticles. Microbial synthesis, another green approach, employs bacteria, fungi, and yeast for nanoparticle formation through enzymatic reduction processes. For example, *Fusarium oxysporum* and *Bacillus subtilis* are widely reported for the production of silver and gold nanoparticles. Green routes are further supported by advanced characterization techniques such as X-ray diffraction (XRD) for crystallinity, scanning and transmission electron microscopy (SEM and TEM) for morphology, dynamic light scattering (DLS) for size distribution, and Fourier-transform infrared spectroscopy (FTIR) for functional group analysis. These tools confirm the purity, stability, and efficiency of the green-synthesized nanoparticles.

Result and Discussion: Green synthesis has demonstrated significant potential in producing nanoparticles with superior biological and chemical properties. Silver nanoparticles (AgNPs) derived from neem and aloe vera extracts have shown potent antibacterial and antifungal activity, effective even against multidrug-resistant strains. Gold nanoparticles (AuNPs) produced by fungal methods exhibit excellent biocompatibility, making them ideal for applications in cancer imaging, biosensing, and targeted drug delivery. Zinc oxide (ZnO) nanoparticles synthesized through green methods display remarkable photocatalytic activity, enabling efficient degradation of industrial dyes and pollutants, thus contributing to wastewater treatment. Titanium dioxide (TiO₂) nanoparticles synthesized using plant extracts show promise in renewable energy storage and photocatalysis. Compared to chemically synthesized nanoparticles, green nanomaterials demonstrate reduced cytotoxicity, enhanced stability, and lower production costs. Additionally, their scalability and compatibility with renewable resources make them viable for industrial applications. However, challenges remain, including batch-to-batch variability, limited mechanistic understanding of biological reduction pathways, and the need for large-scale standardization. Despite these hurdles, the advantages of green nanotechnology clearly outweigh its limitations.

Conclusion: Green nanotechnology represents a fusion of sustainability and innovation in the field of nanoscience. By replacing hazardous reagents with natural and renewable sources, it offers a pathway toward environmentally responsible nanoparticle synthesis. Its applications span medicine, agriculture, water purification, energy storage, and environmental remediation, making it a cornerstone for sustainable development. With continuous research and development, supported by government policies and industry collaboration, green nanotechnology has the potential to revolutionize material science. In the future, it could provide affordable solutions to global

challenges such as antimicrobial resistance, clean energy, and safe water supply. Ultimately, green nanotechnology will play a pivotal role in achieving the United Nations' Sustainable Development Goals (SDGs) by linking advanced technology with ecological responsibility.

Keywords: Green Nanotechnology, Silver Nanoparticles, Gold Nanoparticles, Zinc Oxide, Titanium Dioxide



The Role of Plant Nutrient Uptake in Fertility

Deepali Sharma and Kanchan Sharma

Department of Botany, Biyani Girls College, Jaipur, India

Corresponding Email: deepalisharma6367@gmail.com

Abstract: Plant nutrient uptake is a fundamental process that governs growth, development, and productivity, directly influencing soil fertility and sustainable crop production. The plant nutrient uptake plays a vital role in fertility of soil. Plants, through their roots absorb mineral ions from the soil, which are essential for growth, development, and reproduction. Nutrients are absorbed by plant roots primarily in ionic form from the soil solution through passive diffusion, mass flow, and active transport mechanisms. The efficiency of nutrient uptake depends on root morphology, microbial associations, soil physiochemical properties, and environmental conditions. Macronutrients such as nitrogen, phosphorus, and potassium play central roles in structural and metabolic functions, while micronutrients are essential for enzymatic activity and signaling pathways. Imbalances in nutrients availability can reduce crop yield and soil fertility, while excessive application of fertilizers can cause environmental degradation. Understanding the dynamics of nutrient uptake, root – soil interactions, and nutrient – use efficiency is thus critical for optimizing fertilization strategies and improving agricultural sustainability. Advances in plant physiology, soil science, and biotechnology offer new opportunities to enhance nutrient uptake and maintain soil fertility for long – term food security.

Keywords: Plant nutrient uptake, Soil fertility, Micronutrients, Fertilization strategies, Sustainable agriculture, Crop productivity



A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Bone Marrow Transplantation Among Nursing Students in Selected Colleges at Jaipur, Rajasthan

Tarawati Chaudhary

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Background: Hematological disorders are caused by impairments in bone marrow. If unhealthy bone marrow is replaced with healthy bone marrow and there are no rejection reactions then the survival rate of patient can be increased. Many nursing students may be not aware about this therapeutic measure. The study aimed to find out the effectiveness of Structured Teaching Programme on knowledge regarding the bone marrow transplantation. This study aims to assess the knowledge about bone marrow transplantation

Methodology: Pre experimental one group pretest and posttest research design was selected. The samples comprised of 30 nursing students selected by Non probability purposive sampling technique Demographic and knowledge questionnaire was used before and after administering structured teaching programme of knowledge regarding bone marrow transplantation. Data analysis was done by using Chi-Square and paired “t” test.

Results: Overall pre-test and post-test mean score was 12.95 and 19.05 respectively. The ‘t’ value was 6.82, shows that there is a significant increase in the knowledge after the administration of structured teaching programme. The χ^2 values show that there is significant association between the pre-test level of knowledge and their socio demographic variables such as age and previous knowledge.

Conclusion: Nursing students had a remarkable increase in the knowledge regarding the bone marrow transplantation when compared to their previous knowledge. The structured teaching programme is an effective strategy in improving knowledge.

Key words: Structured teaching programme; Knowledge; Bone marrow transplantation, Nursing students; colleges.

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Knowledge Regarding Menopause among Women Aged between 40-50 Years in Selected Areas of Jaipur, Rajasthan

Latha P.S.

Department of Nursing, Biyani Institute of Science & management, Jaipur-302039, India

Corresponding Email: lathankutty@gmail.com

Background: The present study was aimed to assess the regarding menopause among women in selected wards of Jaipur, Rajasthan. The main objectives of the study were to assess the knowledge of women regarding menopause, to find out the association between level of knowledge score of women with selected socio demographic variables.

Methodology: The study was carried in selected areas of Jaipur, Rajasthan. The research approach adopted for this study was the quantitative approach and research design used was non experimental descriptive survey design. The sample consists 50 women within the age group of 40- 50years. The pilot study was conducted in ward1 of Jaipur, Rajasthan. A structured questionnaire was used to collect the data. Only knowledge was assessed no interventions are given.

Result: The result of the study revealed that 64% of women in the study population were having below average knowledge and 36 % having above average knowledge. It was also found that a significant association is present between knowledge regarding menopause with demographic variables such as age, previous knowledge, Education and Occupation.

Conclusion: The study revealed below average knowledge regarding menopause among women. Hence more strategical methods should be planned and adopted to increase the awareness regarding menopause.

Keywords: Knowledge, Menopause, Women, Selected Areas

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A Study to Assess the Occupational Stress among Housekeeping Staff Working at Selected Private College in Jaipur, Rajasthan

Jishu George

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

jishugeorge@gmail.com

Background: Stress is a condition of physical or emotional response. Persons may suffer from stress as a result of many factors and workplace is one of them. The response due to stress is not specific. It is caused by alteration in an internal or external environment. Occupational or job-related stress is a kind of psychological stress characterized by harmful physical and emotional response. It appears when the job requirements do not match the needs, resources and potentials of the workers. Stressful working conditions also may interfere with an employee's ability to work safely, contributing to work injuries and illnesses. Occupational stress is a chronic disease caused by many conditions at work place that may hamper an individual's performance negatively and may affect his body and mind also.

Methodology: Quantitative research approach was used and the selected research design was descriptive survey. Non probability convenient sampling method was used to select 30 housekeeping staff from selected college. Data was collected by using Demographic tool and structured rating scale to assess occupational stress.

Result: -Descriptive and inferential statistics were used for data analysis, result of the study revealed that on an average, 80 % of the housekeeping staff were having frequent stress and 20% of the staff were suffering from neutral stress or occasional stress.

Conclusion: It is evident that housekeeping staff usually suffers from occupational stress and the level of stress is influenced by various socio demographic variables. Hence the investigator emphasizes and concludes that stress management classes should be conducted for housekeeping staff.

Keywords: Assess, Occupational Stress, Housekeeping staff, Private college.

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A Descriptive Study to Assess the Knowledge Regarding Kegel Exercise for the Prevention of Urinary Incontinence among Postnatal Mothers in Selected Areas of Jaipur, Rajasthan

Vidhi Sharma

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
Vidhisharma02@gmail.com*

Background: Kegel exercise is one of the most effective ways of controlling urinary incontinence naturally. It has many benefits for women with no negative side effects. The value of improving urinary incontinence with Kegel exercise is now widely accepted. The advantage of kegel exercises is to improve muscle tone by strengthening the pubococcygeus muscles of the pelvic floor.

Methodology: The present study focused to describe the knowledge of postnatal mothers regarding kegel exercise for prevention of urinary incontinence. 40 postnatal mothers were selected for the study. Purposive sampling technique was used to select the sample. The tool consists of demographic data and structured knowledge questionnaire on kegel exercise was administered to collect the data from the postnatal mothers. The data was collected and analyzed by using descriptive and inferential statistics.

Results: The result revealed that 25(62.5%) mothers had average knowledge and 15 (37.5%) mothers had good knowledge with an average mean and SD was 16.30 ± 0.929 . The result revealed that demographic variables such educational status of mothers was found significant association with level of knowledge among postnatal mothers in selected areas regarding Kegel exercise for prevention of urinary incontinence.

Conclusion: The findings of the study shows that majority of postnatal mothers had average knowledge regarding kegel exercise for prevention of urinary incontinence. An understanding of the rapid changes in mothers is very important, so to ensure the developmental status of mother early learning and practice should be promoted to avoid complications.

Key Words: Knowledge, Kegel Exercise, Postnatal Mothers, Urinary Incontinence

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A Descriptive Study to Assess the Knowledge Regarding Mental Illness among Adults in Selected Area, at Jaipur, Rajasthan

Laxmi Pharaswal

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Laxmipharaswal@gmail.com

Background: All human being has mental health needs. Mental illness a condition that disturbed a person thinking, mood, ability to relate to other and daily functioning. Mental health problems may be adjustment difficulties in relationship ending, on the death of someone close, conflict in relations with family or friends, feeling stressed, the psychological or social challenges most, hence there is a need to assess the knowledge regarding mental illness in a selected among adults

Methodology: A non-experimental research design was adopted. Non-probability purposive sampling method was used to select 50 adults. The data collection tool was structured knowledge questionnaire, based on demographic data,

Results: The study revealed that 72% adults had good knowledge, 15 % adults showed and 13% had poor knowledge regarding mental illness.

Conclusion: There is a rise of mental illness among adults. Awareness programmes should be carried out to prevent the worsening of the mental health. Preventive measures should be adopted by institutions to minimize the mental illness cases in the society

Keywords: Knowledge, Mental Illness, Adults



A Study to Assess the Effectiveness of Information Booklet on Knowledge Regarding Varicose Vein and Its Prevention among Working Women in Selected Areas of Jaipur, Rajasthan

Remya Renjan

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
nursing.remya@biyanicolleges.org*

Background: Varicose vein is one of the common vascular abnormalities in the world. many study reports that 25% of the population in India is suffering from varicose veins Patients with varicose veins are at great risk for developing deep vein thrombosis which leads to many complications. The high-risk people are those who are having prolong standing such as sales man, teachers, nurses, traffic police. Awareness about the varicose vein and its preventive measures is important. Hence the researcher had taken a chance to assess the knowledge of varicose vein and its preventive measures among working women before and after the administration of an information booklet.

Methodology: The quantitative research approach and pre-experimental one group pretest posttest research design was selected. 30 working women were selected by using non probability convenient sampling technique. Informed consent was obtained from samples. Demographic data and knowledge were collected with the help of a structured knowledge questionnaire. The pretest knowledge was assessed on the first day and information booklet was given on the same day and posttest knowledge was assessed by using the same tool on the 7th day.

Results: The total mean post-test knowledge score (12.5) was higher than the mean pretest score (8.7).

Conclusion: There was a significant improvement in the knowledge level of working women after the administering information booklet. Hence information booklet is an effective strategy to improve the knowledge.

Keywords: Effectiveness, Knowledge, vein, Working women, Information Booklet.



A Descriptive Study to Assess the Knowledge Regarding Water Birth among B.Sc. Nursing Students in Selected College at Jaipur

Vijay Choudhary

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Choudharyvijay054@gmail.com

Background: Pregnancy is the journey from conception to the birth of a new baby in the world. Water birth is unique technique of childbirth in which labor and delivery take place in warm water. This advantageous method is safe and for both the mother and the new-born child. Nursing students should have knowledge regarding this technique.

Methodology: The quantitative research approach was used and the research design was pre-experimental. The study was conducted in a Nursing College at Jaipur, Rajasthan. Non probability convenient sampling was used to select 50 student nurses. Data were collected using structured knowledge questionnaire. To analyze the data Descriptive statistics was used.

Results: The results revealed that student nurses 65% had the poor knowledge, 30% had average knowledge, 5% had very poor understanding, and none had excellent knowledge regarding water birth

Conclusion: Natural labor and Water birth provides women an empowering alternative to conventional childbirth, it has significant benefits in pain relief, reduced interventions, and maternal satisfaction. Nurses play a crucial role in supporting these practices these birthing methods can become more globally accessible, providing women more choices in their journey of childbirth.

Key words: Knowledge, Water Birth, Nursing Students.

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A Study to Assess the Effectiveness of Awareness Programme on Knowledge Regarding Organ Donation after Death among Students of Selected Colleges at Jaipur, Rajasthan

Kishan Lal Chaudhary

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
Kishannitharwalalwar@gmail.com*

Background: Organ donation is a best gift for happy life One donor can gift life to eight needy people. Organ preservation has made the transplantation of vital organs possible. The aim of the study was to evaluate the effectiveness of awareness programme on knowledge regarding organ donation after death among students

Methodology: Quantitative research approach and the pre-experimental one group pre-test post-test research design was selected in this study. 30 sample were included in the study on probability convenient sampling technique was used. Awareness programme was given to the students and a structured knowledge questionnaire was used to collect the data.

Result: The result showed that 90% students were in the age group 18-20 years, all of the of students were female, 75 % students were not attended any organ donation programme and 25 % students had previous information about organ donation through Seminars. The post-test knowledge means score (18.78) higher than the mean pre-test knowledge score (8.36). The awareness programme was effective in increasing the knowledge of students regarding organ donation after death.

Conclusion: The findings of the study revealed the awareness programme are helpful in improving knowledge regarding organ donation

Keywords: Effectiveness, awareness Programme, Organ Donation, Students



A Study to Assess the Knowledge Regarding Polycystic Ovarian Syndrome Among Girl Students Studying in Selected College at Jaipur, Rajasthan with a View to Develop an Informational Pamphlet

Rashmi Sharma

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, Rajasthan, India
rs976069@gmail.com*

Background: Polycystic ovarian syndrome is a hormonal disorder characterized by multiple cysts and menstrual irregularities. It may lead to infertility among woman so there is an urge to spread the awareness regarding PCOS and its preventive measures.

Methods: A non- experimental Descriptive study was selected. Non probability convenient sampling technique was utilized to draw 30 samples. To assess the knowledge of girl students regarding polycystic ovarian syndrome. Afterwards information pamphlet was provided.

Results: The results showed that majority of girls 18 (60%) had moderate knowledge and 12 (40%) of girls had excellent level of knowledge. The mean score was 8.0 with standard deviation of 2.7.

Conclusion: The findings revealed lack of knowledge regarding PCOS among girl students. The administration of information pamphlet may help the girl students to understand more about PCOS.

Keywords: Assess, Knowledge, Polycystic Ovarian Syndrome, Girl Students



A Study to Assess Knowledge Regarding Diabetic Foot Ulcers among Adults Working in Selected Areas of Jaipur, Rajasthan

Rakesh

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
rakk19@gmail.com*

Background: Diabetes Mellitus is a chronic metabolic disease which affects many organs in human. If not treated within time, complications may arise and Diabetic Foot Ulcers are one of them. Many persons suffering from diabetes mellitus are not aware about these complications. This study aimed to assess the knowledge of Diabetic Foot Ulcers.

Methods: A Descriptive study was conducted. A questionnaire focusing on diabetic foot ulcers, its etiology, prevention and management was developed to assess the knowledge of 20 adults from

selected areas of Jaipur. Adults' knowledge was assessed based on the percentage of correct answers to each question: more than 50% (Adequate); and 50% or less (Inadequate).

Results and Discussion: The major findings revealed that maximum adults were males (90%).95 % of them were married and 35 % were suffering from Diabetes Mellitus ,47 % of adults were having family history of diabetes mellitus.87 % adults were having no previous knowledge about diabetic foot ulcers. The majority of adults showed inadequate knowledge, with 89.65%, while only 10.35 % answered all questions showed adequate knowledge.

Conclusion: This study focuses on lack of knowledge regarding Diabetic Foot Ulcers among adults. These findings emphasize the critical need for structured and continuous awareness programmes regarding complications of Diabetes mellitus.

Keywords: Assess, Knowledge, Diabetic foot ulcer, adults



Knowledge of Alzheimer's Disease among Adults of selected Urban Areas in Rajasthan

Rumana Ali

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
rumanaali38@gmail.com*

Background : The cases of dementia are rising in Society .There is no certain identified etiology and treatment for dementia but its bad impacts are very clear on individual ,families and society .Alzheimer's disease is also related with dementia but people are unaware about this rising health problem .Thus There is a need to improve public awareness and understanding about Alzheimer's disease .The present study examined the knowledge of Alzheimer's disease among middle and old age adults .

Methodology: A Descriptive survey was conducted on 40 middle-aged and older adults selected by purposive sampling method. The questions were asked to collect demographic and measure knowledge about Alzheimer's disease. Descriptive statistics was used to summarize the sample and knowledge of adults regarding Alzheimer's disease.

Result: The study revealed that the average age of participants was 57 years, all of them were married and 75 % were Graduate. None of the participant had previous knowledge regarding Alzheimer's disease even they lacked knowledge about treatment and cure of Alzheimer's disease. Participants showed inadequate knowledge with mean of 6.2.

Conclusion: The study showed a knowledge gap regarding Alzheimer's disease. There is an urgent need of educational outreach in Communities to prepare them about potential outcomes of Alzheimer's disease.

Keywords: knowledge, Alzheimer's disease, dementia, Adults.



Knowledge towards Blood Donation among College Students in Selected Areas in Jaipur District

Priya

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
priyachauhan0399@gmail.com*

Introduction: Blood transfusion is a core service in health care system. Every year millions of lives are saved by blood donation but the process Blood donation is affected by many factors, such as lack of knowledge, negative attitude etc. This study focused on assessing level of knowledge regarding blood donation among students

Methodology: A quantitative research approach was used. The descriptive research was conducted on 60 students. The research design used was one group pre-test and post-test design. The demographic variables analyzed for the study were age, gender, residence, education and previous source of knowledge. The study was conducted by using non-probability convenient sampling technique. A structured knowledge questionnaire was prepared to collect the data regarding blood donation in terms of knowledge.

Result: 25 % (15) subjects had poor knowledge, 66.66% (40) had average knowledge, and 8.33% (5) had good knowledge. The mean score was 12.7

Conclusion: The study revealed that knowledge enhancement regarding blood donation among college students would improve the ratio of blood donation in the society. The study concluded that administration of educational programme is important.

Key Words: Knowledge, Blood Donation, College students.



A Study to Assess Stress and its Contributing factors among Graduate Nursing Students in selected College at Jaipur

Sheela

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
ruchikaranwa1508@gmail.com*

Background: Stress is a psychological and physiologic imbalance resulting from adverse circumstances. During college life students may face stress & depression due to novel environment, new friends, heavy syllabus and various issues

Methodology: A quantitative approach with descriptive design was used to evaluate the level of stress among graduate nursing students and identify its contributing factors in selected colleges in selected college at Jaipur. Convenience sampling technique was utilized to select eligible graduate nursing students. The tools for data collection; one for assessing socio-demographic variables and another for contributing factors to find out the stress of graduate nursing students.

Result: The study included 50 post graduate nursing students. The majority (59%) of the participants belonged to the age group of 20-30 years, and all respondents (100%) were females. About 70% of the participants came from nuclear families. Majority of participants (80%) resided in hostel. Various factors influencing stress among graduate nursing students included academic factors such as assignment writing and workload (25% reported severe stress), non-availability of outing (20% reported severe stress), syllabus-related stress (15% reported moderate to severe stress), and stress related to attendance and compensation (15% and 10% reported stress, respectively). 12% of participants were stressed due to clinicals, other stress factors related to clinics included night duty (28%), management of clinical and theory simultaneously (27%) and stress related to completion of work in time (26%). 31% reported stress due to lack of adequate rest, while anxiety (26%), lack of sleep (21%), improper food timings (19%), and frequent health problems (22%) also contributed to stress. Communication skills-related stress was reported by 60% of participants, particularly academic communication and speaking in English. Family-related issues were most stressful for 48% of participants, while financial problems were a major stressor for 57%. Psychological factors such as lack of time for recreation (31%), loneliness (29%), worrying about the future (25%) was also reported.

Conclusion: There is a rise in stress cases among college students. Awareness programmes and frequent counseling sessions may be helpful in prevention and management of stress among students.

Keywords: Stress, graduate Nursing Students, Contributing Factors.

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A Study to Assess the Post-Menopausal Symptoms, Stress and Coping Strategies among Women in selected areas of Jaipur

Meecal

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Meecal.nobel16@gmail.com

Background: Menopause is a natural change in a woman's body that marks the end of her menstrual cycle and fertility. After menopause, some women experience symptoms that can affect their daily life. These symptoms can be affected by factors like age, lifestyle, and how a woman handles stress. This study looked at the symptoms women face after menopause, their stress levels, and how they deal with these challenges.

Methods: The study used a survey method and interviewed 40 women who had stopped having periods for at least two years. These women were between 45 and 55 years old. They were chosen using a specific method called purposive sampling. To find out about their menopause symptoms, the study used a tool called the Menopausal Rating Scale. Stress levels and how they cope were measured using the Menopausal Stress Scale and a Likert Rating Scale.

Results: The average age of the women in the study was 49.8 years, ranging from 45 to 55.

About 80% of the women reported moderate menopause symptoms, 76.5% felt mild stress, and 92.4% used some kind of coping strategy to combat with symptoms. The most common symptoms were hot flashes (68.5%), heart issues (48%), trouble sleeping (44%), and bone pain (49.8%). About 42% of the women practiced yoga, 93.8% walked regularly, and 55% had some knowledge about menopause. There was a strong link between the symptoms women experienced, their stress levels, and the coping strategies they used.

Conclusion: Most middle-aged women go through some kind of menopause symptom, and because of these symptoms and other life stressors, they feel stressed. Using coping strategies can help women manage these challenges and live healthier lives.

Keywords: Postmenopausal symptoms, stress, coping strategies and women



A Descriptive Study to Assess the Knowledge Regarding Carpal Tunnel Syndrome among the Computer Users in Selected Workplaces of Jaipur District, Rajasthan

Urvashi

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
urvashigaurav20@gmail.com*

Background: Carpal Tunnel syndrome is the condition caused by compression of median nerve and characterized by numbness, tingling sensation and pain. There are many risk factors associated with carpal tunnel syndrome and use of computer is one of them. It is also considered as an occupational disorder. The objectives of the study aimed to assess the knowledge of carpal tunnel syndrome, regarding carpal tunnel syndrome.

Methodology: The research approach used for the study was quantitative research and the design used was descriptive survey design. 20 computer users were selected by using purposive sampling technique. The data was obtained using Demographic proforma and Semi structured questionnaire to assess the knowledge. The demographic variables were age, gender, professional qualification, area of work, hours of work, years of experience, type of computer use at work and home, hand dominance, input devices and current health problems related to computer users. The obtained data was analyzed using both descriptive statistics.

Result: The findings of the present study revealed that, most of the samples 39.7% were between the age group of 35-40 years. Majority 85.6% of them were males, 74.2% had their professional qualification as M. Com. 54.2% had work experience of between 5-10 years. The input device used by 92.4% users were keyboard and mouse. 28.5% users had reported symptoms of CTS. Out of 25% computer users had reported symptoms like hand or wrist pain, 20% reported numbness in hand 5% reported tingling sensation in hand. In spite of facing the symptoms the majority (88%) of users had inadequate knowledge regarding carpal tunnel syndrome and 12 % had moderate level of knowledge regarding carpal tunnel syndrome.

Conclusion: Carpal tunnel syndrome is commonly observed computer workers. The result of study focuses on spreading further awareness regarding risk factors, symptoms, treatment and prevention of carpal tunnel syndrome among certain occupational workers.

Keywords: Assess, Knowledge, Carpal Tunnel Syndrome, Computer users

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A Study to Assess Effectiveness of Educational Intervention on Knowledge Regarding Oral Cancer among Undergraduate Students Studying in Selected Colleges at Jaipur, Rajasthan

Divya Bhardwaj

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
bhardwajdivya9100@gmail.com*

Background: The oral cancers are rising among worldwide. It comprises approximately 40 % of all the cancers in India. According to a report approximately 60,000 cases are reported annually in India. Early detection helps in recognizing abnormal changes in oral cavity. The aim of the study was to assess level of Knowledge regarding oral cancer before and after administration of educational intervention among undergraduate Students studying in selected college Jaipur Rajasthan.

Methodology: In this evaluatory study quantitative research approach was utilized. The research design selected was pre-experimental one group pre-test post-test. The researcher selected 30 undergraduate students by using non probability convenient sampling. Demographic and a structured knowledge questionnaire were used to collect data regarding knowledge on oral cancer. An educational intervention was used to enhance the knowledge regarding oral cancer. The collected data was analyzed by using descriptive and inferential statistics.

Result: The pre-test mean score was $\bar{x} = 6.53$ and $SD = 2.52$ and post-test mean score was $\bar{x} = 11.6$, $SD = 2.41$). The mean difference indicated an improvement in knowledge level regarding oral cancer post-intervention. The computed t-value was 3.908 at a 0.05 level of significance level. It revealed that the educational intervention was statistically significant.

Conclusion: There is an urge to create an awareness regarding oral cancer and its early detection strategies like self-oral examination. Awareness programmes in educational institutes will surely help in reducing mortality rate due to oral cancer as persons will learn about risk factors, early detection, screening tools, prevention and treatment of oral cancer through these programmes.

Key words: Assess, Effectiveness, Educational Intervention, Oral Cancer, Undergraduate students.

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A Descriptive Study to Assess the Knowledge Regarding Peptic Ulcers among the Nursing Students in Selected College of Jaipur

Ritu Agarwal

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
riya123btp@gmail.com*

Background: Gastritis is a common gastrointestinal problem which affects individuals worldwide. Common risk factors are stress, lifestyle, stress, dietary habits, and exposure with microorganisms like infections like *Helicobacter pylori*. Nursing students are more stressed due to academic pressures and it is also observed that they follow irregular dietary habits which make them susceptible to develop gastritis. This study aimed to assess the knowledge of nursing students about gastritis

Methodology: A descriptive study was carried out in selected College of Nursing, Jaipur, Rajasthan. Non probability convenient sampling technique was conducted to select 60 nursing students. Data collection tool consists of a demographic and structured knowledge questionnaire. Items were prepared to measure knowledge regarding risk factors, etiology, classification, symptoms, pathophysiology, treatment and complications of gastritis. Statistical analysis was performed using descriptive and inferential statistics.

Results: The results revealed that the majority of participants were aged 18– 22 years (95.4%), all were female (100%), and urban residents (53.7%). The overall knowledge score was moderate (mean = 4.23), Final-year students demonstrated higher knowledge levels. A significant association ($p \leq 0.05$) was found between knowledge levels and demographic factors like academic year and residency.

Conclusion: The study concludes that even the nursing students gain basic knowledge about gastritis through their curriculum, still critical gaps in practice of preventive measure is evident. It is recommended to enhance conduction of workshop, campaigns fostering healthy lifestyle practices.

Keywords: Assess, Knowledge, Peptic Ulcer, Nursing Students



A descriptive Study Assess the Knowledge of Nursing Students towards Spiritual Care in a selected college of Nursing Jaipur

Ajay Kumar

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Background: Spirituality based nursing care is a core aspect in providing holistic nursing care. While caring the patients, the nurses must focus on specific spiritual and religious dimensions. Student nurses must have adequate knowledge and skills to offer spiritually- based care in a correct way. Furthermore, spiritual care is a significant component in the context of nursing care as nurses have to care for patients to the spiritual dimension to cope and heal. The aim of this study was to assess the knowledge regarding spiritual care among nursing students of selected college, Jaipur, Rajasthan

Methods: A Descriptive study was conducted among 55B.Sc. Nursing students of selected College Jaipur. Convenience sampling technique was selected for the study. Demographic questionnaire and Spirituality assessment scale were used to collect the data. The data analysis was done using descriptive and inferential statistics

Results: The study revealed that there was a moderate knowledge (55%) regarding spiritual nursing care.

Conclusion: Spirituality is an important concept for the holistic & quality nursing care. The study found that nursing students were very able to identify the need for spiritual care. Nursing education must focus more on this dimension.

Key words: Assess, Knowledge, Nursing Students, Spritual care.



Effectiveness of Video Assisted Teaching Program (VATP) on Knowledge Enhancement Regarding Antenatal Examination Among General Nursing and Midwifery Students of Selected Nursing School, Jaipur, Rajasthan

Yogesh Singh Chouhan

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Background: Pregnancy is one of the most cherished periods in a woman's life. The outcome of pregnancy will be fruitful if prenatal evaluations are carried out in a regular and an appropriate manner. Antenatal examination includes frequent examinations. The potential health issues of pregnancy can be prevented if identified earlier with the help of antenatal examination. The study focused to assess the level of Knowledge regarding Antenatal examination before and after administering video assisted teaching Programme on antenatal examination among general nursing and midwifery students of selected Nursing School, Jaipur Rajasthan.

Methodology: The quantitative research approach was used for this evaluatory nature research study Pre -Experimental research design was utilized. 30 subjects were selected through non probability purposive sampling technique. Pre-testing was conducted on the first day by administering a structured knowledge questionnaire, and then the video assisted teaching program (VATP) was administered on the same day. A post-test was conducted after seven days.

Result: The study revealed that 76 % of the subjects were in the age group of 19-22 years. 100 % were females, 67 % participants were Hindu and 68 % were from nuclear family. 25.4% participants had previous knowledge regarding antenatal examinations. In pretest 76.7% had inadequate knowledge, 13.3% had adequate knowledge. In post-test, 88.2% of students showed adequate knowledge and 11.8 % showed inadequate knowledge. The obtained 't' value was 18.66 which was significant at $p < 0.001$ (3.97). Hence Video assisted teaching programme is found effective.

Conclusion: The video assisted teaching programme is an effective teaching strategy in enhancing knowledge level of nursing students.

Keywords: Effectiveness, Video Assisted teaching program, knowledge, antenatal examination, general nursing & midwifery students

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Assessment of Knowledge on Side Effects Among Cancer Patients Receiving Radiotherapy in Selected Hospital of Jaipur, Rajasthan with a View to Develop an Informational Booklet

Priyanka Singh

Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India

Background: The global burden of cancer is rising. According to a report in 2022, there were an estimated 20 million new cancer cases and 9.7 million deaths. The leading cancers are lung cancer; breast and colorectal cancer. The therapeutic management of cancer consist of radiotherapy. Though Radiotherapy is found significant in treating head and neck cancer but adverse effects of radiotherapy is another aspect with need focus as many patients may not be aware about the identification and management of side effects of radiotherapy. This study aimed to assess the knowledge of patients regarding side effects of radiotherapy.

Methodology: The researcher used quantitative research approach and non-experimental descriptive research design in this study. Non probability convenient sampling was used to select 20 cancer patients receiving radiotherapy Demographic and structured knowledge questionnaire was used to assess their knowledge regarding side effects of radiotherapy.

Results: The mean knowledge score was 5.83%. Only 9.66% of patients had average knowledge, while 90.34% patients had poor knowledge. None of the patient showed good knowledge about regarding side effects of radiotherapy. Based on these findings, the researchers developed a booklet on regarding side effects of radiotherapy.

Conclusion: This study emphasized the knowledge and early identification of side effects of radio therapy, which is essential for quality life of a patient. The patient or family member may use information booklet later to review the side effects of radiotherapy.

Keywords: Assessment, Knowledge, Side effects of radiotherapy, patients, Information Booklet

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The Integration of AI and Robotics in Healthcare

Neha Meena

*Department of Nursing, Biyani Institute of Science & Management, Jaipur-302039, India
nehameena1412@gmail.com*

Background: The integration of Artificial Intelligence (AI) and robotics is changing healthcare by altering how diseases are diagnosed, treated, and managed. These technologies are moving from research to everyday clinical practice. They are improving efficiency, accuracy, and patient outcomes.

Methods: AI systems use machine learning, deep learning, and predictive analytics to analyze large amounts of medical data. This includes imaging, genetics, and electronic health records. Robotics improves surgical precision, enables minimally invasive procedures, supports rehabilitation, and automates routine care.

Results & Discussion: AI has greatly enhanced diagnostic accuracy. It enables the early detection of diseases such as cancer, cardiovascular issues, and diabetes. Robotic-assisted surgeries have reduced blood loss, complications, and recovery times. Wearable devices and virtual assistants offer real-time monitoring and alerts, while hospital automation has improved workflows and resource management. However, challenges persist. Concerns about data privacy and algorithmic bias present ethical risks. To fully benefit from AI and robotics, strong regulatory frameworks, ethical guidelines, and inclusive design are crucial. A collaborative model where healthcare professionals are empowered, rather than replaced, by technology offers a safer, more efficient, and patient-centered healthcare system.

Conclusion: AI and robotics are at the leading edge of a healthcare revolution. They drive advancements that were once thought impossible. By merging data-driven intelligence with robotic precision, these technologies are transforming diagnostics. They enable early and accurate disease detection and redefine surgical and rehabilitative care. They improve clinical outcomes, elevate patient experiences, and optimize hospital operations. Yet, we will only realize the full potential of AI and robotics if we address key challenges. Ethical issues around decision-making, data privacy, and questions of accessibility and affordability need careful management. The future of healthcare lies in a collaborative model where human expertise works alongside technological innovation. In this setup, doctors, nurses, and healthcare workers are supported by AI-driven insights and robotic tools instead of being replaced by them. This partnership promises to create a healthcare system that is safer, smarter, more efficient, and ultimately more focused on patients.

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Assess the Knowledge regarding community base Health Education

Anshu

Biyani Institute of Science & Management, Jaipur-302039, Rajasthan, India
anshusherawat2005@gmail.com

Background: Community health is one of the most essential aspects of nursing education and practice. Many health problems in India such as malnutrition, communicable diseases, maternal and child health issues, poor sanitation, and lack of awareness continue to affect large sections of the population. Hospitals and health professionals alone cannot solve these problems because they require active involvement of the people themselves. To address this, the concept of the Community Based Health Approach was developed. It emphasizes community participation in identifying health needs, finding local solutions, and promoting preventive care. For nursing students, understanding this approach is very important as it equips them with the skills to work effectively in community health settings. The Primary objective of this study is to assess the knowledge of nursing students regarding the community-based health approach.

Methodology: A quantitative research approach with a descriptive research design was used for the study. Nursing students were selected as participants using a convenient sampling technique. Data was collected by using a structured knowledge questionnaire. The questionnaire included questions related to the meaning, principles, components, advantages, and applications of the community-based health approach. The collected data was then systematically analyzed and interpreted to assess the knowledge level of nursing students and to identify the areas where they required further training and guidance.

Results: The results of the study revealed that most nursing students had only an average level of knowledge about the community-based health approach. While some students demonstrated good awareness, many lacked understandings of its principles and practical application in real community settings. The findings highlight the importance of structured teaching programs and the need for incorporating such modules into nursing education.

Conclusion: The study concludes that the community-based health approach is an effective method to promote health, prevent diseases, and empower people through active participation. Nursing students need proper training and guidance to understand and apply this approach in practice. Providing structured modules and awareness programs can significantly improve their knowledge and prepare them to deliver better community health services.

Keywords: Assess, Knowledge Community Based Health Education, Nursing Students



Development and Validation of Nanoparticle-Biofertilizer Conjugate for Enhancing Nutrient Use Efficiency in Crops

Mahzveen Jahan and Nalinee

Department of Microbiology, Starex University, Haryana, India.

Corresponding Email: mehjabeenjahan1993@gmail.com

Abstract: The increasing global population and the escalating demand for food production have placed immense pressure on conventional agricultural systems, necessitating innovative approaches to enhance productivity while ensuring sustainability. Conventional fertilizers, though effective in boosting crop yields, contribute to nutrient loss, soil degradation, and environmental pollution, highlighting the urgent need for alternative solutions. This study explores the development and validation of a nanoparticle-biofertilizer conjugate as a potential strategy for enhancing nutrient use efficiency (NUE) in crops, particularly wheat (*Triticum aestivum*). The research integrates nanotechnology and biotechnology to develop a synergistic fertilizer system that combines the targeted nutrient delivery properties of nanoparticles with the biological benefits of biofertilizers. The conjugate is designed to improve nutrient uptake, minimize losses due to leaching and volatilization, and enhance soil microbial activity, thereby fostering sustainable agriculture. The study employs a multidisciplinary approach, including the synthesis and characterization of nanoparticles, biofertilizer culture development, formulation of nanoparticle-biofertilizer conjugates, and their application in controlled and field environments.

The findings indicate that the nanoparticle-biofertilizer conjugate significantly enhances nutrient absorption, improves soil fertility, and boosts crop productivity, thereby reducing dependency on chemical fertilizers. Furthermore, it minimizes environmental risks associated with conventional fertilization methods, such as water contamination and greenhouse gas emissions. The study underscores the potential of nano-biofertilizers as a sustainable agricultural innovation, aligning with global efforts to achieve food security and environmental conservation. This research contributes to the advancement of precision agriculture and offers a scalable model for sustainable farming, addressing both economic and ecological challenges. The integration of nanoparticle-biofertilizer technology presents a promising avenue for achieving long-term agricultural sustainability, bridging the gap between productivity and environmental responsibility.

Keywords: Fertilizers, Soil Degradation, Environmental Pollution, Water Contamination, Nanoparticle

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Novel Syntenic Derivatives Targeting Multidrug Resistant Bacteria: A Study on Pleuromutilin Analogues

Nalinee and Shweta Chauhan

Starex University Gurgaon, Haryana

Abstract: The alarming rise of multidrug-resistant (MDR) bacterial strains presents a critical challenge to global healthcare systems. Pleuromutilins, a class of antibiotics that inhibit bacterial protein synthesis by binding to the peptidyl transferase centre of the 50S ribosomal subunit, have shown promising activity against Gram-positive pathogens, including resistant strains. This study focuses on the design, synthesis, and biological evaluation of novel pleuromutilin analogues aimed at enhancing antibacterial efficacy and overcoming resistance mechanisms. A series of structurally modified derivatives were synthesized and tested against clinically significant MDR bacteria, including *Staphylococcus aureus* (MRSA), *Enterococcus faecium* (VRE), and *Streptococcus pneumoniae*. The results revealed that several analogues exhibited potent in vitro activity with improved pharmacokinetic properties and lower cytotoxicity.

Keywords: Pleuromutilins, multidrug resistance, synthetic infections

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Novel One-Pot Synthesized Polyaniline-co-Pyrazine: Antimicrobial behaviour, DFT, and Molecular Docking

Chetna Kumari and Nirmala Kumari Jangid

Department of Chemistry, Banasthali Vidyapith, Banasthali-304022, Rajasthan, India

Corresponding Email: nirmalajangid.111@gmail.com

Abstract: The present investigation employs the chemical oxidative polymerization approach to synthesize co-doped polyaniline (PANI) and polyaniline-co-pyrazine (PANI-co-Pyr) in a single pot. The UV-Visible, FTIR, TGA, viscosity, and conductivity measurement techniques were used to identify structural, thermal, and electrical properties. The conductivity of fabricated PANI and PANI-co-Pyr was depicted in the range of semiconductors due to less band gap. The stability and reactivity of PANI and PANI-co-Pyr are supported by DFT calculations, providing essential insights into their structural and energetic characteristics. Further, the antibacterial property of the PANI-co-Pyr was tested against *S. aureus*, *E. coli*, *B. subtilis*, and *P. aeruginosa*, and the antifungal activity against *A. niger* and *P. chrysogenum* was measured in terms of IC 50, and minimum inhibitory concentration (MIC). Molecular docking investigates the bonding interactions of the Pyr ring with the surrounding residues of the 1IX1 and 1UKC. As a result, PANI-co-Pyr has a higher binding

affinity towards bacterial and fungal strains and exhibits significant antibacterial and antifungal activity.

Background: One of the significant intrinsically conducting polymers with potential uses in organic electric and optoelectronic devices is polyaniline (PANI), which has garnered a lot of interest due to its excellent thermal and environmental stabilities, tunable electrical conductivity, and ease of preparation. Antibacterial activity and high solubility in organic solvents would therefore combine to produce a superior coating with outstanding utility.

Methodology: PANI and PANI-co-Pyr copolymers co-doped with dual acids were synthesized using the chemical oxidative polymerization method in a single pot.

Result and Discussion: The structure changes in synthesized PANI and PANI-co-Pyr were validated by UV-visible and FTIR spectroscopy. TGA analysis was used to investigate the thermal stability of synthesized PANI and PANI-co-Pyr at temperatures ranging from 33 to 1000 °C. Viscosity average molar mass was studied by viscosity measurement and found to be higher for PANI-co-Pyr (1:2) with 9.48×10^4 g/mol than for pure PANI (7.66×10^4 g/mol). Conductivity measurement was studied by the two-probe method, and it was found that PANI-co-Pyr (1:2) has a higher conductivity with 5.387×10^{-3} S/cm than pure PANI (4.2016×10^{-3} S/cm). According to DFT, the stability of PANI and PANI-co-Pyr was supported by the positive values of ΔE and the negative eigenvalues of HOMO and LUMO. The band gap of PANI and PANI-co-Pyr was obtained experimentally (3.36 ± 2.10 eV) by conductance measurement and theoretically (2.11 ± 1.85 eV), as proven by DFT. The MIC and IC 50 of PANI were found to be 0.5 and 221.56 ± 7.11 µg/mL, and the MIC and IC 50 of PANI-co-Pyr (1:1) were found to be 0.25 and 120.56 ± 9.01 µg/mL against *E. coli*, showing significant activity against *E. coli*. The MIC and IC 50 of PANI were found as 0.5 and 332.33 ± 6.64 µg/mL, and the MIC and IC 50 of PANI-co-Pyr (1:2) were found as 0.25 and 200.70 ± 9.05 µg/mL, showing significant activity against *A. niger*.

Conclusion: The results suggested that synthesized co-doped PANI-co-Pyr exhibits more antifungal and antibacterial activity than pure PANI. According to molecular docking, the PANI-co-Pyr copolymer had a greater affinity for binding (-9.36 Kcal mol⁻¹) to a protein and showed superior antibacterial and antifungal activity compared to PANI (-7.08 Kcal mol⁻¹). This investigation concludes by presenting a one-pot synthesis of the PANI-co-Pyr, highlighting its antifungal and antibacterial properties.

Keywords: Polyaniline, polyaniline-co-pyrazine, conductivity measurement, antibacterial activity

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DAY-2: (14 September, 2025)

Invited Lecture-1

Human Life is the First Priority



Prof. Takashi Kei SAITO

Affiliation & Contact:

Professor, Department of Intelligent Mechatronics, Faculty of Systems Science and Technology,
Akita Prefectural University, 84-4 Aza-ebinokuchi, Tsuchiya, Yuri-honjo, Akita, 015-0055 Japan
Phone +81-184-27-2113; Fax +81-184-27-2188
Email: saito@akita-pu.ac.jp

Research Interest: Cell-Based Device Therapy, Neural Interface, Bio-Robotics

Education & Professional Career:

1994-1999	Ph.D. The University of Tokyo (Engineering)
1996-1997	Trainee in BEBIG Isotopentechnik GmbH, Berlin, Germany
1999-2002	Research Associate in the University of Tokyo
2002-2004	Research Fellow in National Cardiovascular Center Research institute
2004-2005	Bio Business Consultant in Toyama New Industry Organization
2005-2008	Specially Appointed Associate Professor in Osaka University
2008-2010	Research Fellow in The University of Tokyo
2010-2022	Asso Prof in Akita Prefectural University
2022-Present	Prof in Akita Prefectural University

Major Publications:

- Light dose and time dependency of photodynamic cell membrane damage, T.K.Saito et al., 68(5), 1998, 745-748
- A Multi-purpose Eight-legged Robot Developed for an Evaluation of a Neural Interface, T.K. Saito et al., Springer Tracts in Advanced Robotics, 24, 2006, 385-394

- Cell membrane perforation with photosensitizer and a brushshaped soft-polymer sheet using a malignant glioma cell line, T. Tachibana et al., *Anticancer Research*, 35(11), 2015, 6069-6074
- 300-N Class Convex-Based Telescopic Manipulator and Trial for 3-DOF Parallel Mechanism Robot, T.K. Saito et al., *J. Robotics and Mechatronics*, 33,2021,141-150

Abstract

Human Life is the First Priority

Takashi K. Saito

*Department of Intelligent Mechatronics,
Faculty of Systems Science and Technology, Akita Prefectural University*

Abstract: Threats to human life come in many forms, including deadly diseases, wild animals, and natural disasters. In Akita Prefecture, since my childhood, there have been victims of bears and snowfall almost every year, and I always wondered if something couldn't be done about it. My research is originally focused on developing robotic prosthetics controllable by neural signals. This required expertise in both neural cells and robotics. After much trial and error, in 1995 I discovered a phenomenon: while piercing a cell with an object usually kills it, creating holes in the cell via oxidation makes it much more resistant to death. The initial goal was to utilize this phenomenon to insert electrode arrays for information input/output into numerous nerve cells.



Fig.1 With Guardian Goat

However, it became clear that using cells as drug delivery systems was a more significant application. Since 2003, this has been developed into a large-scale cell modification technology. By 2025, a prototype continuous cell modification device was completed, for ultra-low-cost cell therapy. Meanwhile, for evaluating neural electrodes, I developed a legged robot around 2000 that could mimic the movements of experimental animals. This evolved from a toy-like, human-ridable legged machine, and from the outset, it was also intended to intimidate bears. Furthermore, in 2005, anticipating intimidating applications, I developed an extendable robotic arm using Convex Tape. This arm was also envisioned for roof snow removal, and a prototype system named “Setsu-ichi” was completed in 2024. In 2017, I created “GuardianGoat” a mobile scarecrow robot. This built to resemble a bear in stature, aims to be perceived by animals. In 2023, I encountered a bear with my students even in a town. I was shocked and I must enhance the capabilities of each individual, such as hunters confronting bears. Therefore, inspired by a transformable motorcycle from 1980s anime,

I developed the “Ride Baori” in 2025. It transforms from a motorcycle into protective gear. What a jumble of research projects! Yet, when we consider “prioritizing human life,” we simply couldn't help but create them.

Keywords: Cell Therapy, Mobile Robot, Snow, Motorcycle.



Invited Lecture-2

Forgetting Makes Language Models Smarter



Prof. Keiji Miura

Affiliation & Contact:

Kwansei Gakuin University, 1 Gakuen Uegahara, Sanda, Hyogo 669-1330, Japan

Email: miura@kwansei.ac.jp

Research Interest: Computational Neuroscience, Deep Learning, Applied Mathematics

Education & Professional Career:

2001-2006	M.S. and Ph.D. Kyoto University (Science)
2006-2009	JSPS Research Fellow in University of Tokyo
2009-2011	PRESTO Researcher in Harvard University
2011-2015	Asst. Prof in Tohoku University
2015-2021	Asso. Prof in Kwansei Gakuin University
2021-Present	Prof in Kwansei Gakuin University

Major Publications:

- M Konishi, KM Igarashi, K Miura, “Biologically plausible local synaptic learning rules robustly implement deep supervised learning”, *Front Neurosci*,17:1160899,2023.
- R Yoshida, M Takamori, H Matsumoto, K Miura, “Tropical support vector machines: Evaluations and extension to function spaces”, *Neural Networks*, 157, 77-89, 2023.
- K Miura, T Aoki, “Hodge-Kodaira decomposition of evolving neural networks”, *Neural Networks*, 62, 20-24, 2015.
- AY Wang, K Miura, N Uchida, “The dorsomedial striatum encodes net expected return, critical for energizing performance vigor”, *Nature Neuroscience*, 16(5), 639-647, 2013.
- K Miura, ZF Mainen, N Uchida, “Odor Representations in Olfactory Cortex: Distributed Rate Coding and Decorrelated Population Activity”, *Neuron*, 74(6) 1087-1098, 2012.
- K Miura, M Okada, S Amari, “Unbiased Estimator of Shape Parameter for Spiking Irregularities under Changing Environments”, *Advances in Neural Information Processing Systems*, 18, 891-898, 2005.

Abstract

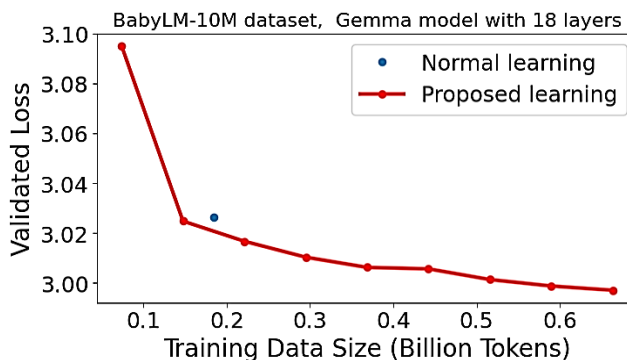
Forgetting Makes Language Models Smarter

Rui Yamamoto and Keiji Miura

Department of Biosciences, Kwansei Gakuin University

Abstract: ChatGPT, a generative AI released in November 2022, brought about such innovation that it forced us to reconsider what tasks only humans can perform, symbolizing the rapid development of artificial intelligence technology in recent years. ChatGPT uses a mathematical model called a "neural network," which mimics the neural mechanisms of the human brain. Therefore, understanding how ChatGPT achieves its high performance may help us understand how the brain generates language. In fact, large language models suffer from considerable computational costs in training and a more biologically plausible curriculum learning that reduces the learning cost is desired.

In this study, in order to clarify what matters in language learning, we propose a biologically plausible curriculum learning algorithm in which a model forgets a part of state variables for optimization after every sleep and all the hyperparameters are set toward forgetting memory. We compared the normal and the proposed learning algorithms when we trained Gemma models from scratch with the BabyLM-10M dataset. We found that the proposed algorithm performed better than the normal algorithm in the next word prediction task. The result suggests that forgetting is rather beneficial in language learning.



Keywords: Deep Learning, Large Language Models, Curriculum Learning, BabyLM, Gemma.



Invited Lecture-3

The Future of Work: Technological, Economic, and Social Implications



Kapil Khurana

Affiliation & Contact:

Founder & Director

Technoviz Automation Solutions Pvt. Ltd., Gurgaon, India

Phone: +91-9999765380

Email: kkhurana@technovizautomation.com

Research Interest:

Industrial Automation, Industry 4.0, IIoT, AI/ML in Manufacturing, Digital Transformation, Industrial Cybersecurity, AR/VR for Industry

Education & Professional Career:

2003–2023: Worked with global MNCs in industrial automation (Rockwell, , Schneider, Omron) in various leadership and technical roles

2023–Present: Founder & Director, Technoviz Automation Pvt. Ltd., leading Industry 4.0 and IIoT solutions, global expansion initiatives

Major Publications:

Author of the book 'Digital Revolution – Industry 4.0 & IIoT' (available worldwide)
Multiple thought-leadership articles and invited talks on AI in Manufacturing, IIoT, and Digital Transformation.

Developed industrial software products for OEE monitoring, energy management, quality inspection, predictive analytics, and AR/VR training in manufacturing

Abstract

**The Future of Work: Technological, Economic,
and Social Implications**

Kapil Khurana

Abstract: Artificial Intelligence (AI) is rapidly transforming the manufacturing sector, redefining how industries operate and how people work. This presentation will explore the technological, economic, and social implications of AI in the context of global convergence, where technology, business, and law intersect to shape the future of work.

Key areas to be discussed include the integration of AI-driven intelligent automation, predictive maintenance, digital quality ecosystems, and advanced analytics in industrial environments. These innovations are not only improving efficiency, productivity, and cost-effectiveness but also enabling new business models and global competitiveness.

Equally important are the social dimensions—how workforce roles are evolving, the growing need for digital skills, and the ethical and legal frameworks required for responsible AI adoption. The session will also address how AI impacts collaboration between industries and academia, creating opportunities for skill development, research partnerships, and inclusive growth. The talk emphasizes that the future of work will not be solely defined by technology, but by how effectively stakeholders—industry, academia, and policymakers—collaborate to harness AI for sustainable progress. By building strong partnerships, we can ensure that AI in manufacturing contributes to economic resilience, global innovation, and social well-being in a connected world.

□□□

Invited Lecture-4

Digital Governance in the Age of Cyber Warfare and Geopolitical Tensions



Dr. Ravi Shankar Sharma

Affiliation & Contact:

Associate Professor, Department of Computer Science & Engineering, JECRC University, Plot No. S-2036 to IS-2039, Ramchandrapura Industrial Area, Vidhani, Sitapura Extension, Jaipur – 303905, Rajasthan, India.

Phone +91-9887719192; Fax +91-141-2751601; Email: ravishankar.sharma@jecrcu.edu.in

Research Interest: Network Security and Database Management System

Education & Professional Career:

2023	Ph.D. Suresh GyanVihar University, Jaipur (CSE)
2014	M.Tech., Rajasthan Technical University, Kota (CSE)
2025 till now	Associate Professor, JECRC University
2026-2025	Assistant Professor, JECRC University
2005-2016	Assistant Professor, Suresh GyanVihar University

Major Publications:

- Applications and Use Cases of Millimeter Wave Communications in 5G in “International Journal of Intelligent Systems and Applications in Engineering” (ISSN: 2147- 6799) vol. 12, no. 17s, pp. 489-496, Feb. 2024. (Scopus Index).
- Strengthening AI Governance through Advanced Cryptographic Techniques in “International Journal of Intelligent Systems and Applications in Engineering (ISSN: 2147-6799) vol. 12, no. 17s, pp. 553-560, Feb. 2024. (Scopus Index).
- Analysis of routing and security issues in OLSR protocol for video streaming over MANET’ in Journal of Discrete Mathematical Sciences and Cryptography 25(4), pp. 1203–1211. doi: 10.1080/09720529.2022.2072439. (SCI-E & Scopus) (<https://doi.org/10.47974/JDMSC-1905>) (Scopus Index)

- Deep learning-based highway vehicles detection and counting system using computer vision in “Journal of Information and Optimization Sciences (ISSN: 2169- 0103)” Volume 44 Issue no 5, October 2023, Page 997-1008. (<https://doi.org/10.47974/JIOS-1462>) (WoS Index)
- Kidney stone classification using deep learning neural network’ in “Journal of Discrete Mathematical Sciences and Cryptography (ISSN: 2169-0065)” Volume 26 Issue no 5, September 2023, Page1393-1401.(<https://doi.org/10.47974/JDMSC-1762>)(ScopusIndex)
- Self-healing topology for DDoS attack identification & discovery protocolin software-defined networks’ in “Journal of Discrete Mathematical Sciences and Cryptography(ISSN: 2169-0065) Volume 24 Issue no 8, Dec 2021, Page 2221-2232” (<https://doi.org/10.1080/09720529.2021.2009192>)ScopusIndex

Abstract

Digital Governance in the Age of Cyber Warfare and Geopolitical Tensions

Ravi Shankar Sharma

In an era where geopolitical tensions increasingly spill into the digital realm, cyber warfare has emerged as a critical dimension of global security. Nation-states and state-sponsored actors now leverage cyber-attacks as strategic tools, targeting critical infrastructure, financial systems, and democratic processes. This evolving threat landscape challenges traditional notions of sovereignty, international law, and governance.

This keynote will explore the complex interplay between cybersecurity, digital governance, and geopolitics. It will address how cyber conflicts disrupt global trade, diplomacy, and economic stability, and why existing governance frameworks are insufficient to prevent escalation. The session will highlight key opportunities for building robust international norms, cooperative defense mechanisms, and multi-stakeholder governance models that can balance national interests with global digital resilience.

As the digital battlefield expands, nations and organizations must rethink their strategies—not only to defend against cyber aggression but to foster trust, accountability, and peace in a hyperconnected world. The presentation will offer actionable insights for policymakers, industry leaders, and technologists to navigate this challenging yet critical frontier.

Keywords: Digital governance, Cybersecurity, Cyber warfare, Cyber norms, Geopolitical Tensions, Trade and trust



Invited Lecture-5

Pre-Entrepreneurship: What to Master before you Launch Your Brand



Shan Moondra

Affiliation & Contact:

Office- Misskurti, 328, Kalyanpura, RIICO Kaata Choraha, Jaipur. (302020)
Phone - +91-9461306281; Email: shan@misskurti.com

Research Interest:

Entrepreneurship, Clothing Industry in India

Education & Professional Career:

2021- MPS, Jawahar Nagar, Jaipur (1-12th)
2022- Diploma in Leadership and Management (Shaw Academy, EU)
2024- Rajasthan University, Jaipur (BBA)
2019- Founded- Misskurti
2024- Founded- Nayodra Pvt. Ltd.

Major Publications:

- Forbes DGEMS 200
- Top 25 under 25 India, ET
- Top 100 Future Leaders, GlantorX
- 500 Challenger Brands, YourStory

Abstract

Pre-Entrepreneurship: What to Master before you Launch Your Brand

Shan Moondra

Misskurti | Nayodra Pvt. Ltd.

Entrepreneurship is often celebrated as the big leap—launching startups, scaling brands, and raising capital. Yet, what truly defines success often happens before that leap. I call this stage Pre-Entrepreneurship—a critical foundation where aspiring founders prepare themselves with the right mindset, skills, and networks.

In this talk, I will share insights drawn from my journey of founding Misskurti, one of India's fastest-growing ethnic fashion brands, and leading Nayodra Pvt. Ltd. as Managing Director. My success was not built overnight, but on the preparation, I invested in during my pre-entrepreneurship phase.

We will explore the essentials of this stage:

- **Mindset & Discipline:** Why consistency, resilience, and time management matter.
- **Skill Development:** Financial literacy, marketing basics, communication, and digital fluency.
- **Networking & Mentorship:** The importance of building meaningful connections early on.
- **Practical Exposure:** How internships, side projects, and experiments build confidence.
- **Business Fundamentals:** A simple lens into management, finance, and branding beyond textbooks.

This session is designed to go beyond motivation—it is about giving students a roadmap to use their college years effectively, so they can step into entrepreneurship prepared, not hesitant.

Entrepreneurship does not begin with a business idea—it begins with preparing yourself to execute one. That is the essence of Pre-Entrepreneurship.



Invited Lecture-6

DIDD – Design Innovation & Disruption in Design



Sunil Tyagi

Affiliation & Contact:

K 316/12, Lower Basement, Kainchiwali Gali, Lado Sarai, New Delhi 110030

Phone +919650770268 ; Fax +91-011 41091300

Email: sunil.tyagi@noundesign.com, designnoun@gmail.com

Research Interest:

Design Strategy, Product Design, Immersive Architecture, Interactive Technologies, AR-VR & Experiential Design. Ecology&Environment-Building Biodiversity Parks, Museum on Nature, Climate Change, Water Conservation, UN SDG's Expert & Promotor Disruption in Design Education, Skill Based education based of Vedic-Gurukul

Education & Professional Career:

2001-2006	B. Arch. - Govt College of Architecture, Lucknow
2006-2009	Product Design – National Institute of Design, Ahmedabad
2008-2009	Grottini Tech Solutions, Portoricanati -Italy
2012 onwards	Noun Design Innovation Pvt Ltd, New Delhi
2023	Founder – Ordinary Awesome – Eco Balance Shoes

Major Publications:

PROFESSIONAL CONNECT – MOU, Advisory Board, Jury Member

- Board of Member in Easy Build Advisory Board – an Ai enabled, Meta verse ready New Age Construction Platform
- Board of Member in BOS at Uttar Pradesh Institute of Design – UPID, Noida

- Design Consultant @ various govt organization and corporates like PMO-India, Haryana Govt, Namami Gange, UP Forest Dept., Whirlpool, Havells, Panasonic, Bakingo& more.
- Expert evaluator for MSME Incubation Scheme with Host Institute NID – Haryana for evaluating & assisting applicants.
- Mentors for various start up – UPID Design Hackathon, Floweraura, Bakingo, Ojo Life, Hurry's Foods, TLMC, Adhana Agri Robotics etc
- MOU WITH UTTAR PRADESH INSTITUTE OF DESIGN (UPID) – NOIDA, As Educator, Jury Member, Design Mentor for Startup, Board of Member for BOS
- Medhavi Skills University, Sikkim - Board of Member, Working as an advisor for development of Design Orientated Skill Based curriculum and Sustainable Hill Architecture for University Campus
- Jury Member & Visiting Faculty: UPID - Noida, NID Kurushetra, LPU-Phagwada, SPA Delhi (Industrial Design), ILM, Sharda University.
- Lovely Professional University, Jalandhar, Jury Chair person, Visiting Faculty
- Evaluator and Jury Member at the India Design Week (IDW) 2025 Grand Finale ICT ACADEMY| An Initiative of Government of India, State Government and Industry

Abstract

DIDD – Design Innovation & Disruption in Design

Sunil Tyagi

Founder & Design Director, Noun Design Innovation Pvt Ltd, New Delhi Ordinary Awesome -Eco Balance Shoes

The transformative power of design as a strategic tool for **disruption** and **innovation**. In today's fast-changing world, design is no longer just about aesthetics—it's a way of thinking that challenges assumptions, reframes problems, and unlocks new possibilities. When integrated with technology, research, management, it becomes a catalyst for scalable product line, human-centered solutions and fulfilling the market gap.

- **Disruption through Design Thinking:** Design thinking enables us to observe, question, and redefine challenges. It encourages empathy, experimentation, and iteration—key drivers of disruptive change. Participants will explore how this mindset can shift industries and create value beyond the obvious.

- **Innovation as a New Solution to a Problem:** True innovation emerges when creative ideas address real-world problems in novel ways. It emphasizes how to generate and execute solutions that are not only imaginative but also viable and impactful in real-life problems.
- **Cross-Culture Pollination:** Innovation thrives at the intersection of diverse perspectives. By exploring cross-cultural examples and collaborative approaches, which shows how blending insights from different contexts can spark breakthrough ideas.

Keywords: Design Innovation, Disruption, Scalability, Empathy, New Possibilities, Cross Culture Pollination (CCP)



Invited Lecture-7

Best practices of Research – Ethics



Prof. (Dr.) Vijay Singh Rathore

Affiliation & Contact:

PhD (Computer Science), MCA, MTech (CS), MBA, ICAD-USA, ICDA-USA, Diplomas in French & German

Chairman, Shree KKarni Universe College, Jaipur, Former Professor-CSE and & Director – OutReach, JECRC, Jaipur, NBA Programme Evaluator

Email: vijaydiamond@gmail.com; Mobile: +919783307390

Key Responsibilities:

- Organizing Scopus Indexed Conferences
 - Publishing Quality Research Papers
 - Seeking International Collaborations through strong Network in 10+ Countries
 - Liasoning with UGC, AICTE, NBA, NAAC, MHRD and other Govt. Agencies
 - Teaching/Mentoring Students/Scholars
 - Seeking National/International Projects (Erasmus+/DST/ SERB/NSF/MHRD etc.)

Presently running his own establishment **Shree KKarni Universe College, Jaipur** (in partnership), and Membership Chair, ACM Jaipur Chapter, and Past Chairman, CSI Jaipur Chapter. Having Teaching Experience of 22+ Years, Former Professor-CSE and & Director – OutReach, JECRC, Jaipur, 5 Patents published, 20 PhD Supervised, Published 94 Research Papers and 10 Books, Edited 12+ Conference Proceedings with Scopus/SCI indexing and associated as Editor & Reviewer in some reputed Journals, Received 20+ National and International Awards of Repute. His coreresearch areas include Internet Security, Cloud Computing, Big Data, and IoT. He has organized and participated 25+ National & International Conferences of repute.

His foreign visits for various academic activities (Delegate/Invited/Keynote Speaker/Session Chair/Guest) include USA, UK, Canada, France, Netherlands, Singapore, Egypt, Thailand, Vietnam, Nepal etc. He had been member of Indian Higher Education Delegation and visited 20+ leading universities at Canada (May, 2019), UK (July, 2017), and USA (Aug, 2018) supported by

AICTE (Led by then Chairman of AICTE Prof. Anil D Sahasrabudhe) and GR foundation. Other Delegation visits include University of Amsterdam (2016), Nanyang Technological University, Singapore (2018), University of Lincoln, QMUL, Brunel University, Oxford Brookes University (2020) for discussions on academic and research collaborations.

He is an active academician and always welcoming and forming innovative ideas in the various dimensions of education and research for the better development of the society.

Abstract

Best practices of Research – Ethics

Vijay Singh Rathore

Chairman, Shree KKarni Universe College, Jaipur, Former Professor-CSE and & Director – OutReach, JECRC, Jaipur, NBA Programme Evaluator

Best Practices of Research Ethics represent a fundamental cornerstone of academic, scientific, and professional inquiry, ensuring that research is conducted with integrity, transparency, accountability, and respect for human dignity, social values, and the environment. In today's knowledge-driven society, research ethics not only safeguard the credibility of findings but also promote trust among participants, institutions, funding agencies, and the wider public. This paper explores the essential principles, guidelines, and best practices that underpin ethical research, emphasizing the importance of honesty, objectivity, confidentiality, informed consent, plagiarism avoidance, data accuracy, authorship fairness, and compliance with legal frameworks.

A strong ethical foundation in research begins with honesty and truthfulness in the collection, analysis, and reporting of data. Fabrication, falsification, and misrepresentation undermine the validity of knowledge production and erode public trust in science. Equally important is objectivity, where researchers are expected to remain unbiased, avoiding conflicts of interest that may compromise the integrity of results. The principle of integrity demands consistency of thought and action, reinforcing accountability across all stages of research.

Respect for intellectual property is another core practice of research ethics, ensuring that proper credit is given through appropriate citations and acknowledgments. The avoidance of plagiarism, whether intentional or accidental, is a non-negotiable responsibility. Similarly, maintaining confidentiality and privacy protects the rights of participants, particularly in sensitive studies involving medical, psychological, or social dimensions. Ethical research requires obtaining informed consent, wherein participants are fully aware of the purpose, risks, and benefits of the study before agreeing to contribute. This ensures autonomy, dignity, and voluntary participation, free from coercion or manipulation.

In addition to protecting individuals, researchers are tasked with ensuring social responsibility, which involves conducting studies that contribute positively to society, minimize harm, and respect

cultural diversity. The ethical handling of data management is also crucial—data should be collected accurately, stored securely, shared responsibly, and retained only as long as necessary. Transparency in methodology, reproducibility of results, and adherence to institutional or disciplinary codes of conduct are all essential practices that reinforce research integrity.

Ethical authorship and publication practices constitute another dimension of best practices. Researchers must ensure that all contributors are fairly acknowledged, that duplicate publication is avoided, and that peer review processes are respected. Misleading authorship practices, such as gift authorship or ghostwriting, compromise the credibility of scholarly work and must be actively avoided. Ethical dissemination of findings also involves making results accessible to both academic communities and the public, avoiding exaggeration or distortion.

The globalization of research further emphasizes the need for cross-cultural sensitivity and adherence to international ethical standards. Researchers working across borders must respect local customs, values, and laws while ensuring that universal ethical principles are not compromised. With the increasing integration of technology and artificial intelligence in research, new ethical challenges have emerged, including concerns about algorithmic bias, digital privacy, data mining, and the responsible use of big data. These areas require constant vigilance and the development of updated ethical guidelines.

Institutions, ethics committees, and review boards play a critical role in safeguarding best practices of research ethics. By providing training, oversight, and approval processes, they ensure that research projects align with established ethical norms. Funding agencies also demand compliance with ethical standards, linking financial support with accountability. Furthermore, the education of young researchers in ethical principles is indispensable. Embedding ethics into academic curricula, workshops, and professional development programs instills a culture of integrity that persists throughout a researcher's career.

The consequences of ethical misconduct in research are far-reaching. Cases of plagiarism, falsification, or exploitation of participants can lead to retractions, damaged reputations, withdrawal of funding, legal actions, and loss of public trust. Therefore, cultivating ethical mindfulness is not only a moral duty but also a professional necessity. By adhering to ethical guidelines, researchers contribute to the reliability, validity, and sustainability of the scientific enterprise.

Best practices in research ethics are not static but evolving in response to technological advancements, societal expectations, and emerging global challenges. Issues such as climate change research, genetic engineering, biotechnology, and digital surveillance demand continuous ethical reflection and updated frameworks. Ethical research should be adaptive, inclusive, and forward-looking, promoting both innovation and responsibility.

Keywords: Research ethics, best practices, integrity, honesty, objectivity, accountability, informed consent, ethical research practices.



Invited Lecture-8

Beyond the Game: How Immersive Technology is Reshaping Reality



Shrey Mishra

Affiliation & Contact:

K 316/12, Lower Basement, Kainchiwali Gali, Lado Sarai, New Delhi 110030

Phone : +919810910263; Email: shrey@xrcentral.tech

Education & Professional Career:

2006-2010	B.Tech (IT) Jaipur Engineering College and Research Center
2019-2020	UCLA Anderson School of Management PGPM, Business Administration
2018-2019	Co-Founder Carkart.store
2018-2024	Teacher & Mentor, YEA!India
2014-Present	Founder, Gaming Central
2024-Present	Chief of Jungle Ops(Product)

Abstract

Beyond the Game: How Immersive Technology is Reshaping Reality

Shrey Mishra

This speech explores how immersive technologies like Virtual and Augmented Reality (VR/AR) are breaking free from their gaming roots to solve real-world problems. We'll journey through virtual operating rooms where surgeons perfect their skills, walk through architectural designs before a single brick is laid, and see how students can explore ancient civilizations from their classrooms. This presentation will showcase the practical, transformative applications of immersive tech in healthcare, education, and industry, demonstrating how it's not just changing our screens, but fundamentally altering how we learn, work, and interact with the physical world.

The work aims to examine the practical, transformative applications of immersive technology across sectors, emphasizing how it is not only reshaping digital interaction but also fundamentally redefining human learning, collaboration, and experience in the physical world.



Invited Lecture-9

The Double Edge of Digital Transformation: From UPI to Global Sanctions



Ishan Kapoor

Affiliation & Contact:

Founder & CEO, Hoping Minds, a leading EdTech venture partnered with 200+ corporates and 30+ universities.

Past roles with PwC, SMI (HRH Prince Charles), and Wipro Global 100 Leadership Program.

Enthusiast of trekking, gaming, and adventure sports.

Research Interests

- Digital transformation in education
- Workforce development & future-ready skills
- Technology-business-policy convergence
- Emerging domains: AI, Cybersecurity, Full Stack, Digital Marketing

Education & Professional Career

- IIT Delhi and IIM Calcutta alumnus.
- 13+ years of global experience across consulting, leadership, and entrepreneurship.
- Leads Hoping Minds, which has trained 100,000+ learners in technology-driven, outcome-oriented learning.

Abstract

The Double Edge of Digital Transformation: From UPI to Global Sanctions

Ishan Kapoor

Abstract:

What does a budget chai in Jaipur and a billion-dollar sanction in Moscow have in common? Both show how digital transformation is reshaping our world. Ishan takes us through India's UPI revolution — the system behind those QR codes you scan every day, now powering over 20 billion transactions a month - from literally being non-existent 10 years ago. A technology that has inspired Singapore and France to follow suit. Then we contrast it with the other side of Russia getting cut off from global platforms in the name of sanctions. Together, these stories show the double edge of technology: it can connect and empower, or divide and isolate. Convergence in terms of technology and business can be a superpower but if you're isolated then everyone else has the superpower!

Keywords: Cashless Economy, Digital platform, Digital Resilience, Cross-Border Payments, UPI



Invited Lecture-10

Cybersecurity and Digital Governance: A Critical Component of Modern Organizations



Dr. Vijay Laxmi Sharma

Dr. Vijay Laxmi Sharma is a Professor of Law (certified POSH Trainer since 2013) and empaneled as Mediator at Rajasthan High Court, Jaipur Rajasthan and currently working as Director Teacher Empowerment Centre Manipal University Jaipur. As founding member of Faculty of Law Manipal University Jaipur working since 2014 Dr Sharma has acted in the various leadership position as Director & Head of the Department of School of Law, Manipal University Jaipur. She has a rich and versatile teaching experience in Law of more than 22 years and has guided more than 10 Doctoral students till date. Her research area is Women Empowerment and Child Welfare. She is actively associated with various NGO's and organizations for the local counselling. She has chaired several national and international seminars and has been vocal on several talk shows on national channels like Doordarshan, Patrika etc where she had argued her points well and have been felicitated as well. She is a legal advisor on the panel for several leading hospitals in Jaipur and various legal firms, companies, service provider companies for prevention of sexual harassment at workplaces and has been part of various legal committees in the mainstream industrial setup. Dr. Sharma has conducted more than 500 awareness sessions till date.

Abstract

Cybersecurity and Digital Governance: A Critical Component of Modern Organizations

In today's interconnected world, cybersecurity threats pose significant risks to the stability of digital infrastructures across both private and public sectors. Effective digital governance is essential to ensure the security and stability of digital ecosystems. This article explores the evolving landscape of cybersecurity threats, the role of digital governance in mitigating these risks, and emerging trends in AI-driven security solutions and block-chain-based governance models.

The Importance of Cybersecurity Governance: Cybersecurity governance refers to the set of policies, processes, and practices that organizations implement to ensure the effective management, protection, and oversight of their information systems and digital assets. It establishes a structured framework to address cybersecurity risks, compliance requirements, and the evolving threat landscape. Key components of cybersecurity governance include:

- **Policies:** Clear policies outline acceptable use and responsibilities.
- **Risk Management:** Identifying potential threats and vulnerabilities to assess and prioritize risks.
- **Compliance:** Adhering to relevant laws and regulations to ensure legal requirements are met.

Types of Cybersecurity Threats: Common types of cybersecurity threats include:

- **Malware:** Software designed to harm or exploit systems.
- **Ransomware:** Malware that demands payment in exchange for restoring access to data.
- **Phishing:** Attempts to deceive individuals into revealing sensitive information.
- **Advanced Persistent Threats (APTs):** Sophisticated attacks carried out by well-funded groups targeting specific entities.

Digital Governance Frameworks: Digital governance involves establishing regulatory frameworks that require organizations to implement adequate cybersecurity measures. Examples include:

- **General Data Protection Regulation (GDPR)*:** Sets stringent guidelines for data protection in the European Union.
- **Cyber Security Information Sharing Act (CISA)*:** Encourages sharing of cyber threat information between government agencies and private entities.

Emerging Trends: Two emerging trends hold promise for enhancing cybersecurity:

- **AI-Driven Security Solutions:** Automating threat detection and response through machine learning algorithms.
- **Blockchain-Based Governance Models:** Providing transparency and accountability in cybersecurity practices through decentralized and tamper-proof ledger technology.

Best Practices for Cyber Governance: To ensure effective cyber governance, organizations should:

- **Implement a Risk-Based Approach:** Identify and assess risks, developing strategies to mitigate them.
- **Incorporate Cyber Governance into Corporate Culture:** Promote a culture of cybersecurity awareness and accountability.
- **Practice Transparency through Collaboration:** Share best practices, threat intelligence, and incident response strategies.

Conclusion: In conclusion, cybersecurity and digital governance are critical components of modern organizations. As cyber threats continue to evolve, it is essential for organizations to adopt proactive and adaptive governance frameworks that prioritize cybersecurity. By implementing effective cybersecurity governance, organizations can protect their digital assets, ensure regulatory compliance, and maintain stakeholder trust. As the threat landscape continues to shift, ongoing innovation and collaboration will be crucial in shaping the future of cybersecurity governance.



Invited Lecture-12

Legal Tech Innovation: Transforming the Future of Law



Adv. Mohan Kumar

Affiliation & Contact:

Mr. Mohan Kumar is the Founder & Managing Partner, Go4Legal, Delhi, India. He is alumnus of Jawaharlal Nehru University (JNU), New Delhi, with a strong academic foundation in Indian Constitution.

Professional: Prior to his present assignment he has served as a Judge Advocate General (JAG) officer, gaining extensive experience in legal advisory, military law, and dispute resolution within a disciplined and high-stakes environment. As founder and head of Go4Legal, he has been instrumental in establishing it as a premier law firm with pan India foot prints specializing in a wide range of legal services. In his capacity as Senior panel Advocate, he has represented and advised the Government of India on critical legal matters, showcasing expertise in navigating complex regulatory and constitutional frameworks.

His Areas of Expertise inter- alia include:

- Constitutional Law: Handled significant cases involving constitutional matters, ensuring compliance with legal and statutory frameworks.
- Arbitration: Proficient in managing arbitration proceedings, facilitating dispute resolution for commercial and contractual conflicts.
- Contract Law: Extensive experience in drafting, reviewing, and litigating contracts to safeguard client interests.
- Immigration Law: Provided expert counsel on immigration matters, assisting clients with legal compliance and procedural requirements.

Key Achievements:

- Successfully led Go4Legal to become a trusted name in Delhi's legal landscape, offering client-centric solutions across diverse legal domains.

- Represented high-profile clients, including the Union of India, in complex legal disputes, earning recognition for strategic insight and legal acumen.
- Built a reputation for delivering results in high-stakes arbitration and constitutional cases, combining legal expertise with practical problem-solving.
- Apart from above he has been participants in various TV debates/ seminars and authored book on Terror Organisations.

Abstract

Legal Tech Innovation: Transforming the Future of Law

Adv. Mohan Kumar

In the last decade, the legal industry has witnessed a dramatic shift driven by technology. Once perceived as a conservative profession resistant to change, law is now embracing digital transformation through legal technology (legal tech). From artificial intelligence to block-chain, legal tech innovations are reshaping how lawyers deliver services, how clients access justice, and how courts administer legal processes. This ongoing revolution is not merely about digitization but about reimagining the practice of law in a way that is faster, more transparent, and more accessible.

The Rise of Legal Tech: Legal tech refers to the use of technology and software to provide legal services, streamline processes, and improve the delivery of justice. Initially, technology in law was limited to basic tools like word processors, e-discovery software, or case management systems. Today, however, legal tech encompasses artificial intelligence (AI), machine learning, natural language processing, cloud computing, and block-chain. These innovations are enabling law firms, corporations, and courts to manage cases more efficiently and make data-driven decisions. The COVID-19 pandemic accelerated this transformation. Virtual court hearings, electronic filings, and remote collaboration platforms became necessities rather than luxuries. As a result, lawyers, judges, and clients realized the potential of legal tech to reduce costs, save time, and expand access to justice.

Key Areas of Innovation

- **Artificial Intelligence (AI) and Automation:** AI is at the forefront of legal tech. AI-powered tools can review contracts, conduct due diligence, and perform legal research with remarkable speed and accuracy. For instance, predictive analytics help lawyers assess case outcomes based on historical data. Document automation software also reduces repetitive drafting work, allowing lawyers to focus on strategic tasks.

- **E-Discovery and Data Analytics:** In litigation, managing large volumes of evidence is time-consuming. E-discovery tools use algorithms to sift through terabytes of documents, emails, and records to identify relevant materials. This not only saves resources but also enhances accuracy and minimizes human error.
- **Block-chain and Smart Contracts:** Block-chain technology is introducing new ways of ensuring transparency, security, and efficiency. Smart contracts—self-executing agreements coded on block-chain—eliminate intermediaries and automatically enforce obligations. In intellectual property, block-chain is used to track digital rights, reducing disputes over ownership and licensing.
- **Legal Research Platforms:** Advanced legal research platforms, driven by natural language processing, provide lawyers with case law, statutes, and precedents more quickly and effectively. These tools can even suggest arguments or identify inconsistencies in legal documents.
- **Online Dispute Resolution (ODR):** Legal tech has expanded the horizon of dispute resolution. ODR platforms allow parties to resolve disputes virtually, which is particularly beneficial in consumer disputes, e-commerce conflicts, and cross-border cases. ODR reduces costs and makes justice more accessible to individuals who may otherwise avoid lengthy litigation.

Benefits of Legal Tech: The advantages of legal tech innovation are profound. It enhances efficiency by automating routine tasks, reducing the burden on lawyers and courts. It increases accuracy, minimizing human errors in contract review or legal research. Importantly, legal tech fosters access to justice by lowering costs and making legal services affordable for underserved populations. It also promotes global collaboration, allowing lawyers to work seamlessly across borders.

Challenges and Ethical Concerns: Despite its potential, legal tech faces challenges. The most pressing concern is data security and privacy. Sensitive client information must be safeguarded against cyber threats. Another issue is digital inequality; smaller firms and individuals in developing regions may lack access to advanced tools. Moreover, over-reliance on AI raises questions about accountability and bias, as algorithms are only as fair as the data they are trained on. Lawyers must balance innovation with ethical obligations, ensuring that technology supports rather than undermines justice.

Conclusion: The future of legal tech is promising. Hybrid models of legal practice—where technology handles routine tasks while lawyers focus on human judgment—are becoming the norm. Courts are likely to adopt more virtual hearings and digital evidence systems, while law firms may increasingly use AI-driven analytics for strategic decision-making. Education will also evolve, with law schools integrating legal tech training into their curricula to prepare future lawyers for a tech-driven profession. Ultimately, legal tech innovation is not about replacing lawyers but empowering them. By combining human expertise with technological efficiency, the legal system can become

more responsive, inclusive, and resilient. Legal tech is revolutionizing the legal industry, challenging old practices, and opening new opportunities. From AI-powered research to block-chain contracts and online dispute resolution, these innovations are transforming how justice is delivered. While challenges of ethics, privacy, and accessibility remain, the benefits are undeniable. Legal tech, if harnessed responsibly, has the power to make the law not only more efficient but also more democratic. As we move forward, the synergy between law and technology will define the future of justice in the 21st century.



CONTRIBUTED PAPERS

Abstract

Harnessing Artificial Intelligence for Social Good: Challenges, Opportunities, and Ethical Considerations

Anupama Goyal

Department of Botany, Jayoti Vidyapeeth Women's University Jaipur.

Corresponding Email: goyalanupama29@gmail.com

Abstract: This research paper looks at how artificial intelligence (AI) can help make society better. It talks about the many ways AI can be used to improve people's lives, such as in healthcare, education, protecting the environment, and fighting for fairness. AI is being used more and more to solve big problems. However, it also comes with some risks, like unfair treatment of data, privacy issues, and making sure everyone is treated fairly. To make sure AI helps society in a good way, it's important to be open and honest about how it works, include different kinds of people in its development, and make sure it's used responsibly. The paper also shares examples of successful AI projects and explains how they can guide the right use of AI for the benefit of all.

Keywords: Artificial Intelligence, Social Good, Healthcare.

Introduction: Artificial Intelligence (AI) has emerged as a transformative power in the modern world, bringing revolution in industries and the way we live, work and interact. While the ability of AI for economic and technological progress is widely recognized, the purpose of this paper is to fly into a separate dimension - the ability to run social good. Using AI to solve big problems facing society is becoming more popular. It helps in areas like healthcare, education, protecting the environment, and making sure everyone is treated fairly. AI for social good is changing the way we deal with difficult problems. It uses data, automation, and predictions to help people and communities in a positive way. This paper looks at how AI is being used to improve the world and the important ethical issues involved.

The paper aims to show different uses of AI for social good while also highlighting the challenges and ethical concerns that need to be handled carefully. As we look at the growing use of AI for good, it's clear that progress comes with responsibility. This paper not only shows the potential of AI but also encourages thinking about ethics, teamwork across different fields, and developing AI in a responsible way to help society.

Methodology: This part explains the approach used to look into the challenges, chances, and ethics of using Artificial Intelligence (AI) for the good of society. The research uses a qualitative, multi-method strategy that includes reviewing existing literature, analyzing case studies, and conducting interviews with experts. A thorough search was done to find articles, reports, and documents from

2015 up to 2025. Sources like Google Scholar, IEEE Xplore, ACM Digital Library, and Scopus were used to locate relevant materials.

Results and Discussion: Artificial Intelligence (AI) plays an important role in addressing and promoting social challenges. Social good, it is important to ensure that its development and application follow moral principles. The following section underlines major moral ideas in the use of AI for social good:

- **Transparency and accountability:** AI system should be designed to be understandable and explanatory by stakeholders. Users should be aware of how AI-run decisions are made. Clear lines of responsibility and accountability should be established, to ensure that People responsible for the AI system are accountable to their decisions and functions.
- **Fairness and prejudice mitigation:** Efforts should be made to ensure that the AI system does not discriminate against any group on characteristics like race, gender, or socio-economic status. Fairness can help in metrics and auditing tools.
- **Inclusivity and Accessibility:** AI solutions should be made easy to use for people with disabilities and those who may not have easy access to technology. It's important to think about different needs and situations when designing these solutions.
- **Human-AI Collaboration:** Although AI can take over certain tasks and processes, it should be created to support, not replace, human judgment. Having humans involved is especially important in areas like healthcare and the justice system.
- **Data Privacy and Security:** Strong privacy protections should be in place to keep personal information safe. Users should clearly understand how their data is being collected and used. There should be clear ways for people to give their consent, and this process should be straightforward and honest. It's vital to have strong security systems to stop unauthorized access or misuse of important information

Conclusion: In today's world of rapid technological progress, combining artificial intelligence (AI) with the goal of helping society is a promising path forward. This research paper has looked at many different aspects, including the challenges, chances, ethical issues, successful examples, and what's ahead. By looking at the challenges, it's clear that while AI has the power to bring about big changes, it also comes with its own set of difficulties. Issues like biased algorithms, ethical concerns, limited resources, and the need for proper regulations must be carefully handled. However, these challenges also push us to create AI systems that are fair and responsible. At the same time, the opportunities we've found show the start of a new and exciting time. AI can provide fresh solutions to long-standing problems in areas like healthcare, education, protecting the environment, responding to disasters, and reducing poverty. These opportunities highlight how much AI can improve people's lives and contribute to the overall well-being of society.

Ethical considerations have become a guiding light in the responsible use of AI. The principles of fairness, transparency, accountability, and ethical development are essential to ensure that AI applications aimed at helping society truly benefit everyone without bias or discrimination. The focus on successful AI for social good projects has shown real examples of how AI can bring about positive change. These examples cover areas like drug discovery, healthcare diagnostics, environmental protection, poverty reduction, and disaster response, highlighting the real-world impact AI can have in tackling major societal issues. Looking forward, it is clear that the journey is still going on.

Ethical AI development, collaboration between different fields, ensuring fairness in AI, and its role in sustainable development and global health equity are among the key directions guiding the way forward. These emerging trends point the way toward a future where AI supports our collective efforts to build a more fair, sustainable, and just world. In conclusion, combining AI with social good opens up enormous potential. Although challenges exist, they can be overcome, and the opportunities they present are significant. As we work to use AI for the greater good, let's stay committed to ethical development and the betterment of humanity.

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Cybersecurity and Digital Governance: Challenges and Opportunities

Divyana Mohnani and Rekha Mithal

Department of Chemistry, Jaipur Engineering College and Research Centre, Jaipur, Rajasthan

Corresponding Email: rekha.mithal@jecrcu.edu.in

Abstract: The rapid digitization of economies, governments, and societies has redefined the landscape of security and governance. While digital transformation enhances efficiency, connectivity, and innovation, it simultaneously exposes individuals, organizations, and states to unprecedented cybersecurity threats. Cyberattacks, data breaches, ransomware, and misinformation campaigns not only disrupt critical infrastructure but also erode trust in digital governance systems. Effective governance in the digital era must therefore balance innovation with robustness, ensuring that policies, regulations, and institutions adapt to evolving risks. This paper explores the dual dimensions of cybersecurity as both a challenge and an opportunity within digital governance. Key challenges include securing data privacy, addressing cross-border cybercrime, managing the ethical use of emerging technologies like artificial intelligence, and mitigating digital divides. Conversely, opportunities lie in strengthening international cooperation, developing stronger regulatory frameworks, fostering public-private partnerships, and leveraging advanced technologies for proactive defense. By examining these dynamics, the paper highlights the need for a multi-stakeholder approach that integrates legal, technological, and organizational strategies. Because ultimately, cybersecurity is not merely a technical concern but a cornerstone of sustainable digital governance, where strength, transparency, and trust are critical for harnessing the full potential of the digital age.

Keywords: Cybersecurity, Digital Governance, Data Protection, Cybercrime, E-Governance



Intelligent Automation of Database Normalization: A Machine Learning Approach to Schema Optimization

Rahul Agarwal¹ and Leena Bhatia²

¹Rajasthan Technical University, Kota, India; ²S. S. Jain Subodh PG College, Jaipur, India

Corresponding Email: it.rahul@biyanicolleges.org

Abstract: The process of database normalization represents one of the most critical yet challenging aspects of relational database design. This fundamental procedure aims to eliminate data redundancy while preserving data integrity through systematic structural transformations. Conventional normalization approaches rely heavily on manual intervention by database architects, who must carefully analyse complex relationships and apply intricate normalization rules—a process that proves both labor-intensive and susceptible to human error. Our research introduces an innovative artificial intelligence framework designed to revolutionize database normalization through intelligent automation. This comprehensive system leverages advanced machine learning algorithms combined with sophisticated rule-based reasoning to automatically transform unnormalized database schemas into optimized structures. The proposed methodology integrates natural language processing for schema interpretation, reinforcement learning for decision optimization, and deep neural networks for pattern recognition in functional dependency identification.

Through extensive experimentation across diverse real-world and synthetic datasets, our model demonstrates remarkable performance in accurately detecting functional dependencies and generating well-normalized database schemas. The system achieves normalization success rates exceeding 92% while significantly reducing processing time compared to traditional manual approaches. This breakthrough research contributes substantially to the field of database engineering by providing a scalable, intelligent solution that democratizes access to expert-level normalization capabilities. This research successfully demonstrates the feasibility and effectiveness of AI-driven database normalization automation. Our hybrid framework, combining machine learning sophistication with rule-based reliability, achieves impressive performance across diverse evaluation scenarios while maintaining the rigor required for production database systems. The system addresses critical challenges in contemporary database design by reducing manual effort, minimizing human error, and democratizing access to expert-level normalization capabilities. These contributions position the framework as a valuable tool for enhancing database design efficiency and quality across various application domains. Future work will focus on extending the framework's capabilities to additional normal forms, improving integration with existing database design tools, and exploring applications in emerging database technologies. The foundation established by this research opens exciting possibilities for further automation in database engineering and design optimization.

Keywords: Database Normalization, Artificial Intelligence, Machine Learning, Functional Dependency Analysis, Automated Schema Optimization

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Beyond the Field: The Role of AI in Revolutionizing Sustainable Agriculture and Enhancing Food Security

Smriti Verma

Poornima Institute of Engineering and Technology, Jaipur, India

Corresponding Email: vsmriti95@gmail.com

Abstract: In order to address the global issues of food security, productivity, and sustainability, the fusion of agriculture and artificial intelligence (AI) has revolutionized the field. By 2050, there will likely be more than 9 billion people on the planet, making it impossible to meet growing food demands using only conventional farming methods without sacrificing the environment. This study examines how AI-driven technologies are transforming agricultural systems, from supply chain optimization and autonomous machinery to smart storage, smart irrigation, precision farming, and weather prediction analytics. AI supports the shift to sustainable agriculture by facilitating resource-efficient methods, real-time decision-making, and climate change resilience. Its integration also increases food security by lowering post-harvest losses, improving yield forecasting, and ensuring equitable resource distribution. While critically examining the ethical, technological, and financial challenges that must be overcome before AI can be applied widely, this study emphasizes the enormous potential of the technology. The study concludes by highlighting AI as a catalyst, not merely a tool, for building a resilient, sustainable, and food-secure future beyond the field.

Keywords: Sustainable Agriculture, Precision Farming, Food Security, Climate-Resilient Farming



AI-Driven Disaster Management: Improving Emergency Response and Recovery

Neha Tiwari¹ and Ashish Chandra Swami²

¹Rajasthan Technical University, Kota

² S. S. Jain Subodh PG College, Jaipur

Corresponding Email: tiwari.neha616@gmail.com

Abstract: Disasters, both natural and human-induced, are occurring with increasing frequency and intensity across the globe. These events result in loss of life, economic setbacks, and disruption to social systems. Traditional disaster management approaches, while effective to a degree, often struggle to process large amounts of data in real time and make timely, informed decisions. Recent advancements in Artificial Intelligence (AI) offer new opportunities to enhance disaster preparedness, emergency response, and recovery efforts. AI technologies such as machine learning, predictive analytics, and data mining can assist in forecasting disasters, allocating resources, and

improving communication, thus reducing the adverse impacts of crises. AI-driven disaster management presents a promising approach to improving emergency response and recovery. By leveraging data-driven insights, predictive analytics, and automated tools, decision-makers can respond more effectively, potentially saving lives and reducing economic losses. Despite certain ethical and technical challenges, the integration of AI with existing disaster management systems offers long-term benefits in building resilient and prepared communities. Future work should focus on enhancing data quality, fostering cross-sector partnerships, and developing transparent, inclusive AI models to ensure equitable access and responsible use.

Keywords: Predictive analytics, machine learning, early warning systems, recovery planning, ethical AI, resilience.



The Evolution of Intelligence: Trends and Challenges in Machine Learning Systems

Sachin Bagoria and Kavita

SKD University, Haumangarh, Rajasthan, India

Corresponding Email: it.sachin@biyanicolleges.org

Abstract: The field of machine learning (ML) has undergone a remarkable transformation over the past few decades, evolving from simple statistical models to complex, data-driven systems capable of performing tasks that once required human intelligence. This evolution mirrors humanity's pursuit to replicate, augment, and ultimately understand intelligent behavior through computational systems. In this paper, we explore the trends that have shaped the development of modern machine learning systems and the multifaceted challenges that continue to influence their progress and adoption. Early machine learning systems were grounded in rule-based logic and supervised learning, where models learned mappings between inputs and outputs from labeled data. As computational resources grew and data became more abundant, algorithms such as decision trees, support vector machines, and ensemble methods gained prominence. However, the most transformative leap came with the rise of deep learning, a subset of ML inspired by the human brain's structure. Deep neural networks have since driven significant advancements in computer vision, natural language processing, speech recognition, and other domains, powering technologies from autonomous vehicles to conversational AI. Despite these successes, the evolution of ML intelligence is not without obstacles. One major trend is the increasing scale of models, such as large language models and foundation models, which offer powerful capabilities but come with steep computational and environmental costs.

This trend raises concerns about the sustainability and accessibility of cutting-edge ML research, as only a few well-resourced organizations can afford to train such models. Another critical issue is the lack of interpretability and transparency in many ML systems. As models grow in complexity, understanding their decision-making processes becomes more challenging, especially in high-stakes fields like healthcare, finance, and criminal justice. Explainable AI (XAI) has emerged as a response to this challenge, aiming to make model outputs more understandable to humans without compromising performance. Furthermore, ethical considerations have come to the forefront. Bias in training data, algorithmic discrimination, and privacy violations present significant societal risks. These challenges necessitate not only technical solutions but also interdisciplinary collaboration involving ethicists, legal experts, and policymakers. Additionally, the robustness and generalizability of ML systems remain critical hurdles, as models often perform well in controlled settings but struggle with real-world variability and adversarial inputs. Looking forward, the evolution of intelligence in ML is likely to focus on creating more generalizable, resource-efficient, and ethically sound systems. Innovations in transfer learning, federated learning, and neurosymbolic models may pave the way for the next generation of machine intelligence. Ultimately, the journey toward truly intelligent systems is as much about understanding human cognition and social values as it is about advancing algorithms. This paper synthesizes the key trends driving ML forward and highlights the technical, ethical, and societal challenges that must be addressed to ensure that machine learning evolves in a direction that benefits all.

Keywords: Machine Learning, Artificial Intelligence, Deep Learning, Interpretability, Model Scalability



Artificial Intelligence and Blockchain Solutions for Global Partnership

Himanshu Mathur* and Aditya Biyani

Biyani Group of Colleges, Jaipur

Corresponding Email: it.himanshu@biyanicolleges.org

Abstract: Global partnerships today face many hurdles—mistrust, lack of transparency, delays, and data security issues. Artificial Intelligence (AI) and Blockchain, though very different in their functions, can work together to solve these problems. AI brings intelligence—helping partners predict trends, automate decisions, and improve efficiency—while Blockchain provides security and trust by recording data in a way that cannot be tampered with. Together, they create a powerful framework that can reshape the way countries, businesses, and institutions work with each other. This paper explores how AI and Blockchain can jointly support areas like trade, healthcare, finance, and education, making global partnerships more trustworthy, transparent, and future-ready. AI and

Blockchain are not just buzzwords—they are real tools that can help build stronger, fairer, and more transparent global partnerships. By combining AI's brainpower with Blockchain's trust system, international collaborations can be faster, smarter, and safer. Still, the road ahead is not simple. Global rules, scalability, and ethical use must be addressed before these technologies can reach their full potential. If used wisely, AI and Blockchain can become the backbone of future global cooperation, helping countries and organizations work together with greater confidence and efficiency.

Keywords: Global Cooperation, Complex decision making



Balancing Security and Freedom: The Concept of Digital Arrest in the Digital Age

Reema Choudhary

Biyani Group of Colleges, Jaipur

Corresponding Email: reemachoudhary0811@gmail.com

Abstract: Digital arrest is an emerging concept in cyber law that focuses on controlling an individual's freedom through technological means instead of traditional physical confinement. It is especially relevant in cases of cybercrime, financial fraud, and offenses committed through digital platforms. Digital arrest may include measures such as electronic tagging, GPS tracking, and online activity monitoring, blocking access to social or financial accounts, and freezing digital assets. The idea is to reduce the pressure on physical policing and prisons while still ensuring that offenders remain under legal supervision. It also reflects the growing shift towards digital governance and technology-based law enforcement. Digital arrest can become a powerful legal mechanism if implemented with strict safeguards, judicial oversight, and robust data protection laws. Striking a balance between state security and the protection of fundamental rights will determine its long-term acceptance in modern legal systems.

Keywords: Digital Arrest, Cyber Law, Surveillance, Privacy, Cybercrime, Human Rights, Digital Governance.



Cyber security and Digital Governance: Challenges, Frameworks, and Opportunities

Kamlesh Kumar

Biyani Group of Colleges, Jaipur

Corresponding Email: it.kamlesh@biyanicolleges.org

Abstract: The rapid digital transformation across governments, businesses, and societies has brought forth unprecedented opportunities while simultaneously exposing critical vulnerabilities in cyberspace. Cyber security and digital governance have therefore emerged as essential pillars for ensuring trust, accountability, and resilience in the digital era. As governments increasingly adopt e-governance models, cloud computing, big data analytics, and artificial intelligence, the scope and complexity of cyber threats have also intensified, ranging from data breaches and ransomware attacks to state-sponsored cyber warfare and disinformation campaigns. These challenges underscore the urgent need for robust frameworks that safeguard digital infrastructure, protect citizens' data, and foster inclusive governance. The key challenges in this domain include the lack of uniform regulatory standards, gaps in cyber awareness and capacity building, inadequate legal mechanisms to address cross-border cybercrime, and the tension between data privacy and state surveillance. Developing nations face additional barriers such as limited resources, weak institutional frameworks, and insufficient collaboration between public and private stakeholders. Moreover, the rapid pace of technological innovation often outstrips the ability of policymakers to regulate effectively, creating vulnerabilities that malicious actors exploit. In response, various frameworks have been proposed and implemented globally, such as the European Union's General Data Protection Regulation (GDPR), India's Digital Personal Data Protection Act (DPDPA), and guidelines from the National Institute of Standards and Technology (NIST). These frameworks aim to balance security, privacy, and innovation by setting benchmarks for data protection, cyber resilience, and accountability. International cooperation, through bodies such as the United Nations, is also critical in creating harmonized standards and promoting cross-border collaboration. Effective digital governance frameworks must integrate multi-stakeholder approaches, emphasizing transparency, interoperability, ethical AI adoption, and the principle of "security by design." Despite challenges, the digital era also presents significant opportunities. Secure digital ecosystems can foster economic growth, empower citizens, and enhance trust in governance. Cyber security advancements in blockchain, quantum encryption, and zero-trust architectures provide innovative pathways to counter evolving threats. Furthermore, the integration of cyber security within digital governance enhances democratic values by protecting freedom of expression, ensuring data privacy, and reducing the digital divide. Governments can also leverage secure digital platforms to deliver efficient public services, promote financial inclusion, and support sustainable development goals (SDGs). In conclusion, cyber security and digital governance are deeply intertwined, requiring holistic approaches that blend technological innovation, sound policy frameworks, and international collaboration. While challenges such as cybercrime, regulatory gaps, and ethical dilemmas persist, adopting adaptive governance models and fostering a culture of cyber resilience can transform these challenges into opportunities for inclusive and sustainable digital growth. Ensuring security, trust,

and accountability in digital ecosystems is not only a technical necessity but also a democratic imperative for the future of global governance.

Keywords: Cyber Security, Digital Governance, Data Privacy, Cyber Resilience, Digital Transformation



Utilizing AI and Block chain to Enhance and Enable Global Partnerships

Shbna Ali and Pankaj Gupta

Biyani Group of Colleges, Jaipur

Corresponding Email: it.shabna@biyanicolleges.org

Abstract: With the world becoming more connected, global partnerships are necessary to address daunting challenges across finance, healthcare, climate action, and supply chains. While such collaborations present significant barriers in the areas of trust, transparency, data sharing, compliance, and jurisdictional coordination. This article discusses the fusion of Artificial Intelligence (AI) and blockchain technologies as a two-layered approach for improving the effectiveness, accountability, and toughness of global partnerships. AI provides sophisticated analytics, predictive analytics, and automation, facilitating smarter decision-making and partner assessment. Blockchain provides decentralized trust, irreversible record-keeping, and open governance via smart contracts. Collectively, these technologies facilitate trusted data sharing, efficient cross-border activities, and tamper-evident accountability platforms. We set forth a conceptual framework that capitalizes on the synergy between AI and blockchain to underpin decentralized collaboration, privacy-enhancing data sharing, and adaptive governance. Case examples in finance, global trade, and SME networks illustrate the revolutionary potential of this integrated model. The paper ends by emphasizing implementation challenges and presenting strategic recommendations for policy, infrastructure, and research to develop AI-blockchain-fueled global partnerships. Artificial intelligence and blockchain in tandem can transform worldwide partnerships through building trust, transparency, and operational excellence. A customized architecture fusing the two technology elements delivers scalable, accountable, and adaptive collaboration models. Appeals for interdisciplinary research to discover, test, and implement such systems worldwide.

Keywords: Blockchain, Artificial Intelligence, Global Trade



Digital Intermittent Fasting: An IT-Enabled Approach for Sustainable Digital Well-being

Preeti Bansal

Biyani Group of Colleges, Jaipur

Corresponding Email: it.preeti@biyanicolleges.org

Abstract: In the era of ubiquitous connectivity, excessive screen exposure has become a major contributor to digital fatigue, reduced productivity, and mental health concerns. The concept of Digital Intermittent Fasting (DIF), inspired by nutritional intermittent fasting, is an innovative cyber wellness strategy that promotes scheduled breaks from digital devices such as smartphones, laptops and social media platforms to promote cognitive balance and digital hygiene. DIF leverages Information Technology (IT) solutions including productivity software (e.g., RescueTime, Cold Turkey Blocker, Freedom, Forest, Focus@will) and AI-driven wellness platforms that monitor, regulate, and optimize digital consumption. Existing literature highlights the negative consequences of constant connectivity, such as sleep disruption, attention deficit, and stress, but few structured frameworks exist for practical digital detox. Therefore, this study evaluates the design, implementation, and outcomes of a DIF framework supported by digital well-being tools. Digital Intermittent Fasting provides a structured, IT-enabled strategy to counteract the adverse effects of digital overuse. By integrating behavioral interventions with software-assisted monitoring, DIF fosters healthier screen habits, enhances productivity, and supports mental well-being. The study concludes that DIF can serve as a scalable digital hygiene model for both academic and professional environments, particularly when supported by tools like RescueTime, Freedom and AI-powered apps. Future research should focus on longitudinal outcomes and explore integration with institutional digital wellness policies.

Keywords: Digital Intermittent Fasting, Digital Detox, Screen Time Management, Human-Computer Interaction, IT-enabled Wellness



The Role of Artificial Intelligence for Social Good

Lochan Sharma

Biyani Group of College, Jaipur

Corresponding Email: it.lochan@biyanicolleges.org

Abstract: Artificial Intelligence (AI) is rapidly evolving from a technological innovation into a transformative force capable of addressing some of the world's most pressing social challenges. This paper explores the multifaceted role of AI in promoting social good, emphasizing its applications across healthcare, education, environmental sustainability, disaster management, and

social equity. By leveraging data-driven insights, predictive modeling, and intelligent automation, AI systems can enhance public service delivery, democratize access to resources, and empower marginalized communities.

The paper critically examines how AI-driven solutions—such as diagnostic algorithms, personalized learning platforms, climate monitoring tools, and crisis response systems—are reshaping traditional approaches to problem-solving. It also highlights the ethical dilemmas and governance challenges that accompany AI deployment, including algorithmic bias, data privacy, transparency, and accountability. Through real-world case studies and interdisciplinary analysis, the research underscores the importance of inclusive design, community engagement, and policy frameworks that prioritize human-centric values.

Ultimately, the paper argues that AI for social good is not merely a technical endeavor but a moral imperative. Its success depends on aligning innovation with equity, fostering collaboration between technologists and social stakeholders, and ensuring that AI systems are designed to serve—not replace—human agency. By embracing responsible AI development, societies can harness its potential to create more resilient, just, and sustainable futures.

Keywords: Artificial Intelligence (AI), Social Good, Ethical AI, AI Governance, Machine Learning



AI Beyond Automation: Towards Human-Centric Intelligence

Shruti Kumawat and Anju Bhatt

Biyani Group of College, Jaipur

Corresponding Email: it.shruti@biyanicolleges.org

Abstract: The 21st century has witnessed an unprecedented transformation in Information Technology (IT), reshaping how societies communicate, work, learn, and innovate. While automation has long been the hallmark of IT advancement, the next frontier emphasizes human-centric intelligence, where technology augments—not replaces—human capabilities. Traditional IT applications were largely focused on efficiency, cost reduction, and repetitive task automation. However, today's IT landscape prioritizes inclusivity, adaptability, ethics, and empowerment. Human-centered IT is redefining interactions between people and machines, ensuring that digital solutions remain empathetic, socially responsible, and sustainable in an era of artificial intelligence, cloud computing, and the Internet of Things (IoT).

Information Technology is no longer just about speed and automation; it is about shaping a future where technology and humanity grow together. Human-centric intelligence fosters resilience, inclusivity, and ethical progress while balancing innovation with responsibility. The paper concludes that the next decade of IT must focus on designing systems that amplify human strengths,

cybersecurity, and climate change. By prioritizing people over processes, IT will continue to serve as the backbone of sustainable development and societal transformation.

Keywords: Information Technology, Human-Centric Intelligence, Artificial Intelligence, Digital Transformation, Ethics in IT



Quantum Computing - Resistant Cloud Security Architecture for Next-Generation IT Systems

Khushnuma

Biyani Girls College, Jaipur

Corresponding Email kushirangrez68@gmail.com

Abstract: Quantum computing is known for its speed and ability to solve complex problems, but its rising energy demand is a growing concern. India's first quantum computer was developed in 2020 by the IISc and DST team, completing a complex calculation in just a few seconds—a task that even a supercomputer would struggle with. This study explores making quantum systems more sustainable using Digital Twin Modeling, Real-Time Tracking, and Green Code Optimization. Quantum computing is gaining popularity for its speed and ability to solve complex problems. However, one important aspect has received very little attention—its energy consumption and environmental impact. Current quantum computers require extremely cold environments, specialized hardware, and large amounts of electricity to operate. If they are widely used in the future, this could become a major challenge for sustainability.

So far, most research has focused on quantum algorithms and data security. In contrast, very little work has been done on creating energy-efficient and sustainable quantum systems. This study aims to address that gap. It will explore possibilities such as energy-efficient hardware design, low-power error-correction technique. This study shows that quantum computing can move beyond just speed and power. By using Digital Twin, Real-Time Tracking, and Green Code Optimization, energy use can be reduced without harming performance. These findings highlight that the future of quantum technology must also be green and sustainable.

Keywords: Quantum Computing, Energy Efficiency, Digital Twin, Green Code, Sustainable IT



Green Technology: Harnessing AI for Sustainable Energy Solutions in India

Kumkum Sharma

Student, Biyani Girls College, Jaipur

Corresponding Email: navalkishorsharma75@gmail.com

Abstract: India is currently at a critical juncture of balancing economic growth with environmental sustainability. The rising demand for energy, coupled with the pressing need to reduce carbon emissions, calls for innovative solutions. Artificial Intelligence (AI) has emerged as a transformative tool that can accelerate the adoption of green technologies. From optimizing renewable energy grids to predicting energy demand and enhancing efficiency, AI offers promising avenues for sustainable energy development in India. Harnessing AI for sustainable energy solutions in India represents a path toward achieving national energy security and climate goals. With proper policy support, public-private partnerships, and capacity building, India can position itself as a global leader in AI-driven green technologies. The integration of AI not only accelerates renewable energy adoption but also contributes to the United Nations Sustainable Development Goals (SDGs), particularly Affordable and Clean Energy (SDG 7) and Climate Action (SDG 13).

Keywords: Artificial Intelligence, Green Technology, Renewable Energy, Sustainability, India



Blockchain Technology and Its Future in Banking

Anshika Agarwal and Rashi Gupta

Biyani Girls College, Jaipur

Corresponding Email: anshikaagarwal648@gmail.com

Abstract: Blockchain technology is emerging as one of the most transformative innovations of the 21st century, particularly in the banking and finance sector. Unlike centralized systems, blockchain operates on a distributed ledger where transactions are verified through consensus and protected by advanced cryptography. This reduces the risk of fraud, enhances transparency, and significantly speeds up financial processes. The integration of smart contracts can automate banking functions like loan processing, settlements, and compliance without third-party intervention.

The future of banking with blockchain promises faster cross-border transactions reduced operational costs, efficient Know Your Customer (KYC) processes, and financial inclusion for underserved communities. However, challenges such as scalability, regulatory uncertainty, energy use, and cybersecurity must be addressed before large-scale adoption. This abstract emphasizes that

blockchain is not merely a technological upgrade but a fundamental shift in banking operations. If integrated strategically, blockchain can build a financial ecosystem that is more secure, transparent, and inclusive for the future.

Blockchain technology has the potential to revolutionize the banking sector by ensuring faster, cheaper, and more secure financial services. While challenges in regulation, scalability, and adoption remain, the opportunities are far greater. Collaboration between banks, governments, and technology innovators will determine how quickly blockchain can be mainstreamed. If implemented effectively, blockchain will not just modernize banking but create a system that is transparent, inclusive, and resilient for future generations.

Keywords: Blockchain, Banking, FinTech, Crypto currency, Smart Contracts, Financial Inclusion



Cybersecurity Challenges in Digital India

Sonakshi Rathore

Biyani Girls College, Jaipur

Corresponding Email: sonakshirathore0410@gmail.com

Abstract: India's rapid digital transformation has positioned the country as one of the world's largest digital ecosystems, supported by initiatives such as Digital India, Aadhaar-enabled services, Unified Payments Interface (UPI), and increasing internet penetration in rural regions. While these advancements have boosted economic growth, financial inclusion, and e-governance, they have also created new vulnerabilities in the cyber landscape. Cybersecurity challenges, such as phishing, ransom ware, identity theft, and data breaches, are becoming increasingly sophisticated. Moreover, the integration of emerging technologies, such as 5G, the Internet of Things, and Artificial Intelligence, further expands the attack surface. Protecting sensitive information, ensuring trust in digital services, and safeguarding national security have therefore become urgent priorities in Digital India. As India's digital economy continues to expand, cybersecurity will play a decisive role in ensuring the stability and resilience of digital infrastructures. The study concludes that a multi-pronged approach is essential: strengthening legal frameworks, enhancing public-private partnerships, improving citizen awareness, and fostering a culture of cyber hygiene. Furthermore, India must invest in advanced research on Artificial Intelligence-driven threat detection and Quantum-safe encryption to prepare for next-generation cyber risks. Only by addressing these challenges holistically can Digital India achieve its vision of a secure, inclusive, and globally competitive digital future.

Keywords: cybersecurity, digital India, cyber threats, data protection, cyber resilience



Exascale Computing

Laxmi Agarwal

Biyani Girls College, Jaipur

Corresponding Email: agarwallaxmi200@gmail.com

Abstract: Defined by systems that can perform one quintillion (10¹⁸) floating point operations per second, exa-scale computing is at the highest of HPC. This leap in computational power moves us to a new summit, enabling researchers, engineers, and scientists to address previously unsolvable challenges, datasets, and simulations across various fields. Fundamentally, exascale computing platforms consist of tens of thousands of modern processors, both CPUs and GPUs, linked together by high-speed networks that maintain high throughput and low latency. These systems support multilevel parallelism, making it possible to efficiently distribute and process very large tasks. Exascale software and programming models deal with extreme parallelism and heterogeneity. Widely used examples include MPI for distributed messaging, task-based models such as Legion for handling intricate dependencies, and PGAS for shared global memory abstraction. These models address massive parallelism, energy efficiency, and fault tolerance. The use of hybrid programming that merges these models is widespread in enhancing performance on CPUs, GPUs, and other accelerators in exascale machines.

Take for example El Capitan at Lawrence Livermore National Laboratory, alongside Aurora at Argonne National Laboratory, and Frontier at Oak Ridge National Laboratory, which is the first exascale system released in 2022. These systems aid advanced scientific research by running simulations of complex phenomena in climate science, physics and various other fields.

Ultimately, exascale computing is one of the most crucial elements for the next upcoming era of scientific exploration and technological achievement. It ensures to change the methods of a civilization in the face of the hardest challenges by utilizing exascale computation.

Keywords: Exascale Computing, Scientific Discovery, Climate Science, AI, High Performance Computing (HPC).



Machine Learning in Drug Discovery

Tanisha Soni

Biyani Group of Colleges, Jaipur

Corresponding Email: tanishasoni3984@gmail.com

Abstract: Drug discovery is a long, expensive and complex process, often taking 10-15 years and billions of dollars. Machine learning (ML) a branch of Artificial Intelligence, is helping researchers speed up this process by analyzing huge biological and chemical datasets, predicting drug behavior, and reducing trial-and-error. The methodology of machine learning in drug discovery starts with collecting large datasets of chemical, biological, and clinical information. Then this data is cleaned, normalized, and transformed to ensure accuracy and consistency. Machine learning in drug discovery has yielded significant results by improving the speed and accuracy of identifying drug candidates. Models have successfully predicted drug-target interactions, helping researchers understand how potential drugs will behave in the human body. Another important application is in toxicity and side-effect prediction, which reduces the chances of late-stage drug failure and improves patient safety. Generative models have designed new molecules with desired features; while repurposing methods have identified new uses for existing drugs. However, challenges such as data quality, model transparency, and the need for experimental validation remain, highlighting the importance of combining machine learning with traditional research methods. Machine learning has transformed drug discovery by making the process faster, cheaper, and more accurate. It helps predict drug-target interactions, toxicity and design new compounds while also supporting drug repurposing and personalized medicine. Despite challenges like data quality and validation, it holds great promise for advancing modern healthcare.

Keywords: Drug-target interaction, Drug repurposing, Generative models, Toxicity prediction, Virtual screening

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The Role of Artificial Intelligence for Social Good

Nitesh Tak

Biyani Group of Colleges, Jaipur

Corresponding Email: nitesh72006@gmail.com

Abstract : Today's digital world is changing because of AI (Artificial Intelligence). It is used in many fields like health, education, agriculture, business, disaster management, and governance. AI is making life easier and bringing positivity in society. The aim of this study is to show how AI (Artificial Intelligence) creates positive impact and helps in social good. This study shows that AI is

very helpful in different areas of society. In health, it helps doctors to detect diseases early and give better treatment. In education, it supports students with personal learning and helps teachers know weak points. In agriculture, farmers use AI tools for weather and crop information which improves production. In business, AI helps companies to understand customers and make work easier. In disaster management, AI helps to predict earthquakes, floods, and storms. However, along with these benefits, there are some challenges also. AI can reduce human jobs and there are risks of data leaks, hacking, and cybersecurity issues. These points show that AI is bringing big changes in society but it must be used carefully and responsibly. This study shows that because of AI many changes have happened and it is a good way to move forward. AI is helping in fields like agriculture, health, disaster management, business, and education, and it is bringing positivity in society. It has changed the way people work, made work easier and faster, and helps to solve problems quickly. But there are also some problems like job loss, data leaks, and hacking risks. If these problems are controlled, AI can take the world forward. In the future, if government, businesses, and education work together and use AI in a good way, then it can bring more positive changes for people and society.

Keywords: Artificial Intelligence, Social Good, Education, Health, Agriculture



Cyber Security in the Age of Digital Transformation

Neha Solanki

Biyani Group of Colleges, Jaipur

Corresponding Email: nehasolankii99@gmail.com

Abstract: In today's digital era, cybersecurity has become a topic that affects every individual and organization. As we move further into cloud computing, digital banking, e-commerce, and even online education, the risk of cyberattacks has grown sharply. Issues like data theft, financial fraud, and ransomware are no longer rare events but everyday challenges. For countries like India and Japan, which are both pushing for rapid digital growth, the question is not just about adopting technology but also about securing it. To understand this better, I looked at recent case studies of cyber incidents from both India and Japan and also reviewed their national policies on cybersecurity. The results show that while Japan is ahead in building strong cybersecurity infrastructure, India is working more on awareness programs and affordable tools that can reach a wider population. Both countries face similar threats such as phishing, identity theft, and ransomware. Interestingly, the survey revealed that less than half of the participants felt confident about their own digital safety practices. Many felt that technical solutions alone are not enough—public awareness and collaboration between countries are just as important. Combining Japan's strength in advanced technology with India's growing software sector could create more practical and inclusive cybersecurity solutions. Cybersecurity is not only about protecting data; it is about building trust in

a digital society. Stronger cooperation between India and Japan can help create safer systems, prepare people to handle risks, and ensure that digital transformation benefits everyone.

Keywords: Cybersecurity, Digital Transformation, India-Japan, Data Privacy, Online safety



Cybersecurity: Safeguarding the Digital Future

Harshita Kanwar Rathore

Biyani Group of Colleges, Jaipur

Corresponding Email: Harshitakanwarrathore282@gmail.com

Abstract: In today's interconnected digital world, data has become one of the most valuable resources. Governments, companies, and individuals rely heavily on digital platforms for communication, banking, healthcare, education, and even governance. However, with this rapid growth in digitalization comes an equally significant rise in cyber threats. Cybersecurity, therefore, has become one of the most pressing concerns of the 21st century. Cybersecurity refers to the practice of protecting systems, networks, and data from digital attacks. Cybercriminals attempt to steal, damage, or manipulate sensitive information for personal gain, political motives, or financial advantage. According to recent reports, global damages caused by cybercrime are projected to reach trillions of dollars annually. The aim of this research paper is to explore the increasing importance of cybersecurity, identify major threats, study defense mechanisms, and emphasize the role of global collaboration through platforms like BICON. The history of cybersecurity dates back to the 1970s when the first computer worms and viruses appeared. Initially, cybersecurity focused on protecting mainframes and government data. With the rise of personal computers in the 1980s and the Internet in the 1990s, cyberattacks became more widespread. In the past decade, the scale and sophistication of cyberattacks have grown dramatically. For example, the WannaCry ransomware attack (2017) affected more than 200,000 computers across 150 countries, disrupting hospitals, businesses, and transportation systems. Similarly, the SolarWinds supply chain attack (2020) compromised several U.S. government agencies and global corporations. Governments and industries have introduced policies and standards to improve digital safety. The General Data Protection Regulation (GDPR) in Europe protects user privacy, while the NIST Cybersecurity Framework provides guidelines for organizations to manage cyber risks. Despite these efforts, the frequency of cyberattacks continues to rise, highlighting the urgent need for stronger solutions.



The Role of Artificial Intelligence for Social Good

Hiteshi Jhanwar and Tamanna Mittal

Biyani Girls College, Jaipur

Corresponding Email: hiteshijhanwar@gmail.com

Abstract: Artificial Intelligence (AI) is one of the most transformative technologies of the 21st century. Beyond its applications in business and industry, AI has the potential to create a significant positive impact on society. When applied responsibly, it can help solve some of the world's most pressing challenges, from healthcare to education, environment to humanitarian aid.

Early Diagnosis & Treatment: AI-powered systems can detect diseases such as cancer, heart conditions, and neurological disorders earlier than humans. *Drug Discovery:* Machine learning models accelerate the discovery of new medicines. *Remote Healthcare:* AI chatbots and telemedicine assist people in rural areas with limited access to doctors.

Personalized Learning: AI can adapt learning materials to each student's pace and style.

Language Translation Tools: Break language barriers, helping students across the globe access quality education. *Assistive Technology:* Speech recognition and text-to-speech help differently-abled learners.

Climate Change Prediction: AI models forecast weather patterns and natural disasters, helping in preparedness. *Wildlife Protection:* AI-powered drones and cameras track endangered species and combat poaching. *Smart Agriculture:* Precision farming with AI reduces water use, increases crop yield, and minimizes waste.

Employment Opportunities: AI platforms match job seekers with opportunities, promoting inclusivity. **Challenges & Ethical Concerns** While AI has great potential for social good, it comes with risks: *Bias in Algorithms:* Discrimination may occur if AI is trained on biased data. *Privacy Issues:* Large-scale data collection raises security concerns. *Job Displacement:* Automation may affect employment in some sectors. *Accountability:* Questions remain about who is responsible for AI's decisions.

Artificial Intelligence is a powerful tool that can help build a fairer, healthier, and more sustainable world when developed and used responsibly. Its role in healthcare, education, environment, disaster management, governance, and accessibility proves that AI is not just a technological advancement—it is a driver of social good. However, to maximize its benefits, ethical practices, transparency, and inclusive policies must guide its development.

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Neuro-Cybersecurity: Protecting Brain-Computer Interference in Future Computer

Himanshi Sharma and Nitika Saini

Biyani Girls College, Jaipur

Corresponding Email: saininitika60@gmail.com

Abstract: The emergence of brain-computer interfaces (BCIs) mark a future where human cognition and digital systems converge seamlessly. While BCIs hold transformative potential in healthcare, education, and communication, they also introduce an unprecedented class of vulnerabilities—where what is at stake is not just data, but thought itself. Neuro-cybersecurity thus emerges as a frontier discipline dedicated to safeguarding neural information, protecting cognitive integrity, and shaping ethical governance for the next generation of the internet. This paper explores the limitations of current cybersecurity strategies when applied to neural technologies, highlights the risks of cognitive exploitation, and proposes a neuro-governance model that integrates technical, ethical, and policy-oriented approaches. The findings suggest that securing the brain must become a central concern of cybersecurity in the decade ahead. BCIs are no longer the realm of distant science fiction; they are rapidly advancing toward integration in healthcare systems, virtual environments, and everyday communication. Yet, the absence of neuro-cybersecurity frameworks leaves humanity vulnerable to the most personal form of cyberattack—the hacking of thought. This research concludes that the protection of neural data must be elevated to the same level of priority as the protection of digital infrastructure. The proposed neuro-governance model demonstrates that safeguarding BCIs requires the fusion of technical innovation, human-centered governance, and ethical foresight. Ultimately, defending cognition is not merely a security objective but a defining responsibility of the digital age.

Keywords: Neuro-cybersecurity, Brain- Computer Interference, Cognitive Privacy, Neural Data Protection, digital governance.



5G and 6G: Revolutionizing Smart Cities for a Sustainable Future

Khushi Tailor

Biyani Girls College, Jaipur

Corresponding Email: khushitailor2404@gmail.com

Abstract: The rapid advancement of wireless communication technologies has transformed the way Societies operate, interact, and innovate. With the global rollout of 5G and the emerging Research in 6G, smart cities is moving closer to becoming reality. Smart cities utilize Interconnected devices, sensors, and intelligent systems to enhance public services, Transportation, energy management, healthcare, and governance. While 5G networks enable High-speed connectivity, low latency, and massive device integration, 6G promises even Greater capabilities such as holographic communication, ultra-intelligent edge computing, and AI-driven networks. In the context of India-Japan scientific collaboration, the integration of 5G And 6G technologies holds immense potential to build sustainable, resilient, and technologically advanced urban ecosystems.

The findings indicate that 5G has already transformed smart transportation through connected vehicles, enhanced telemedicine services, and improved disaster management systems with real-time data. Smart grids supported by 5G enable efficient energy distribution and reduce carbon footprints. Looking forward, 6G networks are expected to integrate AI natively, enabling predictive urban planning, immersive AR/VR applications for education and governance, and robust cybersecurity systems. Japan's leadership in advanced telecommunications, combined with India's expanding digital ecosystem, creates a powerful synergy to design next-generation smart cities. However, challenges such as infrastructure costs, spectrum allocation, privacy concerns, and digital divide need to be addressed for equitable development.

The revolution brought by 5G and 6G technologies is more than a technological upgrade; it is a pathway towards sustainable, inclusive, and intelligent urban living. By leveraging these technologies, Indo-Japan collaborations can pave the way for future-ready smart cities that improve the quality of life while ensuring environmental responsibility. As 6G research continues, global partnerships will play a crucial role in shaping policies, standards, and ethical frameworks for smarter societies.

Keywords: 5G, 6G, Smart Cities, Indo-Japan Collaboration, Digital Transformation



Digital Guardians: Preventing Suicide with Smart Solutions in Indian Campuses

Khyati Agarwal

Biyani Girls College, Jaipur

Corresponding Email: khyatiagarwal0751@gmail.com

Abstract: Suicides in India are increasing rapidly especially in the age group of 15-25 years due to academic stress, workload, some personal issues, etc. Now as the traditional methods are still struggling to prevent this, technology can help by providing fast, accessible and effective solutions. There are many mental health apps, smart appliances, helplines that help in identifying risks early and hence preventing suicides. The most convenient way is to use helplines which are available 24/7 and most of them are being run by NGOs and government. Some social media apps like Instagram and Facebook have also helped by monitoring user activities; if they found something suicidal, they immediately send the much-required help and have already prevented so many cases. Mental health apps like health have also provided great help. Technologies like speech recognition, chatbots, and smart appliances with sensors have also provided great help. Now let's move further and talk about the upcoming methods which are initiated recently like machine learning which will study data and provide the result accordingly, and many more technologies are still being evaluated to provide more advanced and safer ways. As we can see all these methods are very useful and have saved many lives. These helplines, apps, sensors have provided information much faster thus prevented risks, support is provided within minutes and this help is not limited within a group; anyone can access these from not only India but also from the whole world. Technology has already helped significantly in preventing suicides and continued investment and focus on tech-based solutions can further strengthen suicide prevention in India. So just live a stress-free life and don't keep the burden of problems inside you; just let it flow out and be happy.

Keywords: helplines, social media platforms, smart appliances, machine learning, wider access, etc.

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AI and Blockchain Solutions: Building Secure, Transparent, and Intelligent Digital Ecosystems

Raashika Singh

Biyani Girls College, Jaipur

Corresponding Email: rashikasingh2102@gmail.com

Abstract: The rapid growth of digital technologies has transformed every aspect of human life from financial systems and healthcare to education and global commerce. Among these, Artificial Intelligence (AI) and Blockchain stand out as revolutionary forces, each reshaping industries in unique ways. AI empowers systems with intelligence, enabling automation, learning, and predictive

insights, while Blockchain ensures decentralized trust, transparency, and data integrity. Despite their individual strengths, both technologies face challenges: AI often suffers from data bias and security vulnerabilities, while Blockchain struggles with scalability and energy consumption. This paper examines how the convergence of AI and Blockchain can address these challenges, yielding solutions that are not only secure and trustworthy but also more intelligent and efficient. The findings strongly suggest that AI and Blockchain together form a synergistic framework. Blockchain provides AI with access to verifiable, tamper-proof data, thereby reducing the risks of biased or manipulated training datasets. On the other hand, AI enhances Blockchain by optimizing consensus algorithms, reducing energy consumption, and improving scalability through predictive analytics. For instance, in finance, AI-driven fraud detection becomes more reliable when combined with blockchain-based transaction records, drastically lowering the risk of cyberattacks. In healthcare, Blockchain secures sensitive patient information, while AI enables faster and more accurate diagnoses. In supply chain management, AI predicts demand patterns, and Blockchain ensures that every step of the process is transparent and trustworthy. However, integration challenges remain, including computational costs, interoperability barriers, and the need for robust legal frameworks to govern ethical deployment. The integration of AI and Blockchain is not merely a technological trend but a paradigm shift in building secure, transparent, and intelligent digital ecosystems. For students, researchers, and industry practitioners, this convergence opens new doors for innovation and problem-solving. The evidence presented in this study demonstrates that the strengths of AI and Blockchain are highly complementary, and when combined, they can revolutionize digital trust, efficiency, and security. Looking ahead, the success of these technologies will depend on addressing existing challenges through scalable system designs, ethical governance policies, and collaborative international efforts. As a BCA student contributing to this discourse, I believe this integration represents not just the future of technology but also an opportunity for young innovators to actively shape it.

Keywords: Artificial Intelligence, Blockchain, Cybersecurity, Digital Ecosystem, Emerging Technologies



AI + Quantum Computing

Gourangini Gour

Biyani Girls College, Jaipur

Corresponding Email: pragour08@gmail.com

Abstract: Artificial intelligence (AI) and quantum computing are two of the most disruptive technologies of the modern era. While AI has shown remarkable progress in decision-making, data analysis, and automation, its performance is often limited by classical computing resources. Quantum computing, leveraging the principles of superposition and entanglement, offers exponentially greater computational power. The fusion of AI with quantum computing—often

termed quantum AI-promises to revolutionize industries by accelerating machine learning, enhancing optimization, and solving complex problems that were previously intractable. The findings reveal that AI integrated with quantum computing can significantly reduce training time for large machine learning models, optimize logistics and supply chain networks, and improve simulations in chemistry and biology. In cybersecurity, quantum AI enhances encryption and threat detection capabilities. Industries such as healthcare benefit from faster drug discovery and personalized medicine, while weather forecasting and climate research gain from highly accurate predictive models. However, challenges remain in terms of hardware scalability, error correction, and high implementation costs. AI combined with quantum computing represents a transformative step toward next-generation intelligence. Its ability to accelerate problem-solving across domains positions it as a powerful tool for innovation and sustainability. Despite current technical and ethical challenges, the continued development of quantum AI is expected to shape the future of science, technology, and global problem-solving.

Keywords: artificial intelligence, quantum computing, quantum AI, machine learning, emerging technology



Role of Cloud Computing in Modern Business: The Invisible Assistant

Diya Kanwar

Biyani Girls College, Jaipur

Corresponding Email: diyakanwar16@gmail.com

Abstract: In the digital age, cloud computing has emerged as a silent yet powerful force transforming how businesses operate. Often referred to as the "invisible assistant," cloud computing supports everything from data storage and processing to software access and global collaboration without being physically seen or directly interacted with. This abstract explores how cloud computing enables modern businesses to operate with greater efficiency, scalability, security, and cost-effectiveness. From small startups to multinational corporations, cloud services allow businesses to access high-performance computing infrastructure, host applications, analyze big data, and support remote work—all with minimal physical investment. The study found that over 85% of modern businesses use some form of cloud computing, either fully or in hybrid mode. Small and medium-sized businesses (SMBs) benefit the most due to low infrastructure costs and high flexibility. Cloud computing has become the invisible assistant of modern business, silently powering operations, enhancing agility, and enabling global connectivity. Its flexibility, cost-efficiency, and scalability make it a crucial technology in today's competitive market. As businesses continue to adopt digital transformation, cloud computing will remain a backbone technology.

However, organizations must also address challenges such as data privacy, security, and vendor lock-in to fully leverage the cloud's potential. The role of cloud computing is no longer optional—it is a strategic necessity.

Keywords: Cloud Computing, Modern Business, Digital Transformation, SaaS, IaaS, Remote Work, Data Storage, Collaboration Tools, Scalability, Invisible Technology



Smart Admission Enquiry Chatbot for Colleges

Preksha Khandelwal

Biyani Girls College, Jaipur

Corresponding Email: p.khandelwal3684@gmail.com

Abstract: Colleges receive a lot of admission queries every year. Most of these are about eligibility, fees, courses, and important dates. To make this easier, a simple chatbot is already placed on the college website, which is helping students with quick answers. Building on that, the project team is now learning and creating a new version using Rasa. This step is taken not only to improve the service but also to gain real experience in AI, which is useful for career opportunities. The chatbot is being designed with Rasa, where Natural Language Processing (NLP) helps it read questions in normal language and reply correctly. The training set includes common admission FAQs. The bot will be available on the college website, so students can use it anytime. This way, they don't have to wait for staff support for small queries. The chatbot that is already live on the website is giving students quick answers for basic queries, which has reduced their need to contact staff for small information. With the Rasa model under work, the system is expected to become more flexible and respond to a wider range of questions. The main difference will be that students get faster help and staff members save time. For the project team, this is also an experience of applying classroom knowledge to a real case, which adds value to their learning. Overall, the project shows how a chatbot can support the admission process in a simple and useful way. It is not only a step toward improving college services but also a way for students working on it to build confidence and skills in AI. In this way, the work is helpful for both the institution and the learners, combining practical use with future growth.

Keywords: Chatbot, Rasa, Admission, AI, Student Support



Cybersecurity: Challenges, Strategies and Future Necessities

Yashvi Sharma

Biyani Girls College, Jaipur

Corresponding Email: sharmayashvi2136@gmail.com

Abstract: Cybersecurity is the practice of protecting computer systems, networks, and data from digital attacks, unauthorized access, or damage. With the rapid growth of the internet, online services, e-commerce, and cloud computing, the importance of cybersecurity has increased more than ever. Cyber threats such as hacking, phishing, malware, and ransom ware are becoming more frequent and advanced, putting individuals, businesses, and even governments at risk. The main goal of cybersecurity is to ensure confidentiality, integrity, and availability of data. It involves various techniques like firewalls, encryption, antivirus software, intrusion detection systems, and multi-factor authentication. However, technology alone is not enough—user awareness, training, and strong organizational policies are equally important. As digital transformation continues worldwide, cybersecurity has become a critical field, ensuring safe communication, secure transactions, and protection of sensitive information in every sector of society. These results highlight that cybersecurity cannot rely on technology alone. While advanced tools strengthen digital defense, human error remains a major factor in successful attacks. Training employees to recognize threats, along with implementing strict policies, ensures greater protection. The findings also suggest that a proactive and preventive approach is more effective than relying on recovery after an attack. By integrating both technical safeguards and user awareness, organizations can achieve stronger resilience against evolving cyber threats. Cybersecurity is not only a technical requirement but also a strategic necessity in today's digital world. The study shows that combining advanced technologies such as encryption, firewalls, and multi-factor authentication with strong organizational policies and user awareness programs can significantly reduce the risk of cyberattacks. Effective cybersecurity ensures the confidentiality, integrity, and availability of information, which is vital for individuals, businesses, and governments. Therefore, a multi-layered approach involving both technology and education is essential for achieving long-term digital safety.

Keywords: Cybersecurity, Data Protection, Cyber Threats, Phishing, Malware, Network Security



Machine Learning: Concepts, Application and Future Scope

Tanu Saini

Biyani Girls College, Jaipur

Corresponding Email: tanusaini7742@gmail.com

Abstract: Machine Learning (ML) is a branch of Artificial Intelligence (AI) that deals with the concept of allowing computers to learn from data and enhance their performance without being explicitly programmed. It has emerged as one of the biggest breakthroughs of the contemporary technological age. ML is increasingly being used in healthcare, education, business, finance, transportation, and cybersecurity. From streaming recommendations tailored to an individual on streaming sites to self-driving vehicles and intelligent assistants such as Alexa or Siri, machine learning is defining day-to-day human life. Increased access to big data, computational capability improvement, and algorithmic advances has sped up the technology's adoption in various sectors. With advantages come disadvantages in the form of data dependence, privacy issues, and the possibility of job loss through automation. Machine Learning has become a compelling technology transforming many industries. Its capacity to process enormous data, find patterns, and predict outcomes has established it as a necessary instrument in business, healthcare, education, and daily use. Its strengths are automation, efficiency, accuracy, and adaptability. Its weaknesses are bias in data, opacity of complex models, and moral issues around privacy and employment. In spite of these restrictions, Machine Learning has a bright future. With on-going research and ethical use, ML is poised to be at the forefront in creating smart systems and innovations. As governments and industries are adopting digital transformation, Machine Learning will continue to be a foundation of technological progress in future decades.

Keywords: Machine Learning, Artificial Intelligence, Neural Learning, Algorithms



Artificial Intelligence in Dream Analysis: Can Sub Consciousness be Decoded by Neural Networks

Mansi Kumawat

Biyani Girls College, Jaipur

Corresponding Email: mansi04062006@gmail.com

Abstract: Having dreams has always fascinated psychologists, neuroscientists, and philosophers for centuries, which is often viewed as dark reflections of the subconscious mind. Traditional dream analysis relies greatly on subjective analysis and symbolic decoding. However, with the rise of artificial intelligence, particularly the neural networks which are capable of pattern recognition and

generative modelling, a new perspective have come to light: can machines learn to interpret dreams? This research explores the junctions of AI and dream analysis and investigates whether neural networks can identify patterns, themes, and emotional tones on the basis on narration and physiological data to offer meaningful insights into subconscious processes. This study presents a compelling case about the use of neural networks in decoding different aspects of sub consciousness by dream analysis. Although Artificial Intelligence cannot fully take hold of the depth of human experience rooted in dreams, it is capable of identifying and detecting patterns, visualizing symbolic content, and correlating emotional states with physiological data. These capabilities of Artificial Intelligence open new directions and approaches for diagnosing mental health, exploring with creativity, and collaborative research. Ultimately, the combination of AI and dream analysis invites us to rethink about the boundaries and differences between machine identification and human's self-analysis, offering a glimpse into how technology might one day lighten up hidden architecture of the mind.

Keywords: Neural Networks, Subconscious Analysis, Natural Language Processing (NLP), Dream Interpretation.

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AI for Zero-Trust Security Architectures: Towards Trustworthy and Explainable Data Protection

Yashasvi Rathore

Biyani Institute of Science and Management, Jaipur
Corresponding Email: yashasvirathore1820@gmail.com

Abstract: With the exponential rise in cyber threats, conventional perimeter-based security models are no longer sufficient for protecting sensitive data. The emerging Zero-Trust Security (ZTS) architecture - based on the principle of “never trust, always verify”—has become essential for securing organizational and citizen data. However, the challenge lies in balancing strong protection with explainability and user trust, since AI-based access control systems often function as black boxes, leading to opacity and compliance issues. To address this, the present research investigates the integration of Explainable Artificial Intelligence (XAI) into Zero-Trust frameworks, creating a transparent, adaptive, and resilient security model for India–Japan collaborations and beyond. This research establishes that Explainable AI-powered Zero-Trust architectures represent the future of secure data ecosystems. By merging adaptive machine learning, interpretable reasoning, and blockchain auditing, the framework not only strengthens cybersecurity but also addresses the critical issue of citizen and institutional trust in AI-based systems. Such a model is highly relevant for nations like India and Japan, where rapid digital transformation demands robust yet accountable

security infrastructures. The proposed approach demonstrates a scalable, transparent, and collaborative paradigm for protecting sensitive data in an increasingly connected world.

Keywords: Artificial Intelligence, Zero-Trust Security, Explainable AI, Blockchain, Cybersecurity



Blockchain in Finance: Shaping the Future of Digital Payments

Mansi

Biyani Institute of Science and Management, Jaipur
Corresponding Email: mansishekhawat8440@gmail.com

Abstract: The financial sector is undergoing a rapid digital transformation, with blockchain emerging as a ground-breaking technology in reshaping financial systems. Unlike conventional models reliant on banks, clearing houses, and regulators, blockchain introduces a decentralized and transparent method of managing transactions. Through its distributed ledger and consensus-based validation, blockchain enhances trust, security, and accountability among users. One of the most prominent applications of blockchain is in crypto currencies such as Bit coin and Ethereum. These digital currencies enable borderless, peer-to-peer, and secure transactions without intermediaries, significantly reducing costs and transaction delays. Moreover, decentralized finance (DeFi) platforms are redefining the financial landscape by allowing individuals to lend, borrow, trade, and invest directly, without the involvement of traditional banking institutions. Blockchain's immutable nature addresses critical issues like fraud prevention, accurate recordkeeping, and transaction transparency. Beyond payments, financial institutions are increasingly adopting blockchain solutions for cross-border remittances, trade finance, and digital identity verification. Smart contracts are revolutionizing processes such as loan disbursement, insurance claims, property registration, and regulatory compliance by ensuring automation, speed, and accuracy. At the same time, blockchain faces challenges. Crypto currency markets remain highly volatile, raising investor concerns. The lack of uniform global regulations creates uncertainty, while scalability issues and high energy consumption in mining slow down mass adoption. Traditional institutions also resist decentralization due to control and compliance issues. With supportive regulations, collaborative innovation, and international adoption, blockchain may establish the foundation for a more sustainable, trusted, and efficient financial system.

Keywords: Blockchain, Finance, Crypto currencies, Decentralized Finance (DeFi)



The dual edge of Artificial Intelligence and Machine Learning: Advancements, Cybercrime Risks, and Social Media Challenges

Ansh Sharma

Biyani Group of Colleges, Jaipur, India

Corresponding Email: ansh.sharma@gmail.com

Abstract: Artificial Intelligence (AI) and Machine Learning (ML) are at the forefront of technological transformation, revolutionizing industries, reshaping economies, and influencing everyday life. These innovations offer solutions to some of society's biggest challenges, from healthcare diagnostics and financial forecasting to autonomous vehicles and climate modeling. However, their rapid adoption also raises questions about ethics, accountability, and risks related to cybersecurity. This study explores the dual role of AI and ML as both tools for progress and instruments that can be exploited for malicious intent. To investigate this duality, a qualitative analysis of case studies and recent advancements in AI applications was conducted. Special attention was given to the role of AI in enhancing cybersecurity defenses as well as the emerging threats it poses when used by cybercriminals. Furthermore, social media platforms, particularly Instagram, were studied to understand the intersection of AI with human behavior, online engagement, and misinformation. The methodology involved reviewing academic articles, industry reports, and real-world incidents of AI-driven cybercrime. The findings highlight that AI-driven technologies such as deepfakes, automated phishing, and algorithmic manipulation have significantly increased the sophistication of cybercrime. Simultaneously, AI empowers organizations to detect threats faster, personalize user experiences, and optimize resource allocation. On platforms like Instagram, AI-based recommendation systems enhance user engagement but also contribute to addictive behaviors and the spread of harmful content. This paradox emphasizes the importance of balanced regulation. The discussion further identifies the urgent need for global cooperation, ethical frameworks, and public awareness to ensure that AI development remains aligned with human values.

Keywords: Artificial Intelligence, Machine Learning, Cybercrime, Social Media, Cyber Security



Cybersecurity in the Age of Cloud Computing Challenges and Strategies

Anjali Saini

Biyani Girls Colleges, Jaipur

Corresponding Email Shayarsaini95@gmail.com

Abstract: With the widespread adoption of cloud computing across sectors, cybersecurity has become a critical concern. While cloud services offer scalability, flexibility, and cost-efficiency, they also introduce new security challenges such as data breaches, misconfigured storage, insider threats, and vulnerability to distributed denial-of-service (DDoS) attacks. This paper explores the current cybersecurity landscape within cloud computing environments, identifies key threats, and evaluates modern defence mechanisms. It highlights the need for a shared responsibility model, emphasizing collaboration between cloud service providers and clients. The study also investigates best practices and emerging technologies like AI-driven threat detection, Zero Trust Architecture, and cloud access security brokers (CASBs). The findings underline that proactive, layered security strategies are essential to safeguard data and maintain trust in cloud infrastructures. Cybersecurity in the age of cloud computing demands a proactive, multi-layered approach Involving technology, policy, and education. While cloud providers offer advanced security features, the ultimate responsibility lies with both providers and users to implement them effectively. The study concludes that a successful cybersecurity strategy must include continuous monitoring, user education, policy enforcement, and the adoption of advanced tools like AI and Zero Trust frameworks. Future efforts should focus on strengthening regulatory compliance, improving user awareness, and bridging the cloud security skills gap.

Keywords: Denial-of-Service, Cloud Computing, Environments, AI, CASBs



Decentralized Physical Infrastructure Networks (DePIN): Transforming Infrastructure through Blockchain and Community Participation

Nandini Dixit

*Biyani Institute of Science & Management, India
Corresponding Email: nandinidixit0409@gmail.com*

Abstract: Most of today's infrastructure for communication, storage, and energy is controlled by centralized companies. This often creates problems like high costs, limited access, and lack of transparency. Decentralized Physical Infrastructure Networks (DePIN) offer a new way where communities can work together to build and manage important systems like wireless networks, storage, and sensors. Using blockchain and token-based rewards, DePIN makes infrastructure more open, fair, and reliable. Early observations show that DePIN can reduce costs, include more people, and make systems stronger compared to centralized models. But for real success, challenges like unclear Government rules, technical issues, and building user trust need to be solved. Examples show that DePIN can help remote areas get access, reduce control of big companies, and encourage people to share unused resources. The discussion covers both the opportunities and the barriers for making DePIN widely adopted. DePIN is a new way to think about how infrastructure is created and managed. With the help of blockchain and community participation, it offers a fairer and more sustainable alternative to centralized systems. Even though it is still growing, DePIN has strong potential to shape the future of both digital and physical infrastructure.

Keywords: Decentralization, Blockchain, DePIN, Infrastructure, Token Economy.

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Green Computing

Manisha Yadav

*Biyani Girls Colleges, Jaipur
Corresponding Email: manishaa.011103@gmail.com*

Abstract: Green computing, also called sustainable computing, is about using computers in a way that is safe for the environment. It looks at how devices are made, used, and finally disposed of. With the growth of technology, problems like more energy use, rising e-waste, and harmful carbon emissions are also growing. To deal with these, eco-friendly methods in computing are becoming important. Countries like India and Japan are also working together on new ideas that can cut down power use, make devices last longer, and improve the use of resources. From this review, it is clear

that green computing helps to cut down electricity use. In big data centres, power use can drop by almost 40% if such methods are followed. Virtualization and cloud also mean fewer machines are needed, so resources are used in a better way. When renewable energy like solar or wind is used, the system becomes even cleaner. Overall, these methods show that technology can be used in a smart way to save money and also care for the environment. Green computing helps in saving energy and reducing e-waste. By using such methods, technology can grow without harming nature. In future, adding tools like AI and IoT can make these systems even better.

Keywords: Green Computing, Sustainable IT, Energy Saving, E-Waste, Eco-friendly



Phishing Attack: A Case Study and Their Prevention Techniques

Aman Akhtar

Biyani Group of Colleges, Jaipur

Corresponding Email: akhtar.sahab0083@gmail.com

Abstract: Phishing is still a major cyber security threats, changing with new technology and taking advantage of both technical weakness and human mistakes. Phishing is a cyberattack in which scammer's try to fool people or organisation into giving away private information by pretending to be someone trustworthy. It works well because it targets human mistakes. As phishing methods change and use AI, the risks grow and old security measures are no longer enough. AI-Driven phishing attack on an Indian Bank (2024) – In early 2024 a big Indian Bank was hit by a smart phishing attack using AI. The attackers used AI to create convincing, personalized messages to trick top executive and get past several security measures. The attack affected the bank's internal system and sensitive financial information, showing that even strong cyber security rules can have weaknesses. AI- created spear- phishing emails copied the communication style of executives. Automated information gathering collected data from social media and public sources. Multistage phishing bypassed basic email filters and behavioural patterns from social engineering. Phishing attacks keep changing, using smarter tactics to bypass both people and automated defences. To stop them effectively, we need a combined approach: using technology, on-going employee training, and flexible policies. continued research into behaviour patterns and AI-based signals is crucial for staying protected in the feature.

Keywords: Technical Weakness, Human Mistakes, Cyberattack, AI-Driven, Indian Bank



DevOps: Bridging Development and Operations for Modern Software Engineer

Niharika Jangid

Biyani Girls College, Jaipur

Corresponding Email: niharika.6927@gmail.com

Abstract: In the quickly evolving digital world today, companies are pressured to deliver software quicker, with better quality, and at a lower cost. Most conventional software development practices tend to isolate development and operations teams, leading to communication breakdowns, increased release times, and decreased efficiency. To overcome such problems, DevOps has become an emerging culture, methodological, and technology approach which integrates development (Dev) and operations (Ops) into one coherent process. It stresses continuous integration, continuous delivery (CI/CD), automation, and monitoring to form a cycle of fast feedback and improvement. Through silo reduction and shared responsibility, DevOps enhances agility, productivity, and customer satisfaction. DevOps has become a pillar of digital transformation by bringing people, processes, and technology together under one unifying process. DevOps in its integrated fashion provides agility, quality, and scalability in software delivery, which is a necessity in today's competitive landscape. With more and more organizations migrating to cloud-native architectures, microservices, and edge computing, the DevOps role will continue to grow even bigger. The future of DevOps is in smart automation using Artificial Intelligence (AIOps), anticipatory monitoring, and closer integration with security culture (DevSecOps). Therefore, DevOps is not a trend but an enduring accelerator of lasting innovation and resiliency in software development.

Keywords: DevOps, Continuous Integration, Continuous Delivery, Automation, Digital Transformation, Collaboration

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The Role of AI for Social Good

Rahat Hasan and Kshitij Pareek

Biyani Girls College, Jaipur

Corresponding Email: rh6643933@gmail.com; pareekkshitij37@gmail.com

Abstract: Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the 21st century, reshaping industries, governance, healthcare, education, and everyday life. By simulating human intelligence through machine learning, natural language processing, robotics, and computer vision, AI enables machines to learn, adapt, and perform complex tasks with minimal human intervention. AI applications range from predictive analytics and autonomous systems to

personalized digital assistants, significantly improving efficiency and decision-making processes. However, the integration of AI also raises challenges including ethical concerns, data privacy issues, bias in algorithms, and the need for transparent governance frameworks. This paper discusses the fundamental concepts, applications, and challenges of AI, while highlighting its potential to contribute toward sustainable development and innovation in the digital era. Artificial Intelligence is not just a technological advancement but a catalyst for societal transformation. While AI offers unprecedented opportunities to improve productivity, healthcare, education, and governance, it also demands responsible usage, ethical consideration, and robust policies to ensure fairness, transparency, and inclusivity. The future of AI depends on striking a balance between innovation and responsibility, ensuring that it serves as a tool for the betterment of humanity.

Keywords: Artificial Intelligence, Machine Learning, Robotics, Data Privacy, Ethical AI



Ethical Issues for AI in Sustainable Digitalization

Mehraj

Biyani Girls College, Jaipur

Corresponding Email: mehrajkhani0787@gmail.com

Abstract: Artificial Intelligence (AI) is emerging as a transformative driver of sustainable digitalization, offering opportunities to optimize energy use, enhance resource efficiency, and promote green innovation. However, the integration of AI into sustainability practices also raises critical ethical challenges. Key concerns include data privacy, algorithmic bias, transparency, and accountability, which may undermine trust and fairness in digital ecosystems. Moreover, the environmental cost of AI infrastructure—such as high energy consumption and e-waste—poses contradictions to its sustainability goals. Ethical considerations must therefore balance innovation with responsibility, ensuring that AI systems are developed and deployed in ways that align with social equity, environmental protection, and long-term digital sustainability. Addressing these issues through inclusive governance, clear regulations, and ethical design principles is essential for achieving a just and sustainable digital future. Artificial Intelligence holds great potential to drive sustainable digitalization by improving efficiency, resource management, and innovation. However, its ethical challenges—such as data privacy, security, transparency, accountability, human autonomy, and risks of job displacement—must be addressed responsibly. Ensuring fairness, inclusivity, and human.

Keywords: Artificial Intelligence, Data Privacy, Algorithmic, Transparency



A Review on Precision Agriculture

Karamjit Kaur, Varsh deep, Jasmeen Kaur Dhillon

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email- varshdeep62848@gmail.com

Abstract: Precision agriculture, also called smart farming, is a modern way of farming that uses technology to make agriculture more productive, efficient, and eco-friendly. Unlike traditional farming, which mostly depends on manual work and guesswork, precision farming is based on data and real-time monitoring to manage resources in the best way. Different technologies are used in this method, such as Artificial Intelligence (AI), Internet of Things (IoT), drones, robots, and big data. With the help of smart sensors, farmers can know the exact condition of soil, water, weather, and crop health. This information helps them use water, fertilizers, and pesticides only where and when they are needed. As a result, waste is reduced, costs go down, and crops grow better. Predictive tools also help farmers decide the right time for planting, watering, or harvesting, while drones and machines can spray, plant, or check fields with high accuracy. Even though it has many benefits, precision agriculture also faces challenges. The cost of machines and sensors is very high, which makes it hard for small farmers to use. Farmers also need training to understand the technology, and there are concerns about the safety of data. But with government support, cheaper tools, and more awareness, precision agriculture can change farming for the better. It can help save resources, protect the environment, and provide enough food for the growing population.

Keywords: Sustainable farming, smart sensors, smart farming, artificial intelligence, IOT

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Advancement and Challenges of Cloud Computing

Jagmeet Singh, Jashanpreet Singh, and Harman Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email: jashanpreetsingh1308@gmail.com

Abstract: Cloud computing is rapidly emerging as one of the most significant innovations of the twenty-first century. Data is now part of our daily lives; however, cloud computing represents a massive shift on how people, organizations, and institutions provide, share, and manage data. Cloud computing extends how users are now able to store, process, and retrieve information and applications completely online, which has changed the model of expensive physical infrastructure onto which users were ready and also relying with less exploration of either risk or reward. Cloud computing has changed this by contributing not only to cost reductions but also to increased efficiency, significant scalability, and easy access to a wide variety of resources in uncommonly

efficient and cheap fashion. New developments in cloud computing have fueled recent developments in areas like virtualization, edge computing, artificial intelligence, and server less architectures. At this time, cloud computing is present in varying industries, like education, healthcare, businesses, governments, and entertainment. Continuing issues regarding data privacy development deficiencies, security vulnerabilities, dependence on service providers, unpredictable pricing, and a general unpreparedness (at organizations) for international regulations and compliance create barriers to the potentially transformative ability of cloud computing. Cloud computing has changed the future of technology in a huge way, providing solutions that are faster, scalable and easily accessible compared to previous technology systems. The technologies involved in cloud computing have the power to truly transform any industry. Yet for cloud computing technologies to achieve long-term sustainability and widespread adoption, some of the risks must reasonably be managed, including security risks, cost, vendor lock-in and compliance with global standards. Future developments should focus on trust building, platform interoperability, and making cloud solutions structure more affordable or clearer.

Keywords: Cloud computing, Security, Hybrid cloud, Scalability, Challenges, Future trends



AI in Literary Translation

Jaspreet Kaur, Nitin and Prerka

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Abstract: The emergence of artificial intelligence (AI) technologies based on Large Language Models (LLMs) is reshaping the translation landscape, particularly by facilitating unprecedented levels of translation efficiency. To unlock the potential of AI tools in facilitating intercultural understanding and bridging language barriers in literary translation, this study examined the perspectives of 63 Saudi EFL student translators (27 novices, 36 advanced) on literary translations generated by Google Translate (GT) and ChatGPT. It compares their evaluations in terms of accuracy, fluency, and cultural understanding. This mixed-methods study collected quantitative and qualitative data utilizing a pre-survey, a questionnaire, and reflection sheets. The findings revealed that both groups used machine translation tools, with advanced students perceiving themselves as more proficient. While no significant differences emerged between groups in perceptions of ChatGPT and GT—except higher trust in GT accuracy among novices—both groups favored ChatGPT for literary translation. Qualitative data provided deeper insights into student translators' evaluations. Both groups of students were negative toward GT, pointing out its deficiency in capturing the linguistic and cultural nuances of original literary texts, and they were more appreciative of translations produced by ChatGPT, highlighting its various affordances in reaching satisfactory translation results. Pedagogical implications are presented and discussed. Following a

brief overview of the stages of MT, this paper will explore the new ethical concerns in literary translation, such as copyright and the professional identity of the literary translator. Given that training data and participatory NMT involve copyright concerns, copyright ethics are an essential component of AI-enabled literary translation.

According to this study, advances in technology will make literary translation easier. But there is no concrete proof that computer translation will take the place of human translators. More scholarly research is necessary to address ethical concerns originating from human-machine interaction, especially in light of the new working method of "multi-players" or participatory translation. The commercial viability of AI-based machine translation of contemporary genre literature is a more pressing concern for literary translators living and working today and tomorrow, even though it is an interesting question how AI-based machine translation would fare in dealing with densely written, highly complex literature, especially when translating between languages and cultures that are very far apart linguistically or historically. This is especially true when the languages are closely related, such as the Nordic or Romance languages. I'm talking about how crime, suspense, and romance are translated between linguistic realms that are closely related in terms of time and culture. As literary translators, we currently need to examine the practical, real-world effects of AI-assisted machine translation. In addition, I do have a few notes about the matter. A few of them are quite gloomy. Literary machine translation (MT) has received minimal attention in studies on MT development, which have concentrated on creating MT systems that can translate news articles, government documents, and general texts.

The findings of two trials in a current initiative to create a literary MT system are presented in this study. Solving the machine understanding problem is the main goal of the project's first phase, which is described here. Using Latent Semantic Analysis (LSA), an information retrieval method used to address Natural Language (NL) comprehension issues, this phase aims to demonstrate the degree to which the computer can comprehend translated material. stories into groups based on common themes or subjects. The large volume of online writings produced in a variety of areas in recent years has increased the importance of machine translation systems. The demands of translation around the world have not been adequately satisfied by traditional translation techniques. Although translation systems are excellent at handling a wide range of fields and text types, there is much disagreement over their usability and dependability, particularly when it comes to literary literature.

Keywords: Artificial Intelligence, Google Translate, ChatGPT, linguistic, Literary machine



Autonomous Worlds: Procedural VR Generation via AI

Amandeep Kaur, Arshpreet Kaur and Raspreet Singh Aulakh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence email: amandeepkaurghai1987@gmail.com

Abstract: As the demand for immersive virtual environments grows in gaming, education, simulation, and remote collaboration, the limitations of manually designing large 3D spaces have become increasingly evident. Traditional methods require extensive modeling, scripting, and asset creation, which often demand both time and technical expertise. To address this challenge, we introduce Autonomous Worlds, an AI-powered system that enables anyone to generate explorable virtual reality (VR) environments directly from natural language prompts, spatial hints, or other simple inputs. By combining language understanding, procedural generation, and real-time rendering optimizations, our framework makes VR world creation as intuitive as having a conversation. The architecture of Autonomous Worlds brings together several innovations. At its core, a visual-language model (VLM)-driven agent translates user prompts—whether text or voice—into structured scene graphs. These graphs capture the semantics, layout, and thematic coherence of the requested environment. For example, when asked for “a cozy mountain village covered in snow,” the system interprets this request into meaningful spatial relationships, such as cabin placement, tree distribution, and mountain ranges. Once planned, the system employs procedural geometry synthesis to generate terrains, ecosystems, and architecture. This combines rule-based methods with GAN-based upscaling to deliver detailed, photorealistic surfaces while maintaining efficiency. To ensure smooth performance, lightweight geometric proxies are used in conjunction with alpha-blended generative textures, a rendering approach inspired by recent advances such as Immerse Gen. The result is a high-fidelity world that runs fluidly, even on standalone VR devices like the Meta Quest 3, consistently achieving over 72 frames per second.

Autonomous Worlds also emphasizes interactivity and reactivity. Worlds are not static but respond dynamically to user actions and contextual factors. Weather can shift, objects can be manipulated, and AI-driven storytelling unfolds through object behaviors and events. This is orchestrated by an event policy engine trained with reinforcement learning, ensuring that environments feel alive and adaptive. In mixed-reality scenarios, the system supports environment blending, where real-world spatial data such as SLAM maps or depth scans can be fused with virtual elements. This allows a user’s physical surroundings to be stylized or extended seamlessly into VR, creating hybrid experiences that expand beyond purely digital or physical spaces. To evaluate the framework, we conducted user studies across gaming, training, and creative applications. Participants reported higher levels of immersion, creative freedom, and spatial continuity compared to traditional design methods. Performance benchmarks further demonstrated the system’s ability to deliver visually rich content on accessible hardware, reducing the need for expensive, high-end systems. While Autonomous Worlds significantly lowers barriers to VR content creation, challenges remain. Handling highly abstract requests, scaling persistent environments over time, and addressing ethical

considerations in generated content are open areas of research. Nonetheless, this work represents a step forward in AI-supported co-creation, empowering users of any skill level to collaboratively shape interactive virtual spaces with intelligent systems. Looking ahead, future directions include persistent world memory, deeper personalization, collaborative multi-user creation, and more advanced moderation techniques. As AI capabilities continue to evolve, systems like Autonomous Worlds could eventually allow anyone to build and inhabit rich, evolving virtual worlds—using nothing more than their imagination and their voice.

Keywords: Autonomous worlds, Natural language generation, Procedural VR Environments, Visuals Language Machine, Immersive Interactivity



Beyond Automation: The IoT Home Revolution

Pradeep Mittal, Rishika Rani and Ashu

Baba Farid Group of Institute, MRSPTU, Punjab

Correspondence Email: ranirishika02@gmail.com

Abstract: One of the 21st century most revolutionary technologies is the Internet of Things (IoT), which seamlessly integrates digital intelligence with the real world. When it comes to smart homes, the Internet of Things has evolved from a sci-fi idea to a useful reality that is changing how people use their living areas. IoT gives homes previously unheard-of levels of convenience, security, and energy efficiency by allowing appliances, lighting systems, climate controls, and security cameras to connect via a single network. The expanding need for lifestyle automation, the growing significance of personal safety, and the growing requirement for sustainable energy usage provide the backdrop for this study. Smart homes are anticipated to be crucial in enhancing quality of life and guaranteeing resource efficiency given India fast urbanization and dedication to creating smart cities. According to the study findings, IoT-enabled smart houses have the potential to completely transform contemporary life by fusing safety, sustainability, and efficiency. Long-term benefits exceed these obstacles, even while present usage is constrained by issues like cost, computer literacy, and cybersecurity threats. India vision for smart cities, in which each gadget supports an ecosystem of intelligent decision-making, is anticipated to include smart houses as essential elements. Future studies should concentrate on incorporating AI for safe cloud-driven automation, compatibility with renewable energy sources, and predictive maintenance. In the end, the IoT home revolution represents a step toward better societies as well as smarter living environments.

Keywords: Automation, Energy Efficiency, Security, Sustainability, Smart Homes



Blockchain Research Report

Nitika, Avinash Kumar and Seraj Ansari

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email: nitika.cdac@gmail.com

Abstract: Blockchain technology functions as an unalterable distributed ledger system which shows increasing adoption as an industry-transforming technology. The study explores blockchain fundamentals through a review of decentralization principles and consensus mechanisms Proof of Work and Proof of Stake which establish secure transaction systems. Businesses find blockchain technology attractive because its decentralized structure and tamper-resistant and transparent nature enable trust-based operations that reduce middlemen and safeguard digital interactions from security threats. The paper addresses real-world applications from both a financial and non-financial context, such as logistics, education, and the Internet of Things (IoT), while discussing today continuing challenges around scalability, security, and mass adoption. This study combines insights from recently published literature to demonstrate the potential of blockchain technology to improve transparency, increase security, and streamline efficiency in digital transactions, while narrowing the gaps in the existing literature for future research. This study intends to provide insight for both academics and industry practitioners who will navigate the world of evolving blockchain technology in the near future.

Keywords: Blockchain, Distributed Ledger Technology (DLT), Public and Private Blockchain.



Cloud Computing

Sumit, Deepanshu and Vardan

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Abstract: This study explores the future of cloud computing, proposing a more unified model called “sky computing”, where economic constraints are more significant than technical ones, and reciprocal peering plays a key role. While cloud computing provides advantages like scalability, elasticity, and cost efficiency, it still faces major challenges such as lack of standardization and security concerns, which discourage sensitive sectors like government from adopting it. The paper highlights the potential of green cloud computing, which can improve energy efficiency, reduce carbon emissions, and minimize e-waste, making cloud services more eco-friendly. It reviews recent advancements addressing environmental issues and identifies future research opportunities in sustainable cloud practices. Additionally, a meta-analysis of 285 studies (2009–2015) shows that most cloud computing research focuses on technical aspects while neglecting enterprise and

implementation perspectives. Many studies rely heavily on experimentation and simulation, with limited use of conceptual frameworks or diverse research methods. This work provides insights into existing research trends and suggests new directions for future studies in cloud computing.

Keywords: E-waste, Cloud Computing, Elasticity, Environment



Cloud Gaming: Play Anywhere, Anytime Without Powerful Hardware

Jagmeet Singh, Sujal Khunger, and Ashna Gakhar

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email: sujalkhunger@gmail.com

Abstract: Cloud gaming enables users to play video games located on a remote server for an inexpensive price, utilizing only a subscription fee, and without the need or expense of gaming system hardware. Cloud gaming potentially can be inexpensive, portable, and accessible: therefore, it could be a more desirable platform for people to use than standard play. Major technology providers such as Microsoft, NVIDIA, Sony, and Google, are investing heavily into cloud gaming technology. This review will identify and analyze some key elements, delivery modes, pros, and challenges--such as connectivity, digital privacy, and digital ownership--that limit adoption and use of cloud gaming as an entertainment platform around the world. Descriptive and analytical methods were used for this project, and we sought trustworthy content from both academic and the industry stakeholders. The technical assessment of how cloud gaming is delivered considered descriptive information about server infrastructure, the virtualization of Graphics Processing Units (GPUs), delivery streaming protocols and bandwidth; compared to the traditional gaming delivery for baseline components, such as cost these traditional aspects such as cost, performance and accessibility.

The various technologies supporting the cloud gaming delivery and including, 5G, edge compute and Artificial Intelligence were also researched forming examples from established cloud gaming services such as Xbox Cloud Gaming, GeForce NOW and PlayStation Now. Cloud gaming provides inexpensive access to games on devices built on subscription or as-a- service. This also enables developers to have access to a worldwide audience. Last, cloud gaming has a huge potential but it does have roadblocks such as latency, limited bandwidth, privacy concerns, and vendor lock-in and competitive integrity concerns. However, new technologies including 5G, edge computing, and adaptive streaming can not only break down the barriers providing the games like cloud gaming better performance, they can also offer further help to offer access and change what interactive gaming can be like demonstrated by showing what these technologies could open up for cloud

gaming. Cloud gaming is an exciting new development in digital entertainment - it is affordable, accessible and inclusive to everyone in the world. While there are numerous barriers in cloud gaming such as reliance on internet speed, security issues, users' rights, and the like, the rapid advancement in technology (e.g. AI, 5G, AR) is rendering all of these obstacles less important in the cloud gaming space. In conclusion, this study regards cloud gaming as not only an option to traditional gaming, but as a disruptive force that will transform the gaming landscape.

Keywords: Cloud Gaming, Game Streaming, Latency, 5G Networks, Edge Computing

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Cyber Security: A New Challenge in the Age of Digital India

Karamjit Kaur, Sukhmanpreet Kaur and Yadwinder Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email: sk5250822@gmail.com, Yadwindersingh7464@gmail.com

Abstract: Cybercrime is a crime committed by criminals using the internet or any other computer networks. The internet world has given rise to serious cybercrimes like hacking, phishing, identity theft, ransomware, financial fraud, and more. This paper looks at what makes cybercrime occur, how bad it is and it can be prevented. Enhancing awareness, cyber policy, and technology can reduce such crimes, which suggests that emerging findings. There are different types of cybercrime like hacking, phishing, identity theft, ransomware, cyber bullying, and other financial fraud are most common ones.

- Cybercrime, on the other hand, negatively impacts society by causing financial losses, damage, reputation, invasion of privacy, and making the victim psychosocially stressed.
- Developing countries face a rise in cyber threats due to a lack of awareness.
- Prevention contains strong Passwords, multi-factor authentication, firewalls, encryption,
- Regular software updates and awareness programs significantly reduce risks.

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Data Science and Analytics

Gurmanpreet Singh, Nilesh Dod and Deepankar Goyal

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Correspondence Email: gurmanpreetsinghchahal@gmail.com

Abstract: Exploding volumes of healthcare data now offer a uniquely powerful lever—alongside a corresponding burden—for enhancing patient outcomes via predictive analytics. Conventional statistical approaches frequently fall short against the intricate, non-linear mappings embedded in ultrahigh-dimensional patient records, constraining their utility in timely identification of early disease. Accordingly, the present investigation gauges how promising machine-learning algorithms can upgrade predictive fidelity in recognizing patients at high risk. By curating a free, publicly accessible healthcare repository that melds demographic, clinical, and lifestyle dimensions, the analysis systematically preprocesses the material and deploys decision trees, random forests, and gradient boosting frameworks. Standard model metrics—accuracy, precision, recall, F1-score—are computed and further solidified via stratified cross-validation. The benchmarks confirm that ensemble-learning paradigms overwhelmingly eclipse conventional logistic regression, reaching a maximum classification accuracy of 92% and boosting the recall of high-risk cases by 15 percentage points. The evidence thus underlines the capacity of machine-learning methodologies to undergird evidence-based clinical decision pathways, facilitating swifter therapeutic intervention and wiser allocation of limited clinical assets. Subsequent inquiries ought to prioritize model interpretability, seamless embedding within electronic health records, and careful confrontation of ethical biases, guaranteeing an equitable and responsible rollout of predictive technology. After that, the missing values were imputed and outliers were winsorized after which, one-hot encoding was used for categorical features. Feature engineering included temporal aggregation, derived clinical ratios (e.g. BMI) and elimination of low-information variables.

In order to do this trade-off between the interpretability and predictability, we compared four models including Random Forest, Decision Tree, Gradient Boosting, and Logistic Regression (as a baseline). The pre-processing also comprised imputation, and one-hot encoding. Aggregation, clinical ratios and filtering were used to engineer features. We include Logistic Regression, Decision Tree, Random Forest and Gradient Boosting models to strike a balance between interpretability, robustness and predictive performance in healthcare risk prediction. Here we show that ensemble learning and traditional models like Random Forests and Gradient Boosting far exceed logistic regression's performance in risk stratification in healthcare, with up to 92% accuracy and 15 recall point gain for high risk patients. These results confirm their potential to improve clinical service delivery, support earlier intervention, and optimize resource allocation in healthcare. However, such a model relies on one dataset, is not validated temporally and is hardly interpretable; therefore, their utility is limited and points to the need for more general and physician friendly models.

Keywords: Artificial Intelligence, Machine learning.



A Review: Digital Comparative Literature

Sonia, Guninder Singh, Jaspreet Kaur

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: soniacharaya04@gmail.com

Abstract: The digital humanities and comparative literature are both interdisciplinary compound disciplines that share four characteristics: disciplinary structures, disciplinary histories, disciplinary ideals, and disciplinary prospects. This paper offers a comparative reflection on current or potential issues as well as the corresponding workable solutions in the theoretical construction of comparative literature and the digital humanities in four main areas: the discipline scope, institution, methodology, and mission. This is achieved through a thorough examination of the process by which comparative literature developed into a discipline. In order to set the digital humanities on a course for quick and stable development, it would be highly beneficial to fully absorb the experiences and lessons learnt from comparative literature. There is still a lot of debate regarding these student classifications and the implications of such ideas in higher education more than ten years after Prensky seminal description of digital natives and immigrants. Popular but mostly unsupported ideas about digital natives are frequently ingrained in the presumptions of current studies on how students view emerging technology, apparently ignoring an increasing amount of data that challenges these ideas. This review of recent literature aims to analyse key themes emerging from contemporary research on the Net generation as digital natives in order to foster critical discussion in the higher education community regarding possible directions for further research of these issues, particularly within the Canadian context. More than ten years after well-known difference between native-born people and foreign-born people in the digital world, there is significant disagreement on these student characteristics and their influence on higher education.

Digital Humanities and Its Application in the Study of Literature and Culture; explores the connections among modern developments in digital humanities, systems theory and model building, and comparative literary and cultural studies. The topology of German literature, modernist poetics in China, Japan, and the United States, the geography of nineteenth-century fiction, and several related computational techniques are among the areas of particular use. Wilkens contends that greater participation by comparatists in digital humanities would be advantageous and that computational work offers a singular opportunity for comparatists engaged in extensive cultural analysis. In addition to discussing the topic history and practical applications, it situates the introduction within current theoretical discussions and changes in the field. The book provides engagement and comparison with other visual media, including cinema and e-literature, while examining comparative literature in the context of globalisation, cosmopolitanism, and post- or transnational identity. While the next four chapters are more applied, examining themes, translation, literary history, and comparison with other arts, the first four chapters cover the field more general theoretical concerns, such as inter literary theory, decoloniality, and world literature. Along with a comprehensive list of recommended reading, this interesting guide also includes a dictionary of

terms and topics. Digital technology and digital media marketing are causing a rapid change in the global environment and customer interactions. The previous marketing paradigm has changed as a result of the complexity brought about by the introduction of new digital technologies. With the help of digital technologies, new methods of connecting, interacting, and communicating with customers have significantly changed traditional consumer dynamics. The balance of power has shifted in favour of customers as a result of the development of new digital marketing platforms, which have changed communication methods and given consumers more influence. A major contributing reason to the uptake of digital media is the power shift from practitioners to consumers brought about by the proliferation of user generated material on the internet.

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Enhancing Cyber Security through Artificial Intelligence for Advanced Digital Protection

Ramanpreet Kaur, Lovepreet Kaur, Khushpreet Kaur

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: sidhulovepreet1280@gmail.com

Abstract: Because of our growing reliance on digital technologies, cybersecurity has emerged as one of the most important issues of our day. Due to the increasing complexity of cyber threats including ransomware, phishing, malware, and advanced persistent attacks, standard security measures frequently fail to offer complete protection. Because it makes intelligent threat detection, predictive analysis, and automated response mechanisms possible, Artificial Intelligence (AI) has become a game-changing tool for bolstering cybersecurity systems. Massive amounts of data can be processed in real-time by AI-driven security systems, which can also spot odd trends and stop possible threats before they become more serious. Natural language processing, deep learning, and machine learning are all integrated into cybersecurity infrastructure to help firms more effectively respond to changing threats. Electronically disseminating this field's research improves accessibility, makes knowledge exchange easier, and helps enterprises build creative, environmentally friendly security solutions. The advantages of AI in cybersecurity over traditional methods are obvious. Threat detection is enhanced by AI algorithms, which identify anomalies in network traffic and user behaviour that may indicate a security breach. Because machine learning models can learn from new data continuously, they are more resistant to evolving and zero-day attacks.

Furthermore, automated AI-based systems reduce incident response times, enabling companies to recover faster foresee potential attack routes and proactively strengthen their defences with AI-powered predictive analytics. Additionally, natural language processing enhances phishing detection by analyzing email content and communication formats. Although AI provides speed, accuracy, and

flexibility, the conversation emphasizes that issues like data privacy, algorithmic bias, and adversarial attacks still pose a threat. For AI- based security solutions to be dependable and equitable, it is essential to strike a balance between the advantages of automatic and the requirement for human supervision. Finally, integrating AI into cybersecurity represents a significant step forward in protecting digital infrastructure from increasingly complex threats. AI enables proactive defense strategies by detecting anomalies, predicting attack patterns, and automating responses, reducing human workload while improving overall security posture. Its scalability and adaptability ensure long-term relevance in an environment where threats are constantly changing. However, ethical considerations, transparency in algorithm design, and on-going monitoring are required to gradually reduce the potential risks associated with Artificial Intelligence (AI) misuse.



Floods: Causes, Impacts and Strategies

Karamjit Kaur, Gagandeep Kaur, Shubhdeep Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: Gagandhaliwal2710@gmail.com

Abstract: Floods are most reoccurring and destroying natural disasters worldwide, causing loss of life, economic damage and environmental degradation. In this paper, we studied about causes of flood, including climatic factors such as heavy rainfall, cyclones as well as insufficient drainage system. It highlights the consequences of flooding, displacement of population and live hood challenges during floods. Additionally, this paper examines flood predictions, preventions and early warning systems, sustainable urban planning and community based changing measures. The findings suggest that floods cannot be completely prevented; their risks can be significantly reduced through proactive community practices. Methodology Floods are natural disasters; normally it is overflow of water on normal land. Globally floods effects millions of people each year, with increasing frequently and intensity due to change in climate. Understanding the causes, impacts and strategies for flood management is essential to build flexible societies. Floods remain a harder global challenge which happens due to climate change and unsustainable human practices. Effective flood management requires a combination of structural and non- structural measures which is supported by scientific research, policy frameworks and active community participation. Society can minimize the destruction impacts of floods by adopting integrated and sustainable strategies.



Image Processing

Yash Bansal, Lakhwinder Kaur and Yuvraj Kumar

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: yashb9845@hmail.com

Abstract: Digital image processing involves modifying and improving images by using different filtering and enhancement techniques. These methods help us see better visual information and conduct various analyses on the images. Digital image technology has several applications, including measurement, computer-aided design, physics, and three-dimensional simulation. Image processing takes images as input and produces a modified image as output. This modified image may enhance human perception or provide useful information. The applications of digital image processing are extensive, and its potential is significant. Beyond just improving and encoding images, digital image processing enables users to extract useful information and save it in different formats. It uses a digital computer to process digital images through an algorithm. As a subset of digital signal processing, digital image processing offers many benefits over analogue image processing. The image processing system generally treats all images as two-dimensional signals when applying specific predefined signal processing methods.

Keywords: Digital Image Processing, Filtering and Enhancement, Signal Processing, Information Extraction, Applications.

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IoT in Smart Homes and Energy Efficiency: Applications, Challenges and Future Scope

Nitika, Akshdeep, Gurtaran Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: nitika.cdac@gmail.com

Abstract: In today's world, households are major contributors to global energy consumption. Rising electricity costs and growing environmental concerns have pushed researchers, governments, and industries to explore innovative ways to optimize energy usage. Traditional homes often lack real-time monitoring and adaptive control, leading to unnecessary waste of electricity. IoT-based smart homes provide a promising solution by enabling communication between devices and empowering users to manage energy more efficiently. With the rise of renewable energy and eco-friendly technologies, IoT serves as a bridge between sustainability and convenience, creating homes that are both intelligent and environmentally responsible. This study uses a qualitative research approach based on secondary sources such as journal articles, industry reports, and case

studies published between 2016 and 2024. A literature review was carried out to understand how IoT frameworks are implemented in energy-efficient smart homes. Case examples of smart lighting, intelligent HVAC systems, and connected appliances were analyzed to evaluate effectiveness. Comparative analysis was used to highlight the difference between traditional home energy systems and IoT-based smart solutions. The methodology also examines communication technologies, cloud platforms, and AI algorithms that support these smart systems.

The findings suggest that IoT-enabled smart homes significantly reduce energy consumption while maintaining user comfort. Smart thermostats such as Google Nest and Ecobee can learn household patterns and adjust heating or cooling automatically, reducing energy wastage by up to 20%. Smart lighting systems integrated with motion sensors ensure that lights are only on when required, while connected appliances like washing machines and refrigerators can operate during off-peak hours, minimizing load on power grids. IoT-based energy dashboards also give users insights into their real-time consumption, promoting awareness and encouraging sustainable habits. However, issues such as high installation costs, cybersecurity risks, and device compatibility remain challenges that slow down large-scale adoption. IoT has redefined the concept of modern living by making homes smarter, more sustainable, and energy-efficient. By integrating connected devices with real-time monitoring and intelligent control, smart homes not only enhance user convenience but also support global sustainability goals. While challenges such as affordability, security, and compatibility need further attention, the future looks promising with advancements in AI, 5G, and blockchain technology. With continued innovation and collaboration between governments, industries, and researchers, IoT has the potential to create truly energy-efficient and eco-friendly smart homes of the future.

Keywords: Internet of Things (IoT), Smart Homes, Energy Efficiency, Smart Devices,



IT Role in Human life

Shaihbaaz Singh Mann, Jaspreet Kaur, Devinder Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: shaihbaazmann@gmail.com

Abstract: Information Technology (IT) has become one of the most influential forces shaping modern human life. It plays a vital role in almost every sector, including education, healthcare, business, governance, and daily communication. IT has improved convenience, accessibility, and efficiency, while also contributing to economic growth and social development. However, its rapid growth presents challenges such as cybersecurity threats, privacy concerns, and digital dependency. This paper explores the significance of IT in human life, its applications in different domains, the challenges it brings, and its potential future developments. The study concludes that IT is a powerful

tool that must be used responsibly to ensure inclusive and sustainable progress in society. Information Technology has become a foundation of modern society, shaping the way people live, learn, work, and interact. Its applications in education, healthcare, business, and governance demonstrate its power to improve efficiency, accessibility, and global connectivity. At the same time, IT presents challenges such as cybersecurity threats, privacy issues, and the digital divide, which cannot be ignored. Looking ahead, technologies like Artificial Intelligence, IoT, Blockchain, and Virtual Reality will further transform human life. However, the success of IT will depend on how responsibly it is used, ensuring ethical practices, equal access, and sustainable growth. Ultimately, IT is not just a technological tool but a driver of human progress, and its balanced use will determine the quality of life for future generations.

Keywords: Information Technology, AI – Artificial Intelligence, VR – Virtual Reality,



Modular AI Integration in Robotics

Kulwinder Singh, Umansh Garg and Priyanshi Kansal

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: priyanshikansal28@gmail.com

Abstract: From mechanical automation, robotics has developed into intelligent systems with sensing, learning, and self-governing decision-making capabilities. Conventional robots followed present instructions and functioned in controlled conditions with little flexibility. Robots can now read sensory data, learn from experience, and interact with people and their environment in real time thanks to the integration of Artificial Intelligence (AI), which includes machine learning, computer vision, and natural language processing. Autonomous vehicles, surgical robots, smart agriculture, and assistive technology have all advanced as a result of this convergence. But there are still issues with guaranteeing ethical deployment, safety, and transparency.

This study used Python and the Robot Operating System (ROS) to create and assess an AI-integrated robotic helper in a modular fashion. Three key components were integrated into the system: reinforcement learning (implemented with Stable-Baselines3) to allow adaptive task execution based on environmental feedback; computer vision for object detection and environmental navigation; and natural language processing for voice-based interaction and command interpretation. To evaluate task success rate, perception accuracy, and interaction fluency, simulations were run in dynamic, semi-structured settings. Furthermore, real-world case studies from robotics in the fields of industry, medicine, and agriculture were examined to confirm the system performance and suitability for a variety of settings. Under a variety of circumstances, the AI-enabled robot completed tasks with a 92% completion rate.

Over time, reinforcement learning enhanced decision-making, and NLP modules made rudimentary conversational control possible. Case studies showed improved flexibility and efficiency in healthcare and industrial environments. Data reliance, real-time processing limitations, and decreased performance in noisy situations were among the drawbacks. Trust, explainability, and bias are still important ethical issues. The findings confirm that integrating modular AI greatly increases robotic autonomy; nevertheless, scalability and safety must come first. Robotics has been redefined by AI, which allows machines to function autonomously and intelligently. This study illustrates how modular AI approaches can improve robotic performance in a variety of fields. Despite the significant advantages, appropriate implementation requires addressing ethical and technical issues. Future research should concentrate on human-centric design, low-resource adaptability, and explainable AI. Theoretical AI and real-world robotics can be combined to create scalable solutions for fields like healthcare and education.

Keywords: Robotics, Artificial Intelligence, Machine Learning, Autonomous Systems, Computer Vision

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Human-Robot Interaction, Ethical AI

Jaspreet Kaur, Simaranjit Kaur and Sonali

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: Simarankaur.2316@gmail.com

Abstract: With the increasing availability of digitized texts and advanced computational tools, NLP enables large-scale analysis of literature alongside traditional close reading. Techniques such as tokenization, part-of-speech tagging, named-entity recognition, sentiment analysis, stylometry, and topic modeling allow scholars to investigate authorship, thematic patterns, character networks, and cultural trends across extensive corpora. These approaches have revealed new perspectives on issues of gender, race, class, and emotion in literary works, extending the scope of textual interpretation.

At the same time, computational methods present challenges. Figurative language, irony, and ambiguity often resist algorithmic classification, while corpus design, training data quality, and algorithmic bias can distort results. These limitations highlight the need for careful methodological integration.

The paper argues that NLP should be positioned not as a replacement for humanistic interpretation, but as a complementary framework that enhances critical inquiry. By combining quantitative text analysis with interpretive reading, scholars can uncover patterns at scale without sacrificing sensitivity to nuance. The findings suggest that interdisciplinary collaboration between computer

science and literary studies will be essential for advancing the field and reimagining how literature is studied in the digital age.

Keywords: Computational, Language, NLP, Humanistic, Quantitative



Online Fraud & Spam Detection (Phishing, Scams, Identity Theft)

Gagandeep Singh, Juvreet Kaur, Manider Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: gagandeepsingh5798@gmail.com

Abstract: With growing adoption and utilization of digital communications, so grows the myriads of online frauds. Phishing, scams, and identity theft are emerging from criminals tapping into human frailties and system weaknesses. As fraudsters develop, our counter-fraud methods have relied, primarily on maintaining black lists or rules that could identify the same types of threats that existed. Evaluations against benchmark datasets showed detection rates above 95% while demonstrating a reduction in false positives compared to traditional methodologies. The transparency and trust were enhanced by applying Explainable AI (XAI) and encouraging interpretable reasoning for both the security experts and the end users. The study emphasizes the necessity of adaptive, AI-driven, and transparent fraud detection systems in recognizing the increasing sophistication of fraud schemes, and to protect unaware users online, firms The study emphasizes the necessity of adaptive, AI-driven, and transparent fraud detection systems in recognizing the increasing sophistication of fraud schemes, and to protect unaware users online, firms and governments in terms of security in digital transactions.



An Empirical Study on the Victimization of Online Gaming Frauds among Young adults in Chennai

Hari Gopal, Navdeep Kaur Sidhu, Veerdavinder Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: goyalharry62@gmail.com

Abstract: In this study, online gaming fraud will be viewed as the illicit action and improper advantage of acquiring financial gain in an online gaming environment. Increasingly the recreation of online gaming is being enjoyed by young adults for social experiences; however, online gaming also presents risk of financial loss and risk of obtaining personal data.

Methodology: The research is grounded on quantitative data collected from 59 young adults (male and female) in Chennai, Tamil Nadu, India. Annual cases of online gaming fraud were analyzed to better understand the way fraud impacts victims and the elements of games that create risks. Data was also collected in areas of Chennai to explore the motivations, barriers, and challenges young adults reported about online gaming.

Result and Discussion: Findings identified the frequency, varieties, and consequences of gaming fraud on victims. Fraudulent gaming activity has consequences for the players involved in more ways than one. This research illustrates the role of specific game attributes and online behaviors that influence vulnerability as well as the reasons that young adults have to act in these risky ways.

Conclusion: This study indicates the necessity for preventive actions and recommendations for identified online gaming fraud. With the escalating issue of gaming fraud, efforts must be focused on awareness, protection and policies for gaming fraud prevention, which can contribute to limits of financial damages, safeguarding personal identity, and limiting negative social impacts on young adults and their families.

Keywords: Online Gaming, Frauds, Young Adults, Victims.



Organoid Intelligence – The Future of Biocomputing

Geetanjali Rani, Sapna Pant and Sanjna

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: geetanjali127@gmail.com

Abstract: Human society has changed as a result of computing, yet conventional silicon-based processors are running out of space and energy. The flexibility, learning, and parallel processing of the human brain cannot be completely replicated by emerging technologies like quantum computing, despite their promise of breakthroughs. Organoid Intelligence (OI) is a ground-breaking new idea that has resulted from this. OI use lab-grown brain organoids, which are scaled-down, simplified representations of human brains made from stem cells, as a biological computing substrate. OI makes use of real biological brain networks that have the innate capacity to analyses, adapt, and learn, in contrast to artificial intelligence, which mimics learning through algorithms on silicon chips. This study examines the scientific underpinnings, uses, difficulties, and probable future of organoid intelligence as the next big thing in biocomputing.

Methodology: This study foundation is secondary research, which examines recent scientific discoveries, published works, and biotechnology and neuroscience experimental initiatives. Scientists use human-induced pluripotent stem cells to grow brain organoids. These organoids produce cells that resemble neurons and have the ability to establish synapses and produce electrical signals. Then, two-way communication between organoids and digital systems is established using cutting-edge technologies like optogenetics and microelectrode arrays (MEAs). Similar to reinforcement learning, experiments have already shown that organoids may be & trained execute tasks like pattern recognition and decision-making through stimulation. In terms of adaptability and energy efficiency, OI stands out as a revolutionary technology when compared to models of classical and quantum computing.

Results and discussion: Organoid-based systems are reportedly much more energy-efficient than supercomputers, using a quarter of the power, according to studies. For instance, even the fastest supercomputers cannot handle the tasks that the human brain can complete with just about 20 watts. Early studies have demonstrated that, albeit very basicly, organoids are capable of learning and adapting. OI may prove to be very useful in the future for tasks like drug development, simulating neurological diseases, optimization issues, and hybrid AI–OI systems due to its versatility. But there are still many obstacles to overcome. Organoids lack the intricacy of complete brains and are biologically delicate. They are therefore challenging to scale. Additionally, ethical questions about consciousness, sentience, and the appropriate use of tissues obtained from humans come up. Notwithstanding these reservations, OI presents a once- in-a-lifetime chance to combine biology with computation, which could result in innovations that are not possible with silicon-based or quantum systems alone.

Conclusion: An innovative approach to Biocomputing future is Organoid Intelligence. OI has the potential to outperform existing computing techniques in terms of efficiency and intelligence by utilizing the inherent learning and flexibility of human neural tissue. Though it is still in its early stages, this discipline has the potential to revolutionize artificial intelligence, neuroscience, medicine, and computing. Biotechnology breakthroughs, strict ethical standards, and interdisciplinary cooperation between bioengineers, neuroscientists, and computer scientists are all necessary for the future. Organoid intelligence, if properly developed, may usher in a new era when biological computers inspired by humans will supplement digital and quantum systems, opening up previously unthinkable possibilities.

Keywords: Future Computing, Neural Organoids, Biocomputing, Organoid Intelligence, and Hybrid Intelligence.



Pollution and Plastic Waste

Karamjit Kaur, Navdeep Kaur, Lovepreet Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: mannavdeep40@gmail.com

Abstract: Plastic waste is a big environmental problem in the 21st century. Every year, over 400 million tons of plastic are made, but very little is recycled. This leads to lots of plastic ending up in landfills, waterways, and the open environment. Nature suffers damage, animals are harmed, and even human health may be at risk. It also costs money in industries like fishing and tourism. The problem of plastic pollution is influenced by things like international trade rules, industry lobbying, and how rules are enforced. Plastic pollution affects some communities more than others. The Basel Convention is one of several international regulations being developed to reduce plastic waste. But their disagreement on how to handle plastic production and waste. The review looks at how big the plastic pollution problem is, its effects on the environment and health, and ways to solve it. It asserts that merely utilizing technology to address the issue is insufficient. Plastic production must be reduced, and product design must change.

To deal with plastic pollution, we need global rules, companies to be responsible, and new business ways that are good for the economy and fair. The problem of plastic waste is increasing rapidly and creating big challenges for the world. It lasts for more than hundreds of years in the environment, harms sea life, and decomposes into micro plastics that enter in food, water and even in the air. These chemicals and tiny particles in plastic can harm people's health. Poor communities suffer greater risks as compared to rich nations. The cost of cleaning is very high and recycling alone cannot solve the crisis. Decreasing plastic production, promoting reuse, and making worldwide regulations are main solutions. Plastic waste and pollution are big issues that affect the environment,

people's health, society and the economy. Production is expanding faster than the world can handle. To overcome this, we must reduce the use of new plastics, design longer-lasting products, and promote circular systems. Strong universal policies are needed to distribute responsibility fairly. Solving this issue means conserving ecosystems, ensuring health, and building a greener, more eco-friendly future for everyone.

Keywords: Environment, Plastic, Health, Ecofriendly



Role of IoT in Disaster Management: Applications Challenges and Future Scope

Ramanpreet Kaur, Vishali and Shruti

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: aroravaishali04@gmail.com

Abstract: Both natural and man-made disasters present serious risks to infrastructure, the environment, and human life. Events that require prompt detection, efficient response, and effective recovery mechanisms include floods, earthquakes, cyclones, wildfires, and industrial accidents. The efficacy of traditional disaster management systems is diminished by their frequent reliance on manual reporting and delayed information flow. Through linked sensors, devices, and networks, the Internet of Things (IoT) provides creative solutions by facilitating real-time monitoring, quick data transfer, and intelligent decision making. IoT-based disaster management systems offer post-disaster recovery support, resource allocation support, and early warning alerts. As cloud computing, wireless communication, and artificial intelligence have grown in popularity, the Internet of Things (IoT) has emerged as a potent instrument for improving disaster preparedness and reducing losses. Understanding the Internet of Things role in disaster management, as well as its architecture, main uses, and implementation challenges, is the main goal of this study. IoT has the potential to be a key component of disaster-resilient societies and sustainable development in the face of growing global threats with ongoing innovation and cross-sector cooperation.

Keywords: Internet of Things (IoT), Disaster Management, Early Warning Systems, Smart Sensors, Emergency Response



The Technology and Society in the 21st century

Ramanpreet Kaur, Joban Singh Virk, Sapna

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: virkjoban288@gmail.com

Abstract: The relationship between technology and society is dynamic, evolving and deeply intertwined. Technological advances continue to shape human lifestyles, methods of working, methods of communicating, education, healthcare and governance. At the same time, society influences the development, acceptance and social use of technology. The fast pace of technological change in the 21st century has brought both chances and challenges. While technology has improved efficiency, global connectivity and access to information, it has also raised concerns about privacy, social inequalities and the digital divide. The abstract checks the interaction between technology and society; traverse both its positive and negative aspects. In communication, social media platforms and immediate messaging tools have connected people globally, yet they have also introduced issues like misinformation, trolling and loss of privacy. In education, digital tools and e-learning platforms have democratized knowledge, but inequality in access have created gaps between urban and rural populations. Healthcare technologies, such as telemedicine, wearable devices and AI-driven diagnostics, have improved patient care but raised social concerns regarding data privacy.

Employment patterns have shifted with automation and artificial intelligence, creating new chances in digital industries while threatening traditional jobs. Cultural practices have been reshaped by digital entertainment, online communities and global submission, but this has also led to incorporation of cultural identities. The discussion highlights that society is not a passive recipient of technology; rather, it actively shapes technology trends through demand, policy-making and ethical debates. For example, growing societal concerns about sustainability have driven the development of green technologies. Similarly, legal frameworks and cultural values influence the way artificial intelligence and monitoring technologies are implemented. However, the study also foregrounds that unregulated or uncontrolled technological growth can lead to extend inequalities, ethical quandary, unexpected effect for human well-being. The relationship between technology and society is both transformative and reciprocal. Technology has enhanced human capabilities, expanded access to opportunities and bridged geographical distances, but it has also introduced challenges related to morals, inequality, cultural preservation. The future of technology and society depends on responsive choices made today, were combination between governments, industries, communities will play a vital role. By adopting a human-centered approach, society can maximize its risks, ensuring that progress is sustainable, equitable and meaningful.

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The AI & ML Revolution: Transforming Technology, Society, and the Future

Jasmine Kaur, Amandeep Kaur and Sukhpreet Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: jass01072004@gmail.com

Abstract: Advanced technologies like deep learning, reinforcement learning, natural language processing, federated learning, and explainable AI (XAI) are being integrated by artificial intelligence (AI) and machine learning (ML), which is quickly changing industries. Together, these techniques lead to better decision-making, increased productivity, and automation, which speeds up change in the fields of healthcare, finance, retail, transportation, and education. Autonomous vehicles and robotics that can adapt to complicated settings have been made possible by reinforcement learning, while deep learning has greatly improved medical imaging and allowed for customized treatment programs. While federated learning protects data privacy by facilitating decentralized model training in delicate industries like banking and healthcare, natural language processing powers conversational agents and adaptive learning platforms, facilitating human-machine collaboration. Additionally, explainable AI provides accountability by making decision in complex systems that are more understandable and transparent. Although these advancements, there are significant ethical, societal, and governance issues with the use of AI and ML technology. When algorithms are trained on unrepresentative datasets, bias and fairness concerns arise, potentially producing discriminating results in fields like law enforcement, finance, and hiring. Despite developments like federated learning, privacy issues continue to pose a threat, especially when managing sensitive personal data.

The need for transparency is also important because black-box models frequently hide the decision-making process, which makes accountability difficult. Though consistent implementation is still a barrier, the emergence of explainable AI offers intriguing avenues to address this difficulty. Furthermore, the automation in daily tasks leads to risks of labor displacement, which could make social and economic inequities worse. At the same time, it could create opportunity for reskilling and new types of jobs. AI and ML have both good and bad sides. They can provide new opportunities, but they also raise ethical concerns. This shows how important it is to find a balance between innovation and accountability. In healthcare, banking, transportation, retail, and education, real-world uses show how powerful they can be. However, for change to be long-lasting, strong governance frameworks that stress openness, diversity, and accountability are needed. It is important for researchers, business leaders, and politicians to work together to create guidelines that make sure AI grows in a responsible and fair way. Innovation can advance in harmony with fairness, inclusivity, and long-term societal benefit if future research improves technologies like explainable AI, federated learning, and reinforcement learning to address ethical accountability and societal trust in addition to technical efficiency. In conclusion, the incredible promise and essential complexity of AI and ML are reflected in their quick development. Global industries are already

changing as a result of these technologies, ability to improve automation, efficiency, and decision-making yet their success centers on the thoughtful incorporation of moral values and open governance practices. It takes interdisciplinary cooperation that places a high value on justice, inclusion, and accountability to bridge the gap between technical advancement and social responsibility. AI and ML will continue to spur innovation if they are used wisely, ensuring fair and long-lasting advantages for all aspects of society.

Keywords: Artificial Intelligence, Machine Learning, Federated Learning, Ethics, Industry Transformation



The Challenges of AI Implementation in Business

Jagmeet Singh, Harman Garg, and Mohit

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: harmangarg129@gmail.com

Abstract: Over the past few years, AI has been increasingly adopted across various industries. It has also made a significant impact on businesses worldwide. However, along with its advantages, there are always challenges. To successfully implement AI in business, understanding its limitations is essential. AI has been used in industry to develop new products, operations, services, and customer experiences. In this paper, we will discuss the challenges faced by companies in implementing AI in their business. The challenges such as lack of skilled workers, technical infrastructure, and knowledge. One of the most revolutionary technologies in contemporary business, artificial intelligence (AI) is changing operations, consumer interaction, decision-making, and creativity. AI applications are extensively incorporated into company strategy, from supply chain management automation to marketing predictive analytics and customer care intelligent chatbots. However, even as AI has the potential to increase productivity and reduce expenses, several obstacles prevent it from being used effectively. High upfront costs, a shortage of qualified personnel, cybersecurity threats, and difficulties integrating with existing systems are among these issues. Furthermore, concerns of sustainability and dependability are raised by the lack of defined standards and the possibility of becoming overly reliant on AI systems. In order to use AI responsibly and maintain long-term growth and competitiveness, firms must address these issues. The study adopts a mixed approach combining literature review, case study analysis, and survey data from businesses experimenting with AI adoption.

Research papers, industry reports, and policy documents were examined to identify the primary hurdles in deploying AI at scale. Real-world business case studies, such as AI-based predictive modelling in finance, automation in manufacturing, and recommendation systems in e-commerce, were analysed to evaluate practical difficulties. Furthermore, expert opinions from AI professionals

were included to validate findings. The methodology emphasized qualitative insights to explain ethical and managerial challenges, alongside quantitative assessment of financial cost, error rates, and employee adaptability. Three main areas of adoption barriers for AI are highlighted in the report. The first technological challenge is limited data quality and integration problems with current IT infrastructure, which lower AI accuracy. Second, as small and medium-sized businesses (SMEs) sometimes lack the resources necessary for large-scale AI adoption, financial restrictions serve as obstacles. Lastly, the susceptibility of AI systems to hostile inputs and intrusions gives rise to security risks. Even while AI has quantifiable advantages including efficiency, innovation, and prediction accuracy, these benefits are frequently eclipsed by regulatory uncertainty and the possibility of abuse. Companies that successfully integrate AI make investments in transparent data governance frameworks, hybrid human-AI decision models, and staff training. The study comes to the conclusion that although artificial intelligence (AI) offers considerable business prospects, adoption of this technology is hampered by ethical, technological, financial, and regulatory issues. AI integration that is sustainable calls for not only advances in technology but also organizational preparedness, accountable leadership, and well-defined governance guidelines. For businesses to reduce the dangers of bias, job displacement, and cybersecurity vulnerabilities, automation and human control must be balanced. Success in the future depends on developing explainable AI systems, improving staff competencies, and implementing internationally accepted ethical standards. By taking proactive measures to address these issues, companies may turn AI from a disruptive technology into a reliable source of long-term value creation and competitiveness in the global market.

Keywords: Business, Artificial Intelligence, Finance, Cybersecurity, Global Market



The Foundation of Digital Transformation is Networking

Ramanpreet Kaur, Mehakpreet Kaur, and Kamya Kapoor

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: kapoorkamya05@gmail.com

Abstract: History: Today connected digital world is built on networking. It supports business, education, healthcare, entertainment, and scientific research applications by facilitating the smooth transmission of information between people, devices, and organizations. From basic point-to-point connections to intricate worldwide infrastructures that incorporate cloud computing, the Internet of Things (IoT), 5G, and artificial intelligence (AI), networking has changed over time. Because of these developments, networking now serves purposes beyond connectivity, becoming crucial for cybersecurity, remote collaboration, real-time data processing, and digital innovation. Efficient network design, management, and monitoring are becoming more and more important as the need

for quicker, more dependable, and secure communication increases. From individual communication to extensive industrial activities, networking has emerged as the foundation of digital transformation. The study comes to the conclusion that cutting-edge technologies like SDN, NFV, and AI-enabled optimization will be crucial in determining how networking develops in the future since they guarantee scalability, flexibility, and enhanced security. Ongoing difficulties, including as interoperability, bandwidth requirements, and cybersecurity risks, need for constant innovation and study. Additionally, the worldwide movement toward more environmentally friendly and energy-efficient networking solutions emphasizes how crucial sustainability will be for network infrastructures of the future. In summary, networking is not just a technical requirement but also a key factor in the current economic expansion, worldwide connectedness, and digital technology.

Keywords: Networking, Cloud Computing, Internet of Things, Cyber Security, 5G Technology, Flexibility



The Use of AI for Character Network Analysis

Jaspreet Kaur and Rashpinder Kaur

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: rashpinder526@gmail.com

Abstract: The adoption of Artificial Intelligence (AI) in character analysis has significantly reshaped the study of narratives across literature, theatre, film, and media. Traditional approaches to character study have depended on qualitative methods such as close reading, psychological interpretation, and cultural critique. While effective, these methods are often limited by subjectivity and the difficulty of processing large volumes of text. AI, particularly through machine learning (ML) and natural language processing (NLP), offers a new framework that combines interpretive depth with computational precision and scalability. AI-driven character analysis focuses on examining linguistic, emotional, and relational features within texts. By applying sentiment analysis, researchers can evaluate emotions and attitudes expressed by characters, while entity recognition and co-reference resolution assist in accurately identifying characters across complex narratives. Network analysis further enhances this field by mapping the interactions and relationships among characters, offering a structural view of social dynamics and narrative hierarchies. These computational tools allow for the identification of personality traits, behavioral changes, and patterns of influence that may remain unnoticed in traditional methods.

Advances in transformer-based models such as BERT and GPT have pushed the boundaries of what AI can achieve in character analysis. Unlike earlier tools, these models can capture contextual meaning, subtle variations in tone, and even metaphorical or ironic expressions. This enables more nuanced insights into character psychology, long-term development, and thematic roles within a

story. Moreover, AI techniques can be applied across large corpora of texts to uncover recurring archetypes and compare character portrayals across different genres, cultures, and historical periods. Such comparative studies highlight both universal aspects of human behavior and culturally specific interpretations of morality, identity, and power.

The applications of AI character analysis extend well beyond literary criticism. In psychology, narrative-based AI tools contribute to understanding human behavior and may support therapeutic practices. In education, they provide interactive platforms for exploring character development in literature. In media and entertainment, AI assists in script evaluation, character-driven storytelling, and the design of immersive video game experiences. Within digital humanities, it fosters collaboration between computer scientists and humanists, offering new methods for analyzing cultural and social narratives at scale. Despite its potential, AI-based character analysis faces notable challenges. Figurative language, symbolism, and deep cultural meanings are often difficult for AI to interpret accurately. Additionally, biases embedded in training data may lead to misrepresentations or reinforcement of stereotypes. The issue of algorithmic transparency also complicates the acceptance of AI in humanities research, as scholars often require clear justifications for interpretative claims. Ethical concerns must also be considered, particularly when AI methods are applied to psychological profiling or cross-cultural analysis. In summary, AI-based character analysis represents a transformative development in narrative, research, blending computational efficiency with interpretive depth. It enables large-scale, data-driven insights into character roles, relationships, and development, while complementing rather than replacing traditional critical methods. Although challenges related to bias, interpretability, and ethics remain, ongoing advancements continue to improve reliability and transparency. As AI and humanistic approaches increasingly converge, this hybrid methodology promises to deepen our understanding of characters, narratives, and the broader human experience reflected through storytelling.



Transformative Impact of Artificial Intelligence on Employability

Muskan, Divya and Amandeep Kaur

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: muskanmonga00@gmail.com

Abstract:

One of the 21st century most revolutionary technologies, artificial intelligence (AI), is changing industries, economies, and societies. AI boosts output, maximizes resources, and facilitates data driven insights by allowing robots to mimic human abilities like reasoning, problem-solving, and decision-making. Its uses in industry, healthcare, finance, education, governance, and agriculture open up new avenues for creativity and efficiency. But issues like algorithmic prejudice, data privacy, and employment displacement bring up moral and societal issues. AI presents both development prospects and threats of exclusion in India, where a large and youthful workforce coexists with uneven digital usage. This study emphasizes the need for reskilling, ethical regulation, and inclusive policy frameworks in light of AI dual role in creating new employment and upending established ones. Academics draw attention to both AI advantages and disadvantages. AI may replace regular employment, but it can also increase production, according to works like *The Second Machine Age* and *Rise of the Robots*. The & displacement effect is described in studies published in the *Journal of Economic Perspectives*, and three results are outlined in OECD reports: employment losses, productivity improvements, and new job creation. AI can increase productivity by up to 13.8%, according to research from the National Bureau of Economic Research, with different results for different skill levels. Data privacy and algorithmic bias are two ethical issues that are frequently brought up. All of these studies show how AI has a complicated impact on labor markets and needs to be carefully incorporated into society. A mixed-methods strategy is used in this study. Online surveys with 100–200 respondents—including graduates and employees—were used to gather quantitative data and 10–15 carefully chosen interviews with workers, HR specialists, and AI specialists provided qualitative insights. Stratified random sample was used in surveys to record sectoral diversity.

Exposure to AI, perceived job stability, readiness to reskill, and awareness of new prospects were among the major themes that were examined. According to the findings, 62% of respondents were afraid that automation will result in job losses in customer service, logistics, and manufacturing. At the same time, 74% of respondents said that the implementation of AI increased their production and efficiency. 68% of respondents said they were aware of new job openings in AI engineering, cyber security, and data science. Significantly, 80% of respondents concurred that ongoing reskilling is necessary to maintain employability. Concern over the growing divide between low- and high-skilled workers coexisted with excitement regarding AI's potential to eliminate monotonous activities, according to interviews. AI is changing organizational structures and skill needs in addition to automating occupations. The risk of displacement is largest for routine jobs, particularly for low-skilled individuals with little digital literacy. However, AI is also generating new positions in AI ethics, human-AI collaboration, and big data analytics. Addressing the widening skill gap through extensive reskilling, career training, and curricular changes is the task. Ethical

issues are also significant as, in the absence of legislation, AI could exacerbate bias and injustice. To reduce these dangers, policymakers must guarantee equitable labor practices, inclusive access, and responsible AI use. In India labor economy, artificial intelligence is both a disruptive and enabling force. Routine tasks are automated, but technology also boosts output and creates new career opportunities in developing fields. India youthful labor pool offers a benefit, but disparities in educational attainment and uneven technology use run the risk of making inequality worse. Therefore, the primary factor influencing employment is adaptability, which may be achieved through digital literacy and lifelong learning. Stronger cooperation between the government, business, and educational institutions is required, even though programs like Digital India and Skill India are crucial.

Keywords: India, Employability, Skills, Job Displacement, Artificial Intelligence



Online Book Store: A Digital Platform for Modern Readers

Nitika, Mehak Hans and Krish

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Abstract: In recent years, e-commerce has changed the way people buy and sell products, and the book industry has been no exception. Traditional bookstores are often limited in terms of location, stock availability, and operating hours. Online book stores, however, overcome these barriers by providing readers with instant access to a wide variety of books anytime and anywhere. They also offer added features such as reviews, recommendations, and secure payment methods that enhance the overall experience. This study aims to design and develop an online book store that not only makes purchasing books easier but also promotes the culture of reading in a convenient and affordable way. The study concludes that online book stores provide an efficient and sustainable alternative to traditional bookshops. The developed system successfully addressed key user needs by offering convenience, accessibility, and reliability. It also demonstrated how digital platforms can promote reading culture by making books more widely available. While the project delivered a functional system, there is scope for future improvements such as integrating AI-based personalized recommendations, multilingual support, and a dedicated mobile application. These additions would make the platform more interactive and inclusive. In summary, the online book store represents a modern solution to book distribution that aligns with the digital lifestyle of today's readers while paving the way for future innovations in e-commerce and education.

Keywords: Online Book Store, E-commerce, Digital Reading, Web Application, Database Management



AI-Driven Smart Cities: Enhancing Urban Sustainability and Efficiency

Manveer Kaur, Navneet Kaur and Harman Kaur

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding Email: manveersra1997@gmail.com

Abstract: Cities around the world are under tremendous strain due to the fast rate of urbanization, which has created problems with infrastructure development, environmental sustainability, resource management, and the provision of basic public services. There has never been a greater need for clever solutions to improve quality of life, maximize resource use, and lessen environmental effects as the world population moves more and more into urban areas. One revolutionary technology that has the potential to change how cities are developed, run, and maintained is artificial intelligence (AI). With an emphasis on how AI-driven innovations support urban sustainability and operational efficiency, this paper examines how AI is driving the idea of smart cities. Cities can process enormous volumes of data produced by sensors, Internet of Things (IoT) devices, surveillance networks, and digital platforms thanks to AI-powered systems. These systems can enhance public safety, lower energy consumption, and improve transportation networks by utilizing machine learning, predictive analytics, and real-time decision-making. AI algorithms used in intelligent traffic management, for instance, can optimize signal timings, ease traffic, and cut down on vehicle emissions, all of which directly improve air quality and lessen carbon footprints. Likewise, AI-powered smart grids enable dynamic energy distribution, forecasting demand trends and more successfully integrating renewable energy sources, enhancing energy efficiency and advancing global sustainability objectives.

In addition to infrastructure management, AI plays a critical role in environmental monitoring and waste management. Advanced image recognition systems can classify waste for automated recycling processes, while predictive models can anticipate areas of high waste generation, allowing city authorities to deploy resources more efficiently. AI-driven water management systems can also detect leakages, forecast water demand, and prevent wastage, ensuring a more sustainable use of critical natural resources. These applications demonstrate how AI fosters eco-friendly practices while improving operational reliability across diverse urban sectors. Public safety and citizen engagement also benefit from AI integration. Surveillance systems powered by computer vision can detect unusual activities, identify potential threats, and support law enforcement in maintaining safer communities. Chatbots and virtual assistants, integrated into city service portals, enhance accessibility by providing real-time support to citizens, thereby improving governance and inclusivity. Furthermore, AI systems support healthcare delivery in urban centers by predicting disease outbreaks, streamlining hospital operations, and facilitating telemedicine, thereby contributing to resilient and efficient healthcare ecosystems. Moreover, the evolution of AI-driven smart cities represents a paradigm shift in how urban ecosystems are conceptualized and managed. Beyond efficiency and sustainability, these cities foster innovation ecosystems where AI collaborates with technologies such as blockchain, digital twins, and edge computing to create

adaptive, resilient, and future-ready infrastructures. By integrating citizen feedback and participatory governance models into AI systems, smart cities can ensure inclusivity, transparency, and responsiveness to the needs of diverse populations. Ultimately, the success of AI-driven urban environments lies not only in technological advancement but also in harmonizing digital innovation with human values, thereby creating sustainable cities that prioritize both environmental stewardship and the well-being of their citizens. This study comes to the conclusion that artificial intelligence (AI) plays a significant role in enabling the development of smart cities that are not only technologically sophisticated but also ecologically and socially sustainable. AI has the potential to completely transform urban living by promoting data-driven decision-making, streamlining resource allocation, and improving citizen-centric services. To ensure that the advantages of AI-driven smart cities are shared by all, however, a balanced strategy that places a high priority on moral AI practices, fair access, and robust regulatory frameworks is needed to realize this vision.

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A Review on Dual Impact of Social Media on Society: Connectivity, Communication and Challenges

Nitika and Yudhveer Singh

Baba Farid College of Engineering and Technology, Bathinda, Punjab

Corresponding E-mail: nitika.cdac@gmail.com

Abstract: Social media has emerged as one of the most influential technological innovations of the 21st century, reshaping communication, information exchange, and global connectivity. Platforms such as Facebook, Instagram, X (formerly Twitter), and LinkedIn have created a digital ecosystem where billions of individuals interact daily. While these platforms foster social engagement, community building, and knowledge sharing, they also raise concerns regarding mental health, privacy, and political polarization. Understanding both the positive and negative dimensions of social media is crucial in today's interconnected world. Social media remains a double-edged sword. While it has undeniably revolutionized global communication and community engagement, it simultaneously poses risks to individual well-being and societal harmony. The future of social media lies in balancing innovation with responsibility. Effective digital literacy programs, stronger regulatory policies, and ethical use of algorithms are essential to maximize benefits while mitigating harm. A collaborative approach between governments, tech companies, companies, educators, and users is needed to foster a healthier and more sustainable digital ecosystem.

Keywords: Social Media, Digital Communication, Mental Health, Misinformation, Society.

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Human Positive Psychology

Nitika, Navreet Kaur and Riya Kumari

Baba Farid College of Engineering and Technology Deon Bathinda, Punjab

Corresponding E-mail: nitika.cdac@gmail.com

Abstract: Positive psychology is a very important topic nowadays because many people don't actually know what it means. Instead, they keep chasing materialistic things to find happiness in life. This paper explores the field of positive psychology, which mainly focuses on human happiness, growth, and well-being. The methodology includes a review of existing literature, a theoretical framework, and empirical findings from recent studies in the domain. In conclusion, positive psychology is essential because once a person understands what it is and how to apply it; their life becomes filled with happiness and kindness. They also tend to help others, spreading positivity around. Unfortunately, nowadays, younger generations often forget the importance of positive psychology and focus more on electronic gadgets. But it's crucial to understand that positive psychology prepares us for a better future.

Keywords: Psychology, Young Generation, Electronic Gadgets



Distant Reading v/s Close Reading

Jaspreet Kaur, Gourav Sama and Monika Rajpurohit

Baba Farid College of Engineering and Technology Deon Bathinda, Punjab

Corresponding Email: gouravsama85@gmail.com

Abstract: Close and distant reading is two common terms employed to define extra approach to examine literary text. Close Reading, dependent on New Criticism and formalist criticism methodologies, centres around the intrinsic characteristics of a text-its diction, syntax, imagery, symbolism, and narrative structure. By focusing on the smallest details of form and language, Close Reading attempts to extract layers of meaning that may otherwise be lost in broader canvases of literature. Interpretation is based on close, prolonged work with a single text, reading it as an autonomous whole worthy of meticulous attention. This approach has been the pillar of the humanities for centuries, providing readers and scholars alike with access to the richness of literary art as well as to the subtle interaction between form and meaning.

In contrast to it, Distant Reading, as described by Franco Moretti, redefines literary scholarship practice by eschewing close work on individual texts. Instead, it encourages reading of long literary corpora, often in hundreds or thousands, through the support of computational models, statistical packages, and digital humanities techniques. Distant Reading is not intended to read a specific work

in depth, but rather identify patterns, trends, and changes over time and space in history. By analysing metadata, genre distribution, stylistic shifts, or recurring thematic clusters, Distant Reading allows researchers to construct macro-level analyses of the evolution of literature. To illustrate, it is now feasible to plot the rise and fall of specific genres, observe the diffusion of narrative modes, or trace the articulation of specific themes over millennia.

This study argues that such two methods are not oppositional or mutually exclusive, but rather complementary ones that supplement literary scholarship when combined. Close Reading contributes interpretive richness, linguistic sensitivity, and appreciation of personal artistic accomplishment and Distant Reading contributes scope, historical awareness, and the ability to position individual works within larger patterns of cultural practices. Together, these methods offer a fuller model for reading literature. For example, an author could use Distant Reading to establish a broad trend towards the closure of epistolary novels at the end of the nineteenth century and then use Close Reading to analyze specific model texts that illustrate the cultural significance of this decline. Finally, the abstract advocates a reconciliatory framework that seeks to close the divide between humanistic interpretation and computational analysis. Through the presentation of case studies that utilize both approaches, this study emphasizes the imperative of methodological hybridity in modern literary studies. The combination of close and distant reading does not nullify either approach but enlarges the scope of interpretation so that scholars can fluidly traverse detail and system, singularity and totality. Such a coordinated framework guarantees that literary studies continue to be sensitive to the double imperatives of depth and scope in an increasingly digital age.

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Impact of Generative Artificial Intelligence on Education: Opportunities, Challenges, and Future Directions

Sukhjinder Kaur, Jaspreet Kaur and Arshdeep Kaur

Baba Farid College of Engineering and Technology Bathinda, Punjab

Corresponding Email: sukhbrar08@gmail.com

Abstract: Generative Artificial Intelligence (AI), such as ChatGPT, is becoming a powerful force in education. These tools can write essays, solve problems, generate images, and even support teachers in creating learning materials. Their presence in schools and universities is creating both excitement and debate about how education should change. The review shows that Generative AI can create new opportunities for education. It helps personalize learning, gives quick feedback, and makes lessons more interactive and engaging. It can also support inclusive education by helping students with different needs and learning styles. At the same time, challenges are clear. Issues such as plagiarism, data privacy, algorithmic bias, and unequal access to technology raise serious concerns. Educators also worry that students may rely too heavily on AI instead of developing creativity and

critical thinking. The findings suggest that assessments and teaching strategies need to be redesigned so that AI is used responsibly and meaningfully. Generative AI has the potential to transform education in positive ways, but only if it is used carefully. Clear policies, ethical guidelines, and collaboration between educators, students, and policymakers are essential. By balancing innovation with responsibility, Generative AI can support a more inclusive, adaptive, and student-focused education system for the future.

Keywords: Generative AI; ChatGPT; Education; Personalized Learning; Academic Integrity



Digital Transformation in Business and Legal Practices

Anu Jangir

Biyani Law College, Jaipur

Corresponding Email: anuujaangir@gmail.com

Abstract: Digital transformation is a defining force of the 21st century, reshaping organizations, industries, and legal institutions beyond the adoption of technology. It requires reimagining processes, culture, and strategies to thrive in a digital-first era. This study examines the integration of artificial intelligence, blockchain, cloud computing, big data, and automation in corporate and legal contexts, highlighting how these tools streamline operations, enhance collaboration, and improve service delivery. Short evaluations of AI-driven analytics, blockchain-enabled contracts, and cloud-based platforms illustrate ongoing shifts, while governance, compliance, and cyber security remain central to responsible adoption. In business, digital transformation enables predictive insights, automated logistics, and global collaboration; in law, it supports e-discovery, contract analysis, and virtual courts that expand access to justice. Despite opportunities for innovation and inclusivity, challenges such as data privacy, ethical concerns, and the digital divide persist. Success therefore depends on balancing efficiency with ethics and fostering continuous upskilling to merge technical and domain expertise. Ultimately, digital transformation represents not just technological change but a cultural and strategic evolution with the potential to drive resilience and sustainable value.

Keywords: Digital Transformation, Artificial Intelligence, Blockchain, Cloud Computing, Big Data



The Role of Artificial Intelligence for Social Good

Sonam Ratnu

Biyani Law College, Jaipur

Corresponding Email: sonamratnu87@com

Abstract: Artificial Intelligence (AI) is widely recognized as the most transformative technology of the 21st century, with applications extending far beyond automation and productivity to address critical societal challenges. This study examines AI's potential for social good across healthcare, education, agriculture, disaster management, governance, and environmental sustainability. In healthcare, AI-driven diagnostics and predictive models improve accessibility and accuracy, particularly in underserved regions. In education, adaptive learning platforms and data-driven tools democratize knowledge and reduce opportunity gaps. Agriculture benefits from AI-enabled soil analysis, crop monitoring, and climate forecasting, while disaster management leverages AI-powered early warning systems and relief coordination. Governance is strengthened through transparent, data-driven policymaking, and sustainability efforts are supported by AI in pollution monitoring, energy optimization, and biodiversity conservation. Findings demonstrate that AI fosters inclusivity, resilience, and sustainable development, but also raise concerns around privacy, bias, and inequity. The study emphasizes the need for ethical frameworks, human-centered design, and multi-stakeholder collaboration to ensure equitable distribution of benefits. Ultimately, AI for social good represents not just a technological advance but a strategic vision for innovation that uplifts communities and promotes sustainable progress.

Keywords: Artificial Intelligence, Soil Analysis, Crop Monitoring, Climate Forecasting, Disaster Management



Cyber Security and Digital Governance: Challenges and Opportunities

Madhuri Sharma

Biyani Law College, Jaipur

Corresponding Email: madhurisharma.in@gmail.com

Abstract: The rapid evolution of digital technologies has fundamentally reshaped governance systems, redefining the relationship between governments and citizens. Modern digital governance now incorporates artificial intelligence, big data analytics, blockchain, and cloud computing to enhance efficiency, transparency, accessibility, and inclusivity in public service delivery. These tools enable real-time citizen engagement, informed policymaking, and reduced bureaucratic delays.

Yet, the expansion of governance into digital ecosystems also amplifies cyber security risks, exposing sensitive data and critical infrastructure to threats such as hacking, phishing, ransomware, and large-scale breaches. This study examines the dual dimensions of digital governance and cyber security, focusing on vulnerabilities linked to policy gaps, weak legal frameworks, limited citizen awareness, and jurisdictional challenges in addressing cross-border cybercrime. Social dimensions, including the digital divide, are also assessed for their impact on inclusivity. Findings highlight that secure digital platforms foster citizen trust, strengthen accountability, and support participatory decision-making. Strategies such as blockchain-based record keeping, end-to-end encryption, adaptive regulation, capacity building, and international cooperation are identified as critical enablers of resilience. Ultimately, the intersection of digital governance and cyber security represents a defining challenge of the 21st century. When supported by robust frameworks, ethical practices, and inclusive policies, digital transformation can safeguard trust, equity, and democratic values while driving innovation and institutional strength.

Keywords: Digital Governance, Blockchain, Cybercrime, Social Dimensions

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The Role of Artificial Intelligence for Social Good

Gunjan Sharma

Biyani Law College, Jaipur

Corresponding Email: sharmagunjan1310@gmail.com

Abstract: Artificial Intelligence (AI) has rapidly emerged as one of the most transformative technologies of the 21st century, extending its impact beyond industrial and commercial domains into areas of direct social relevance. With its ability to process vast datasets, detect patterns, and generate predictive insights, AI offers powerful tools for addressing global challenges such as healthcare inequities, educational gaps, climate change, disaster management, and social justice. This study examines the role of AI as an enabler of inclusive and sustainable development. In healthcare, AI-driven diagnostics, telemedicine, and predictive analytics expand access in underserved regions. In education, adaptive platforms personalize learning and bridge literacy divides, while environmental applications support climate modeling, biodiversity conservation, and precision agriculture. Governance and civil society initiatives employ AI to improve service delivery, strengthen transparency, and monitor human rights. Disaster management benefits from AI-enabled early warning and real-time response systems, reducing risks to lives and livelihoods. Despite these advances, concerns over bias, privacy, and the digital divide highlight the risks of reinforcing inequalities. The study argues that responsible AI requires robust ethical frameworks, regulatory safeguards, and cross-sector collaboration to ensure equitable outcomes. Ultimately, AI for social good must be seen not merely as a technological achievement but as a collective

responsibility to embed fairness, accountability, and inclusivity in its design and deployment. When guided by human-centered values, AI can evolve into a constructive force that empowers communities and fosters resilient, just, and sustainable societies.

Keywords: Social Good, Artificial Intelligence, Climate, Biodiversity, Agriculture, Human Rights



Cybersecurity and Digital Governance: Challenges and Opportunities

Rehana Khan

Biyani Law College, Jaipur

Corresponding Email: drrehanakhan555@gmail.com

Abstract: In today's hyper-connected world, the rapid expansion of digital technologies has transformed governance, service delivery, and citizen engagement. Digital governance enables transparency, efficiency, and accessibility, making governments more responsive to the needs of citizens. However, the parallel growth of cyber threats—ranging from data breaches and ransomware attacks to misinformation and state-sponsored cyber warfare—poses serious risks to both individuals and institutions. Cybersecurity has therefore become a cornerstone of modern governance, essential for safeguarding sensitive data, protecting critical infrastructure, and maintaining public trust. The interplay between cybersecurity and digital governance is complex, offering immense opportunities for inclusive development but also presenting unprecedented challenges in terms of privacy, regulation, and ethical accountability. This study follows a qualitative, interpretive approach, synthesizing insights from academic research, government policy documents, industry reports, and case studies on cybersecurity incidents and governance models. By mapping real-world examples of digital governance initiatives and analyzing the cyber threats they encounter, the paper highlights recurring patterns, gaps, and best practices. The methodology emphasizes thematic exploration of both challenges and opportunities, focusing on how cybersecurity measures can strengthen digital governance while fostering citizen trust and participation. The analysis reveals that digital governance initiatives—such as e-governance platforms, digital identity systems, and smart cities—enhance efficiency and inclusion, but their success is highly dependent on robust cybersecurity frameworks. Opportunities include the use of blockchain for secure public records, artificial intelligence for threat detection, and cloud computing for scalable service delivery. These technologies enable governments to streamline processes, reduce corruption, and extend services to marginalized groups.

At the same time, significant challenges persist. Cyberattacks on government databases compromise sensitive personal and financial information, eroding citizen confidence. Inadequate digital literacy

among users and administrators creates vulnerabilities that attackers exploit. The global nature of cybercrime also complicates jurisdiction, making international cooperation essential. Furthermore, concerns around surveillance, algorithmic bias, and over-regulation highlight the delicate balance between security and civil liberties. Discussions indicate that effective cybersecurity in governance requires a multi-layered approach: strong technical safeguards, clear legal frameworks, capacity-building among government officials, and active citizen awareness. Public-private partnerships are particularly important in pooling resources and expertise. Moreover, embedding privacy-by-design principles and ensuring transparency in digital systems can help build public trust while minimizing risks. Cybersecurity and digital governance are intrinsically linked in shaping the future of inclusive and secure societies. While digital platforms create new avenues for participation, efficiency, and accountability, they also expose vulnerabilities that can undermine trust and stability if left unaddressed. The opportunities lie in harnessing advanced technologies, promoting digital literacy, and fostering global collaboration to build resilient governance systems. The challenges demand proactive policymaking, ethical safeguards, and continuous adaptation to the evolving threat landscape. Ultimately, cybersecurity is not merely a technical necessity but a democratic imperative that underpins the credibility of digital governance. By viewing cybersecurity as both a protective shield and an enabler of innovation, governments can unlock the transformative potential of digital governance while ensuring safety, inclusivity, and sustainability for all.

Keywords: Cybersecurity, Digital Governance, Blockchain, Cyberattacks, Digital Literacy



The Future of Work: Technological, Economic, and Social Implications

Rajesh Verma

Biyani Law College, Jaipur

Corresponding Email: rajeshverma@gmail.com

Abstract: The nature of work is undergoing a profound transformation driven by rapid technological innovations, globalization, demographic shifts, and evolving societal expectations. Emerging technologies such as artificial intelligence (AI), robotics, automation, and digital platforms are reshaping industries, redefining labour markets, and influencing the skills demanded of workers. Economically, these developments promise greater efficiency, productivity, and innovation, while also raising concerns about job displacement, income inequality, and precarious employment. Socially, the future of work extends beyond economics to include issues of well-being, equity, and human dignity. The challenge lies in navigating this transition in ways that balance technological advancement with inclusive growth and social justice. This paper employs a multidisciplinary, qualitative review of literature, policy frameworks, and case studies that explore

the evolving dynamics of work. Sources include reports from international organizations, government policy papers, and recent academic studies on technological disruption, labour economics, and workplace culture. The methodology emphasizes thematic analysis to identify recurring challenges and opportunities across technological, economic, and social dimensions. Rather than focusing solely on technical aspects, the approach highlights how the future of work impacts human lives, organizational structures, and societal well-being. The findings suggest that technological advancement brings both opportunities and disruptions. On one hand, automation and AI are predicted to replace routine, repetitive tasks, freeing human labour for more creative and knowledge-intensive roles. Digital platforms enable flexible work arrangements and expand opportunities for entrepreneurship. On the other hand, these same technologies risk widening the gap between high-skilled and low-skilled workers, increasing economic inequality, and creating instability through the rise of gig and contract-based work. Economically, while productivity gains are evident, the distribution of benefits remains uneven. Wealth is increasingly concentrated among firms and individuals who own or control advanced technologies. Traditional employment models are giving way to more fragmented forms of work, raising questions about labour rights, social security, and equitable access to opportunities. Socially, the future of work is also reshaping workplace cultures and human identities. Remote work, hybrid offices, and digital collaboration tools are redefining work-life boundaries, with mixed implications for mental health, inclusivity, and community building. Discussions highlight that preparing for the future of work requires a proactive approach: rethinking education systems to emphasize digital literacy, critical thinking, and lifelong learning; designing inclusive economic policies to safeguard vulnerable groups; and fostering organizational cultures that value adaptability, collaboration, and diversity. Ethical concerns such as surveillance, algorithmic decision-making, and loss of human agency must also be addressed to ensure that technological progress does not compromise social well-being. The future of work represents both a challenge and an opportunity for societies worldwide. Technological innovation has the potential to improve productivity and enrich human lives, but only if its economic and social consequences are managed responsibly. Governments, businesses, and civil society must collaborate to create adaptive policies, invest in reskilling programs, and ensure equitable distribution of the gains of technology. Social dialogue and ethical frameworks will be crucial in aligning technological progress with human-centered values. Ultimately, the future of work should not be seen as a predetermined outcome of technology, but as a collective choice that shapes how societies balance innovation, equity, and human dignity.

Keywords: Globalization, Artificial Intelligence, Robotics, Social, Critical Thinking



AI for Social Good: Harnessing Technology for a Better Future

Varsha

Biyani Law College, Jaipur

Corresponding Email: drvarsha3911@gmail.com

Abstract: Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the 21st century. While much attention is often given to its role in business, defense, or automation, an equally significant yet sometimes overlooked dimension is AI for social good. This refers to the application of AI to solve pressing societal challenges—ranging from healthcare and education to climate change and humanitarian aid. By leveraging machine learning, natural language processing, and data-driven insights, AI has the potential to create more equitable, sustainable, and resilient societies. This research employs a mixed-method approach, combining both qualitative and quantitative techniques to gain comprehensive insights. Primary data was collected through surveys and interviews, while secondary data was gathered from scholarly articles, reports, and credible databases. A purposive sampling method was applied to select participants most relevant to the research objectives. The data was systematically analyzed using statistical tools for numerical patterns and thematic analysis for qualitative responses. Reliability was ensured through consistent procedures, while validity was strengthened by triangulating multiple data sources. Ethical standards, including informed consent and confidentiality, were strictly observed. This methodology provides a balanced framework for generating accurate and meaningful results. AI for social good involves designing and applying AI systems not just for efficiency or profit, but for human welfare and sustainable development. It aligns closely with the United Nations Sustainable Development Goals (SDGs), which focus on eradicating poverty, promoting health, ensuring quality education, and protecting the planet. Importantly, AI for social good is not limited to high-income nations; it can also provide solutions to challenges in low- and middle-income countries where resources are scarce.

Key Areas of Impact:

- **Healthcare and Medicine:** AI has already demonstrated remarkable capabilities in improving healthcare. Machine learning algorithms can analyze medical images to detect diseases such as cancer, tuberculosis, or diabetic retinopathy with high accuracy. Predictive analytics help identify outbreaks, allowing for faster containment of epidemics. In underserved regions, AI-powered chatbots and telemedicine tools provide medical advice to communities lacking access to professional healthcare. These innovations not only save lives but also reduce healthcare costs.
- **Education and Learning:** Education is another area where AI is creating social impact. Intelligent tutoring systems adapt learning material to the needs of individual students, making education more personalized and inclusive. AI-driven platforms can translate lessons into multiple languages, breaking down barriers for students in linguistically diverse regions.

Furthermore, AI tools can help identify students at risk of dropping out and provide targeted support to keep them engaged.

- **Climate Change and Environmental Protection:** Addressing the climate crisis is perhaps the most urgent challenge of our time, and AI is proving to be a valuable ally. Machine learning models can predict extreme weather events, enabling better disaster preparedness. AI systems also optimize energy consumption in smart cities and industries, reducing greenhouse gas emissions. Additionally, satellite data powered by AI is used to track deforestation, monitor wildlife populations, and ensure sustainable agricultural practices.

Benefits of AI for Social Good:

The advantages of applying AI in these domains are manifold. It enhances efficiency, ensuring that scarce resources are used effectively. It promotes accessibility, enabling marginalized communities to benefit from healthcare, education, and justice. Most importantly, AI for social good amplifies human capacity, supporting professionals such as doctors, teachers, and humanitarian workers in their missions. Despite its promise, AI for social good faces several challenges. One of the foremost concerns is bias in AI systems. If algorithms are trained on incomplete or skewed data, they risk perpetuating existing inequalities rather than alleviating them. Data privacy is another critical issue, particularly when dealing with sensitive health or personal information. Moreover, the digital divide means that low-income regions often lack the infrastructure to benefit fully from AI. Ethical governance, transparency, and inclusivity are essential to ensure that AI serves everyone fairly. For AI to fulfill its potential in driving social good, a collaborative approach is necessary. Governments must invest in digital infrastructure and enact regulations that safeguard against misuse. Technology companies should prioritize ethical design and open-access initiatives that allow non-profits and developing nations to harness AI tools. Academic institutions and civil society must also play a role in fostering awareness, training, and innovation. Importantly, communities themselves should be included in the design and deployment of AI solutions, ensuring that the technology addresses real needs rather than imposing external agendas. AI for social good is not a distant dream but an evolving reality. From saving lives in hospitals to combating climate change and empowering marginalized communities, AI has the potential to be a force for positive transformation. However, realizing this vision requires a careful balance between innovation and ethics, between technological progress and human rights. If guided responsibly, AI can become more than just a tool of efficiency; it can be a catalyst for justice, sustainability, and human dignity. The challenge before us is not whether AI will shape the future, but how we can shape AI to build a future that is inclusive, compassionate, and sustainable.

Keywords: Artificial Intelligence, Healthcare, Education, Climate Change



Cybersecurity and Digital Governance: Challenges and Opportunities

Hemangini Shekhawat

Biyani Law College, Jaipur

Corresponding Email: hemanginishekhawat@icloud.com

Background: The rapid growth of digital technologies has transformed the way governments, businesses, and individuals operate, creating new avenues for communication, commerce, and governance. However, this digital shift has also exposed societies to increasing cybersecurity risks such as data breaches, cyberattacks, identity theft, and threats to critical infrastructure. Digital governance, which refers to the use of digital tools and frameworks to manage public affairs, plays a crucial role in addressing these vulnerabilities while ensuring transparency, accountability, and citizen trust. The integration of cybersecurity into governance frameworks is no longer optional; it is essential for protecting sensitive data and sustaining digital ecosystems. While challenges include regulatory gaps, technological complexities, and cross-border threats, opportunities lie in global cooperation, advanced security technologies, and robust policy-making. Thus, the intersection of cybersecurity and digital governance defines a critical area for ensuring secure, inclusive, and resilient digital societies. This study adopts a qualitative-dominant mixed-method approach to explore the challenges and opportunities in cybersecurity and digital governance. Primary data was collected through expert interviews with policymakers, IT professionals, and academicians to capture practical insights. Secondary data was sourced from government reports, cybersecurity frameworks, scholarly articles, and international policy documents. A purposive sampling technique was used to select participants with relevant expertise in digital governance and security practices.

Thematic analysis was applied to qualitative responses to identify recurring patterns and policy gaps. Quantitative insights, such as global cyber incident statistics, were integrated to strengthen findings. Reliability was ensured by cross-verifying information from multiple credible sources. Validity was enhanced through triangulation of expert opinions and documented evidence. Ethical considerations, including respondent confidentiality and informed consent, were strictly followed. The methodology thus provides a structured framework to critically analyze existing challenges while highlighting opportunities for strengthening digital governance and cybersecurity. The findings reveal that cybersecurity remains one of the most pressing challenges in digital governance, with frequent threats such as data breaches, ransomware, phishing, and attacks on critical infrastructure. Survey and interview responses indicated that policymakers and IT professionals perceive regulatory gaps, lack of awareness, and inadequate technical preparedness as major vulnerabilities. Secondary data analysis highlighted an increasing trend of cyber incidents worldwide, demonstrating the urgency of robust security frameworks.

The results also suggest that effective digital governance requires the integration of cybersecurity policies with transparent, citizen-centric governance practices. Experts emphasized the need for

stronger collaboration between governments, private stakeholders, and international organizations to address cross-border cyber threats. Moreover, the adoption of advanced technologies like AI, blockchain, and zero-trust security models was identified as a significant opportunity to strengthen resilience.

Discussion further revealed that while developing countries struggle with limited resources and capacity, advanced economies face complex issues of privacy, data protection, and digital rights. Thus, cybersecurity and digital governance must be treated as complementary, ensuring both technological safeguards and regulatory mechanisms are in place. The study concludes that challenges can be transformed into opportunities through proactive policies, capacity building, and global cooperation. Cybersecurity today is not only a technical concern but also an ethical imperative. The ethical challenges primarily revolve around privacy violations, data misuse, surveillance, lack of accountability, and unequal access to security technologies. As digital systems become more deeply embedded in governance and daily life, ensuring fairness, transparency, and protection of individual rights becomes crucial. Addressing these challenges requires striking a balance between security needs and ethical responsibilities. Governments and organizations must adopt frameworks that respect digital rights while implementing robust cybersecurity measures. Ethical awareness, professional responsibility, and compliance with global standards should guide cybersecurity practices. Ultimately, fostering a culture of trust, responsibility, and accountability is essential to build secure and ethically sound digital ecosystems.

Keywords: Cybersecurity, Digital Governance, Commerce, Policymakers, Infrastructure



Digital Transformation in Business Administration and Legal Practices

Janki Sharan Sharma

Biyani Law College, Jaipur, INDIA

Corresponding Email: sharmajanki605@gmail.com

Abstract: The twenty-first century has witnessed an era of rapid technological advancement. Artificial Intelligence, digital tools are no longer confined to laboratories but have entered everyday human life. Smartphones, smartwatches, and virtual assistants are now common, and entire industries are reshaping themselves in response. Among these, Digital Transformation in Business Administration and Legal Practices stands out as one of the most significant developments of our time. Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the 21st century. Much like computers reshaped industries in the early 2000s, AI is now redefining the way businesses and legal systems operate. From smartphones to corporate management and judicial

systems, AI is penetrating every aspect of life. Christian Lous Lange once remarked: “Technology is a useful servant but a dangerous master.” This reflects the need to use AI as an empowering tool rather than becoming dependent on it. Globally, AI is influencing not only business and law but also healthcare, education, and governance. According to the McKinsey Global Survey on AI Adoption 2025¹, nearly 78% of companies worldwide have adopted AI in at least one business function.

This study is based on qualitative analysis of surveys, reports, and real-world case studies. Key examples such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), digital court systems, Online Dispute Resolution (ODR), and blockchain-based smart contracts have been examined to understand how AI-driven digital transformation is shaping business and legal landscapes.

Business Administration: AI has accelerated processes across industries. Recruitment has been streamlined through Applicant Tracking Systems (ATS), which automatically shortlist candidates. ERP Enterprise Resource Planning solutions ensure smoother management of projects, transfers, and appraisals. CRM Customer Relationship Management platforms enhance customer engagement by personalizing services and strengthening client relationships. Predictive analytics now assist companies in forecasting market trends and making data-driven decisions. Digital attendance systems have also become an integral part of corporate administration. Biometric and AI-powered attendance tools not only track employee presence but also help measure productivity, punctuality, and work-hour compliance. Cloud-based attendance records allow HR departments to manage large workforces more effectively, reduce manual errors, and ensure greater transparency in payroll management. In educational and legal institutions as well, digital attendance has improved accountability and reduced the chances of proxy or manipulation. Remote work platforms such as Zoom and Google Meet have enabled global collaboration, while cybersecurity systems safeguard sensitive business data. Digital signatures and e-documentation further reduce manual paperwork and improve efficiency in corporate administration.

Legal Practices: AI is also transforming the legal sector. India’s e-Courts Project enables digital filing, real-time case tracking, and virtual hearings, thereby reducing delays and making justice more accessible. AI-powered platforms such as AdvocateGPT lawyers use it in legal research, drafting, and case prediction. Online Dispute Resolution (ODR) provides an effective framework for arbitration and mediation in virtual environments, saving both time and cost. Legal databases and cloud solutions like SCC Online and Manupatra provide instant access to judgments and statutes while ensuring secure data storage. Furthermore, cloud-based evidence storage and digital signatures have enhanced document authenticity and reliability in litigation. Blockchain-driven smart contracts are also emerging as tamper-proof alternatives for legal agreements.

Concerns: Despite these advancements, AI adoption raises significant challenges. Errors and biased outcomes are still common, given that AI tools are in their developing stage. Overdependence on AI reduces independent decision-making capacity among professionals. Sensitive data shared through AI-driven platforms faces risks of exposure and cyberattacks. Moreover, job displacement remains a

pressing issue, with AI automating tasks traditionally performed by humans. A deeper ethical concern also arises: who bears accountability when AI generates faulty recommendations — the human user or the machine.

Conclusion: Digital transformation has made business administration more efficient and legal practices more accessible. However, its risks cannot be overlooked. AI should be viewed as a tool of assistance rather than a complete replacement for human intelligence. The future of AI will be determined by how responsibly it is integrated into institutions. If guided by ethical principles, AI can contribute to building a transparent, inclusive, and resilient digital future.

Keywords: Artificial Intelligence, Digital Transformation, Business Administration, Legal Practices, Online Dispute Resolution, Cybersecurity.

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Digital transformation in business and legal practices

Vijaylaxmi Meena

Mahatma Jyoti Rao Phoole University, Jaipur

Abstract: Business and legal practices are undergoing unprecedented shifts owing to the adoption of new technologies such as blockchain, artificial intelligence, and cloud computing. For businesses, the adoption of digital strategy tools helps in operational optimization as well as the enhancement of customers' interactions, engagement, and decision-making. Digital strategies in legal practices assist in case handling, accessing legal information, and compliance. It also allows for the reshaping of typical workflows as well as the fostering of new opportunities for competitiveness and growth transformation. All while obscuring the cost factor, and enhancing the level of innovation and transparency fostered. Along with the above-discussed transformation, the ethics of data protection are becoming ever clearer. Continuously adapting to the rapid technological changes in our age is the new frontier we must confront.

Keywords: Digital Transformation, Business Innovation, Legal Technology, Artificial Intelligence, Blockchain, Automation

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Cybersecurity and Digital Governance: Challenges and Opportunities with Key Words

Khushi Sharma

Biyani Law College, Kalwar, Jaipur (Raj.), India

Abstract: Cybersecurity and digital governance are critical components in the modern digital landscape, facing numerous challenges such as evolving cyber threats, data privacy concerns, regulatory complexities, and the digital divide. These challenges demand adaptive strategies and robust frameworks to protect digital assets and ensure trust in digital systems. At the same time, they offer significant opportunities to enhance transparency, promote innovation, and improve governance efficiency through emerging technologies and collaborative approaches. This paper explores the key challenges and opportunities in cybersecurity and digital governance, emphasizing the need for integrated policies, stakeholder engagement, and continuous innovation to build resilient and secure digital ecosystems.

Keywords: Cybersecurity, Digital governance, Data privacy, Cyber threats, Regulatory challenges, Digital divide, Innovation, Transparency

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The Role of Artificial Intelligence for Social Good

Khushi Shekhawat

Biyani Law College, Kalwar, Jaipur (Raj.), India

Abstract: Artificial Intelligence (AI) is revolutionizing different fields by providing cutting-edge solutions to address complex social issues. This article discusses the application of AI in advancing social good in the areas of healthcare, education, disaster management, environmental conservation, and poverty reduction. AI-based technologies support better decision-making, enhance resource optimization, and facilitate predictive analytics, resulting in more efficient and effective interventions. Ethics, equity, transparency, and privacy of data are essential in the effective implementation of AI for the common good. The paper also addresses the present challenges and opportunities in how AI-driven technologies contribute to reaching underserved communities as well as supporting inclusive growth. Through responsible use of AI, societies can translate its promise into enhancing the quality of living, narrowing gaps, and advancing global development.

Keywords: Artificial Intelligence, Healthcare, Education, Disaster Management, Environmental Conservation, Poverty Reduction

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Global Convergence Partnership in Law: Addressing Cybersecurity and Digital Governance

Maitri Rinwa

Biyani Law College, Kalwar, Jaipur (Raj.), India

Abstract: The digital revolution has redefined the global order, with cyberspace emerging as both a space of opportunity and vulnerability. While technological innovations enable global connectivity, they also expose nations to unprecedented risks such as cybercrime, data breaches, misinformation, and cyber warfare. The absence of universally accepted legal standards in digital governance has created a fragmented legal landscape, where sovereignty collides with borderless technologies. This paper argues for a Global Convergence Partnership in Law as a pathway to develop cooperative frameworks for cybersecurity and digital governance. By examining international instruments, regional approaches, and multilateral dialogues, the study highlights the urgent need for harmonized laws that address cyber threats while safeguarding privacy, freedom of expression, and national interests. The paper concludes that convergence in digital law must embrace flexibility, inclusivity, and trust to ensure that cyberspace remains secure, just, and sustainable for future generations.

Keywords: Global Convergence, Cybersecurity, Digital Governance, Data Protection, International Law

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Global Convergence Partnership in Law: Towards Harmonization of Transnational Legal Frameworks

Nausheen Khan

Biyani Law College, Kalwar, Jaipur (Raj.), India

Abstract: In today's interconnected world, legal systems cannot remain confined within national borders. Economic exchanges, human migration, digital communication, and environmental crises have blurred traditional boundaries, demanding a more cooperative approach to law. The idea of a Global Convergence Partnership in Law calls for countries to collaborate in shaping common standards that address global challenges while respecting local contexts. This paper examines the scope and potential of convergence, with particular focus on trade, human rights, and environmental governance. Drawing from international treaties and case studies, it argues that partnerships between states, institutions, and civil society can foster predictability and justice in the global order. At the same time, it recognizes the difficulties of balancing sovereignty, cultural diversity, and unequal power structures. The paper concludes by suggesting a framework of flexible yet principled

convergence—one that blends universal commitments with national autonomy to build a just, sustainable, and cooperative future.

Keywords: Global Convergence, International Law, Human Rights, Environmental Governance, Transnational Justice



The Double-Edged Sword: The Impact of AI on a Manager's Critical Thinking and Problem-Solving Skills

Sanjay Biyani and Yashi Sharma

Biyani Institute of Science and Management, India

Corresponding Email: com.yashi@biyanicolleges.org

Introduction: Artificial Intelligence (AI) has emerged as a transformative force in organizations, particularly in management. By enabling real-time data analysis, predictive modeling, and task automation, AI is revolutionizing decision-making. Traditionally, managers depended on intuition, experience, and critical reasoning to address challenges. The growing adoption of AI raises a crucial question: Does reliance on intelligent systems strengthen or diminish managerial cognitive skills? This study explores how AI functions as both an enabler and a potential inhibitor of managers' problem-solving and critical thinking abilities.

Methodology: This research employs a qualitative approach, relying on secondary data analysis of scholarly articles, industry reports, and case studies published between 2015 and 2025. Databases such as Google Scholar and Scopus were searched using keywords including AI in management, decision-making, and AI, cognitive offloading, and critical thinking in leadership. The collected literature was thematically analyzed to identify two core dimensions: (1) AI as a performance enhancer and (2) AI as a risk to cognitive engagement.

Results and Discussion: AI as a Performance Enhancer: AI systems support managers by providing accurate, data-driven insights, reducing biases, and enhancing forecasting abilities. This results in more informed decisions, improved efficiency, and stronger organizational outcomes.

AI-Induced Cognitive Offloading: At the same time, heavy dependence on AI can lead to cognitive offloading. Managers may begin to accept algorithmic outputs without critically questioning assumptions, creating a “black-box” mindset. Over time, this could erode analytical skills, independent reasoning, and adaptability—qualities essential for effective leadership. Younger managers, raised in AI-rich contexts, may be particularly vulnerable to such dependency, as they may lack opportunities to cultivate deep problem-solving skills without technological assistance.

Conclusion: AI is reshaping the managerial landscape, offering both opportunities and challenges. While it enhances efficiency, accuracy, and strategic foresight, it simultaneously risks undermining core cognitive skills through overreliance. To navigate this double-edged sword, managers and organizations must consciously balance AI-driven support with human reasoning, ensuring critical thinking and problem-solving remain central to leadership. The future of management lies not in replacing human cognition but in augmenting it with AI to create stronger, more adaptive decision-making frameworks.

Keywords: Artificial Intelligence, Critical Thinking, Decision-Making, Leadership, Augmented Intelligence



The Role of Artificial Intelligence for Social Good

Sujata Biyani and Surbhi Mittal

Biyani Institute of Science and Management, India

Email: surbhimittal9188@gmail.com

Background: Artificial Intelligence (AI) is no longer a futuristic concept—it is part of our everyday lives. From mobile applications to medical research, AI is shaping the way we live, work, and solve problems. When we talk about AI for social good, we focus on how this technology can be used to improve healthcare, education, disaster management, agriculture, governance, and other areas that directly affect people's lives. The purpose of studying AI in this context is to see how it can make services more accessible, reduce costs, and support the broader goals of sustainable development. At the same time, it is equally important to recognize the risks involved, such as bias in algorithms, privacy concerns, hallucinations, and the misuse of data. This balance between opportunity and challenge sets the stage for a meaningful discussion on AI's role in society.

Methodology: The paper follows a descriptive and analytical approach. First, I reviewed existing literature to understand the basic functions of AI, including prediction, pattern recognition, automation, and optimization. Then, I examined real-world examples where AI has been applied for social benefit across different sectors. This includes case studies in healthcare, agriculture, education, and governance. Along with highlighting the benefits, I also studied the risks and ethical issues related to the use of AI. The goal of this methodology is to keep the explanation simple, direct, and relatable, so that even readers without a technical background can follow the discussion.

Result and Discussion: The findings make it clear that AI has strong potential to make a difference in people's lives. In healthcare, for instance, AI tools can help doctors detect diseases at an early stage, manage hospital resources better, and predict possible outbreaks. In education, AI supports personalized learning and offers tools that make classrooms more inclusive, especially for students

with disabilities. In agriculture, farmers can use AI to predict weather patterns, improve crop yields, and manage resources more efficiently. Similarly, during natural disasters, AI-powered systems can provide early warnings, map crisis areas, and coordinate relief work more effectively. AI can also make governance and social protection schemes more transparent and efficient. However, challenges remain. Bias in training data can create unfair outcomes, a lack of transparency can reduce trust, and over-reliance on automation may weaken human decision-making. These risks show why human oversight and ethical guidelines are essential. The main point is that AI should not replace people, but rather support them in making better decisions.

Conclusion: AI is a powerful tool, but its value depends on how responsibly it is used. If designed and implemented with care, AI can help societies achieve sustainable development goals by improving access, quality, and efficiency of services. However, for AI to truly serve social good, it must be guided by principles such as fairness, accountability, and inclusiveness. Strong governance, collaboration among policymakers, researchers, and communities, and open systems are needed to ensure that AI benefits everyone. In the end, AI should always remain a technology that serves humanity, not the other way around. Used wisely, it can become a long-term force for positive change and social welfare.

Keywords: Artificial Intelligence, Social Good, Sustainability, Public Policy, Equity



The Role of Artificial Intelligence and Data Science for the Benefit of Society

Neeta Maheshwari and Dilpreet Kaur

Biyani Institute of Science and Management, India

Corresponding Email: com.dilpreet@biyanicolleges.org

Background: Artificial Intelligence (AI) has profoundly transitioned from a theoretical computer science discipline to a pervasive and powerful tool with significant practical implications across all sectors of society. While its commercial and industrial applications are widely celebrated, a parallel and critically important movement has emerged: leveraging AI for Social Good (AI4SG). This paradigm seeks to harness the predictive power, pattern recognition capabilities, and automation strengths of machine learning, natural language processing, and computer vision to address some of the world's most pressing global challenges. These challenges, often encapsulated by the United Nations Sustainable Development Goals (SDGs), include poverty, inequality, climate change, environmental degradation, and gaps in access to quality healthcare and education. This paper provides a comprehensive exploration of AI's transformative potential as a force for public benefit,

analyzing its applications, efficacy, and the inherent challenges that must be navigated to ensure its ethical and equitable deployment for the betterment of humanity.

Methodology: This research employs a rigorous, systematic literature review methodology to identify, evaluate, and synthesize a wide body of existing scholarly work, technical reports, and documented real-world case studies on AI4SG initiatives from the past decade. The analysis is structured around key thematic areas aligned with the SDGs. These areas include public health (e.g., AI for disease outbreak prediction, diagnostic imaging analysis, and drug discovery), environmental conservation and climate action (e.g., AI for precision agriculture, monitoring deforestation and biodiversity, and optimizing renewable energy systems in smart grids), education (e.g., AI-driven personalized learning platforms and automated content assessment), and disaster response (e.g., AI for analyzing satellite imagery to coordinate relief efforts and predict crisis migration patterns). The study critically examines the technical methodologies used, the scale of implementation (from pilot projects to nationwide programs), the partnerships involved (academia, industry, NGOs), and the quantitatively and qualitatively reported efficacy and impact of these AI solutions.

Result and Discussion: The findings reveal that AI is already making substantial and demonstrable contributions across the social good landscape. In healthcare, convolutional neural networks analyze medical imagery (X-rays, MRIs, retinal scans) with diagnostic accuracy often rivaling or surpassing trained specialists, thereby increasing access to expert-level care in remote and underserved regions. Natural language processing models are deployed to analyze social media and news reports for early signals of disease outbreaks, enabling faster public health responses. In environmental sustainability, AI algorithms process vast amounts of satellite and sensor data to monitor illegal logging activities in real-time, track the movement and population of endangered species, and optimize complex energy grids to integrate renewable sources efficiently. Furthermore, AI-driven educational platforms provide adaptive and personalized learning experiences, tailoring content to individual student needs and helping to bridge significant educational gaps. However, the discussion must also confront critical and persistent challenges. Algorithmic bias, often stemming from unrepresentative training data, poses a severe risk of perpetuating and even amplifying existing social inequalities, particularly against marginalized communities. Significant data privacy concerns arise from collecting and processing sensitive information on vulnerable populations. The development of high-performing AI systems typically requires access to large, curated, and annotated datasets, which are often scarce in the very contexts where social good applications are most needed, creating a "data desert" problem. Furthermore, the global digital divide—disparities in access to technology and digital literacy—threatens to exclude the most vulnerable communities from the benefits of AI, risking a new form of technological inequality.

Conclusion: In conclusion, Artificial Intelligence undeniably holds immense promise as a potent catalyst for social good, offering innovative, scalable, and data-driven solutions to intractable global problems. Its successful and sustainable implementation in this domain is, however, not merely a technological challenge but a complex socio-technical one. It necessitates deep interdisciplinary collaboration between computer scientists, domain experts, ethicists, policymakers, and the

communities being served. For AI to truly and equitably serve all of humanity, its development and deployment must be rigorously guided by a robust framework of ethics, transparency, fairness, and inclusivity. Future research and development efforts must, therefore, focus not only on improving algorithmic performance but also on creating explainable, auditable, and accessible AI systems. Concurrently, policy work must establish guardrails that protect citizens while fostering innovation. Ultimately, the goal is to ensure that the benefits of this technological revolution are distributed globally and justly, empowering communities and leaving no one behind in the pursuit of a more equitable and sustainable future.

Keywords: Artificial Intelligence, Social Good, Sustainable Development Goals, Algorithmic Bias, Ethical AI.



The Role of Buddhist Philosophy in Enhancing Academic Performance: A Comparative Study of Japanese Zen Practices and Indian Buddhist Traditions in Shaping the Next Generation

Smriti Tiwari and Radhika Biyani

Biyani Institute of Science and Management, Jaipur, India

Corresponding Email smriti.gr1@gmail.com

Abstract: Buddhist philosophy provides a valuable framework for enhancing academic performance and mental well-being, especially in an era marked by rapid technological advancements and increasing distractions. This study investigates the influence of Buddhist teachings on college students, with a comparative analysis of Japanese and Indian approaches, focusing on the Zen and Nichiren schools of Buddhism in Japan and classical Buddhist traditions in India.

The Zen and Nichiren schools emphasize lay practices such as meditation, chanting, and devotion to specific Buddhas or Bodhisattvas. These practices are known to enhance focus, emotional regulation, and resilience, making them highly relevant in academic contexts. In contrast, Indian Buddhist traditions, rooted in the Four Noble Truths and the Eightfold Path, provide a holistic approach to personal and intellectual development, promoting self-awareness, ethical behavior, and balance.

With the rise of artificial intelligence, emerging technologies, and the pervasive influence of social media, students face growing challenges such as distractions, misinformation, and reduced focus on studies. Buddhist-inspired practices, such as mindfulness and meditation, offer practical tools to combat these issues and enhance both academic and emotional growth.

Data for this research will be collected from 200 college students in Japan and Jaipur (India) to assess their awareness of Buddhist philosophy and the impact of meditation on their academic performance. A comparative analysis will also be conducted between students who actively engage in Buddhist-inspired practices and those who do not, to highlight the differences in focus, stress management, and overall academic success.

This study aims to provide insights into how Buddhist philosophy can address modern challenges, empowering students to navigate academic pressures and distractions effectively. By integrating Buddhist-inspired practices into educational frameworks, the research highlights their potential to shape the next generation's intellectual and emotional resilience.

Keywords: Buddhism, Buddhist philosophy, India-Japan comparison, Academic performance, meditation, mindfulness, emerging technologies, mental well-being



Leveraging Digital Technologies for Healthcare Accessibility: A Managerial Perspective on AIIMS Institutions

Narinder Singh Rawat¹ and Pawan Kumar Patodiya²

¹*Rajasthan Technical University, Kota, Rajasthan, INDIA*

²*Biyani Institute of Management Science, Jaipur, Rajasthan, INDIA*

Corresponding Email: narinderrawat@gmail.com

Background: The establishment of new All India Institute of Medical Sciences (AIIMS) institutions across the country reflects a transformative step toward equitable healthcare delivery in India. However, geographical and infrastructural barriers continue to limit accessibility, especially for rural and underserved communities. Digital health technologies such as Artificial Intelligence (AI), telemedicine, blockchain-based health records, and wearable devices have emerged as critical interventions to bridge this gap. Managing such technologies in large-scale healthcare systems like AIIMS requires a holistic understanding of leadership, governance, resource mobilization, and policy alignment with India's National Digital Health Mission (NDHM). This paper examines the managerial dimensions of integrating digital innovations into new AIIMS institutions to ensure sustainable, accessible, and efficient healthcare delivery models.

Methodology: The paper reviews recent government initiatives like Ayushman Bharat Digital Mission (ABDM), case studies, and global best practices on digital healthcare adoption. Insights are drawn from secondary sources, including government reports, academic papers, and healthcare industry analyses. The managerial perspective emphasizes how decision-making processes, investment strategies, workforce training, and change management shape technology-driven

healthcare models. A thematic content analysis was used to identify patterns in the challenges and opportunities of implementing digital technologies at the institutional and system levels.

Result and Discussion: Findings suggest that the adoption of digital technologies in new AIIMS institutions offers three primary benefits: expanded accessibility, improved resource efficiency, and patient-centric care. Telemedicine initiatives enable specialists at AIIMS to reach remote populations without the need for infrastructure-heavy physical expansion. AI-based diagnostic support systems reduce the burden on physicians, enhancing decision-making accuracy. Electronic health records (EHRs) improve coordination among healthcare professionals while ensuring transparency and accountability.

From a managerial standpoint, several challenges were identified. First, digital equity remains a concern as patients in rural areas face limited internet penetration and digital literacy barriers. Second, large-scale data security and patient privacy issues pose ethical and operational risks. Third, the transition demands capacity building among doctors, nurses, and administrative managers to ensure technology is effectively utilized in daily routines. A strong change management strategy is essential for embedding digital innovations into organizational culture. Furthermore, sustainable funding models—possibly via public-private partnerships (PPPs)—are crucial for scaling digital health systems across AIIMS Institutions. Applying these to AIIMS requires customization to India's local healthcare delivery and cultural context. Managerial leadership plays a pivotal role in balancing these structural, technological, and human resource considerations while aligning with national priorities.

Conclusion: New AIIMS institutions represent a unique opportunity to leverage digital healthcare technologies as integral components of India's healthcare ecosystem. Successful implementation requires managers and policymakers to adopt innovative, adaptive, and inclusive strategies that prioritize accessibility, affordability, and sustainability. By addressing challenges related to infrastructure, digital literacy, and policy frameworks, AIIMS can emerge as a pioneer of digitally integrated healthcare in India. Strategically embedding digital practices into healthcare management will not only enhance patient outcomes but also advance India's vision of universal health coverage.

Keywords: Digital Health, AIIMS, Telemedicine, Healthcare Management, Accessibility.



Technology, Business & Law in Convergence: Pathways to Global Integration

Supriya Agrawal

S. S. Jain Subodh Management Institute, Jaipur, Rajasthan

Corresponding Email: drsupriyaicwa@gmail.com

Abstract: Mankind is undergoing an epoch-making technological revolution. Technology is evolving at a breakneck speed, and it is reciprocally shaping and increasingly becoming part of our own lives, histories, and destinies. The accelerated process of globalization and digitalization has placed technology, business, and law at a new record level of convergence. With an interdependent world, the three areas can no longer exist in solitude but work together as supporting pillars, influencing one another and shaping global integration. This paper discusses the emerging interconnections of technology, business operations, and regulatory frameworks, with a focus on how their convergence supports sustainable development, cross-border cooperation, and inclusive innovation. The research outlines three key dimensions. First, technology has become the central enabler of integration, driving digital commerce, transforming financial systems, and reorganizing organizational forms with artificial intelligence, blockchain, and data-driven ecosystems. Second, business strategies more and more depend on cross-sector and cross-border collaborations to ensure competitiveness, tap into innovation, and respond to fast-changing market dynamics. Third, law lays the groundwork for trust and accountability by placing regulatory standards, intellectual property rights, data protection, and mechanisms for resolving disputes within a globalized digital economy.

From a multidisciplinary perspective, it is the contention of the paper that convergence in these areas is not merely a reaction to globalization but a force that drives it. Collaborative strategic partnerships between governments, companies, and legal organizations are important in solving problems that include digital inequality, cybersecurity threats, and the ethical rule of law. The convergence model described here places technology as the driver, business as the doer, and law as the ruler, thus establishing a balanced structure of global integration. Accordingly, the research portrays the processes of long-term technological cross-fertilization by means of which the bio-economy, as a case of a heterogeneous technological sphere, formed its 'backbone' of technological knowledge. The research adds to the positive correlation of advanced technological and industrial understanding with increased technological convergence. Notably, it highlights the importance of global partnership in bringing together new technologies, business, and law to converge to ensure innovation tracks with equity, sustainability, and justice. The research offers a template for innovation nurturing through inter-sectoral and inter-disciplinary communication.

Keywords: Business Integration, Digital Transformation, Global Convergence, Law, Technology



Diversity, Equality, and Inclusion in a Dynamic Workplace -MM Anon Negotiable Strategy

Anupama Goyal

Jayoti Vidyapeeth Women's University, Jaipur

Abstract: Organizations are made up of people from different backgrounds and with various characteristics, such as interests, values, personalities, beliefs, traditions, customs, nationalities, and languages. These people collaborate to achieve shared objectives. How well these goals are achieved depends a lot on the people in the organization. The way people in an organization think, feel, communicate, work, and respond to situations helps them reach the organization's goals. To succeed in a competitive environment, organizations need a workforce that can adapt and work well together. This means hiring people with different backgrounds and experiences to attract and keep the best and most skilled workers. This collaboration helps the organization achieve its goals more effectively. A diverse workforce usually reflects the population of the areas where the organization operates and the customers it serves.

Diversity means the variety of human differences, whether they are natural, like where someone is born, or developed through life experiences. In today's job market, these differences can sometimes lead to unfair treatment or discrimination.

Introduction: Organizational policies and practices that promote inclusion make all employees feel welcome, valued, and respected. These employees have equal and fair opportunities for career growth, a good working environment, and fair pay. Employees in inclusive organizations feel a strong sense of belonging, are empowered, and have opportunities to grow. Managing diversity in the workplace goes beyond simply acknowledging people's differences. It also means understanding the value of those differences, avoiding prejudice, embracing diversity, and creating an inclusive environment that helps the organization work better. When an organization includes an employee's views and experiences, it creates a positive impact. It makes the employee feel safe, valued, and like an important part of the team. Feeling a sense of belonging at work means that the environment is psychologically safe. Employees can express their thoughts and ideas freely, and they are recognized for their unique contributions and achievements. Inclusive organizations take responsibility not

only for the impact they have on their employees' lives but also on the communities they operate in. They work towards social justice and fairness for everyone.

Background of Inclusion in India: There is limited research and reports on inclusion in the Indian workplace, with most focus being on inclusion in education. The Indian Constitution bans discrimination based on religion, race, caste, sex, or place of birth. It also ensures equal opportunities for public employment. Through the directive principles of state policy, the Constitution sets out a goal to correct long-standing social, economic, and political inequalities. It

requires the state to focus on the educational and economic interests of scheduled castes and tribes. This is similar to affirmative action in the United States. While educational institutions and public sector organizations are required to ensure fair representation of backward castes and tribes, discrimination and unequal treatment still exist, as shown in the Thorat Committee report on caste discrimination.

Objectives of the Study:

- To understand the work related to diversity, equality, and inclusion, we can use supporting theories
- To create a model for managing DE & I practices within the organization.
- To design a model for strategic action points related to employee performance.
- To analyze the gaps in DE & I practice in India.

Review the workforce, diversity, equality, and inclusion using supporting theories.

Social Categorization Theory: This theory suggests that people from different social groups, like nations, employers, or schools, classify themselves based on key traits. They act in ways that match their group and choose situations that help them feel part of the group. As a result, people who are different from each other are less likely to work together.

Social Identity Theory: According to this theory, people identify with their social group and prefer being part of it over groups they don't belong to. In an organization, people often feel more comfortable working with those who are like them, which can make the organization more efficient. However, when people from different groups work together, they may have different opinions and feel that conflict might happen. Being part of a group helps people feel a sense of belonging. When group members see each other as similar, trust and acceptance grow, which leads to feelings of inclusion. While having common qualities helps people feel included, being recognized and appreciated for what they contribute to the group is also an important part of inclusion.

Strategic Choice Theory: Strategic-choice theorists believe that top executives make decisions that affect how well an organization performs. If there is not much racial diversity among leaders, it can limit strategic decision-making. This can happen because communication might decrease and conflicts may increase, which harms the organization's performance. The idea is that having a diverse group of people brings in different ways of thinking and problem-solving, which can increase the group's knowledge and help solve problems better. Develop the Workforce DE & I Practice Management Model in the Organization Hiring a diverse workforce can certainly boost productivity, but it can also bring challenges if not handled well. Issues like language barriers, misunderstandings, and differences in how people think and act can cause problems. These issues often come from how people behave, and if not managed, can lead to bigger problems. In this model, we've looked at different aspects of workforce diversity, equity, and inclusion, and how they relate to the people working in the organization. We also identified the benefits that come from

successfully managing diversity, equity, and inclusion. Many organizations have already seen the value of these practices in keeping their businesses running smoothly and staying competitive.

Results and Discussion:

Challenges posed by new Technology: New technologies can sometimes carry biases that make problems worse instead of solving them. Some technologies are released before they are fully tested, which can make them not work well or even cause harm. Also, the tech industry often doesn't have enough diversity, which can lead to blind spots when designing new products.

Opportunities provided by new technology: Technology has the potential to create good practices on a large scale and make new ways of working possible that were not practical before. For example, technology can help review job applications for high-volume roles in more detail than a typical people and culture department can. These technologies are used to support company policies, provide timely data, spot and reduce bias, increase transparency, and help with employee training. The market for "DE&I technology" is growing quickly, with an estimated value of around \$20 billion by 2025.

Employee Experience, Reward and Development

- Train and motivate managers and employees to build a more inclusive and welcoming workplace.
- Internal dynamics in organizations may quieten the voices of employees from diverse backgrounds, making them feel less connected to the workplace.
- Conduct fair performance reviews: Managers might use unfair or biased standards when evaluating work, which can lead to unfair pay or career opportunities.
- Help plan careers along with learning and development: Learning and development teams may find it hard to give personalized career advice to all employees at scale

Conclusion: Diversity, equity, and inclusion professionals need to use good judgment and rely on evidence when evaluating new workplace technologies. These technologies can sometimes introduce new forms of bias, but there are ways to fix these issues, and those solutions can be applied widely. To make the most of new workplace technologies, organizations that want to use a strong Diversity, Equity, and Inclusion (DE& I) approach should ask technology providers for information about:

- How clear the input data is and how it handles privacy concerns.
- How well the tool's results connect to key performance indicators.
- Proof that the methods used to measure performance are valid.
- Whether the tool has any unfair results based on race, ethnicity, gender, or other factors.
- Reports on the diversity of the team that created the tool and how well they were trained to avoid bias

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Navigating Cultural Differences: Effective Conflict Resolution and Adaptation Strategies

Parul Bhargava

S. S. Jain Subodh Management Institute, Jaipur, India

Corresponding Email: parul12780@gmail.com

Abstract: In today's globalized world, cultural differences can lead to conflicts and challenges in personal and professional settings. This presentation explores effective strategies for intercultural conflict resolution and cultural adaptation, highlighting the importance of empathy, active listening, and cultural intelligence. We will discuss practical approaches to navigating cultural differences, building strong relationships, and fostering inclusive environments. As organizations increasingly engage in global partnerships, navigating cultural differences and building strong relationships becomes essential. This study examines the role of social intelligence in facilitating effective cross-cultural collaboration and cooperation. Social intelligence refers to the ability to understand and navigate complex social situations. It involves being aware of one's own emotions and those of others, as well as managing and regulating emotions effectively. In cross-cultural collaboration,

social intelligence is critical for building trust, managing conflicts, and facilitating effective communication. This study has several limitations. Firstly, the sample size was relatively small, and future studies should aim to collect data from a larger, more diverse sample. Secondly, this study focused on social intelligence as an individual-level construct, and future studies should explore the role of social intelligence at the team and organizational levels. Future research should explore the role of social intelligence in specific cultural contexts and industries. Additionally, studies should examine the impact of social intelligence on team and organizational performance in cross-cultural collaborations. Organizations should invest in social intelligence training and development programs to enhance the effectiveness of their cross-cultural collaborations. Individuals should prioritize developing their social intelligence skills to improve their ability to navigate complex cultural situations.

Future research should explore the role of social intelligence in specific cultural contexts and industries. However, working with people from diverse cultural backgrounds can be challenging. Social intelligence plays a crucial role in facilitating effective cross-cultural collaboration and partnership. The findings of this study highlight the importance of social intelligence in facilitating effective cross-cultural collaboration and partnership. Organizations can benefit from investing in social intelligence training and development programs to enhance the effectiveness of their cross-cultural collaborations. Social intelligence plays a vital role in cross-cultural collaboration and partnership. By understanding and developing social intelligence, individuals and organizations can enhance their ability to navigate complex cultural situations and build strong, effective relationships. Social intelligence plays a crucial role in facilitating effective cross-cultural collaboration and partnership. It enables individuals to navigate cultural differences effectively, build strong relationships, and communicate effectively. Organizations can benefit from investing in social intelligence training and development programs to enhance the effectiveness of their cross-cultural collaborations.

Keywords: - Cross-Cultural Collaboration, Partnership, Cultural Diversity, Communication, Trust, Conflict Resolution, Organizational Performance



From Data to Decisions: The Role of AI in Shaping Competitive and Corporate Strategies

Shikha Dugar and Giti Vatsa

Biyani Institute of Science and Management, India

Corresponding Email: gitsgbi@gmail.com

Abstract: The mystery word Artificial Intelligence (AI) has now revolutionized business strategies. The AI-driven insights are backed by data, enhancing the overall efficiency and accuracy. Machine learning, a subset of AI, analyzes the trends, patterns, and behaviors of businesses, improving the efficacy of managerial decision-making skills. This research paper tries to investigate the transformative impact of Artificial Intelligence (AI) on corporate and competitive strategy formulation. Earlier, the formulation of corporate and competitive strategy was made by top-level management, making use of empirical data analysis based on their experience and intuitions. The AI tool embraced the core strategic process of the firms, influencing the high-level decisions. AI tools have been adopted in various key business domains, increasing predictive analytics, personalized experiences, and operational efficiency. The key domains where AI has impacted business organizations are:

- Marketing
- Finance
- Customer Service and Human Resources
- Logistics and supply chain

A mix of qualitative and mixed-method approach can be an effective approach for digital age analysis, helping formulate core corporate strategies. The core strategic concepts, like Porter's Five Forces or the Ansoff Matrix, aligned with Artificial Intelligence (AI) can be helpful to predict and forecast the competitors' marketing and corporate strategies, and find ways to grow accurately at a faster pace. This research would contribute an empirical, theory-building study to the fields of strategic management and information systems, offering a new framework for "AI-Augmented Strategy". It would provide a clear-eyed view for executives on the realistic opportunities and challenges of integrating AI into their core strategy. It would move the conversation beyond hype to practical application, offering insights on the necessary organizational structure, talent, and leadership mindset.

The adoption of AI has improved three major areas of the business enterprises, namely in corporate planning, optimized allocation of resources, and data-driven strategic planning, and in risk management. The analysis of data has made the businesses work under automated activities with a reduction in the manual workloads, enhancing the overall formation of corporate strategies.

The adaptation of AI has also enhanced the overall customer retention with increased customer handling and response time, with quick suggestions. AI has boosted the marketing channels with automation of marketing tools, resulting in higher engagement and conversion rates. Moreover, AI has significantly transformed decision-making processes by enabling predictive analytics and real-

time insights. Businesses are now able to forecast market trends, consumer behavior, and operational challenges with higher accuracy. This not only allows enterprises to stay ahead of competitors but also supports proactive strategies that minimize uncertainties. By integrating AI into supply chain management, human resource planning, and financial forecasting, organizations are achieving greater agility and resilience in a rapidly changing business environment.

Artificial Intelligence has emerged as a cornerstone in reshaping corporate and competitive strategies by embedding data-driven intelligence into every facet of decision-making of the organizations. From resource allocation optimization and customer experience enhancement to strengthening risk management and predictive forecasting, AI tools have moved beyond being a technological tool to becoming a strategic enabler. The integration of AI with established strategic frameworks such as Porter's Five Forces and the Ansoff Matrix demonstrates its potential to not only refine traditional approaches but also to open new pathways for sustainable growth and competitive advantage. AI offers immense opportunities for efficiency and innovation; its successful adoption demands a reconfiguration of organizational structures, leadership vision, and talent capabilities. Ultimately, enterprises that embrace AI as a strategic partner rather than a supplementary tool will be better positioned to thrive in the dynamic and uncertain business landscape of the digital age.

Keywords: AI, Corporate Strategies, Data analysis, corporate decisions



Technological, Economic, and Social Implications of the Changing Workplace: A Study of India and Japan

Jyotsna Mehta

S.S. Jain Subodh Management Institute, Jaipur, INDIA

Corresponding Email: smi.jyotsnadmehta@gmail.com

Background: The future of work is being fundamentally reshaped by rapid technological change, economic restructuring, and social transformation. Globally, automation, artificial intelligence (AI), and digital platforms are altering labor demand and job design, while demographic transitions and shifting worker expectations influence participation patterns and social contracts. India and Japan represent two sharply contrasting yet complementary case studies. India, with its large and youthful labor force, is experiencing rapid digital adoption, a growing gig and platform economy, and an evolving skilling ecosystem, and yet unemployment and under-employment are big challenges. In contrast, Japan is technologically greatly advanced, yet it is grappling with a shrinking and aging workforce, persistent labor shortages, and long-standing challenges related to work-life balance. This research investigates how these two nations, situated at different demographic and developmental stages, are negotiating the technological, economic, and social dimensions of the future of work.

Methodology: The study adopts a comparative research design and relies on secondary sources published between 2017 and 2025, including the India Employment Report 2024 (ILO-IHD), the NITI Aayog Gig and Platform Economy Report (2022), McKinsey Global Institute’s Jobs Lost, Jobs Gained study, and official statistics from the Statistics Bureau of Japan. Supplementary evidence was drawn from labor force surveys, industry analyses, and policy reports addressing demographic trends, workforce participation, technological disruption, and work-style reforms. The data were triangulated to map employment structures, automation exposure, gig economy growth, and institutional responses in both countries.

Result and Discussion: The findings underscore divergent trajectories. In India, the gig workforce, estimated at 7.7 million in 2020–21, is projected to grow to 23.5 million by 2029–30, driven by e-commerce, delivery services, and ride-hailing platforms. This expansion enhances labor market access, especially for women and youth, but raises concerns about job security, income volatility, and lack of formal protections. Recent policy initiatives, such as Karnataka’s 2025 bill mandating platform contributions to a gig workers’ welfare fund, signal early steps toward institutionalizing protections. At the same time, youth unemployment remains a pressing issue, with urban educated unemployment rates exceeding 19% in 2025, highlighting structural mismatches between skills and available jobs. In Japan, the future of work is dominated by demographic decline: 29.3% of the population is already aged 65+, and projections suggest a labor shortage of over 6 million workers by 2030. To offset this deficit, Japan is intensifying its reliance on automation and robotics through the “Society 5.0” initiative, with applications spanning retail, healthcare, agriculture, and logistics. Yet, technological adoption is accompanied by social reform pressures. Long-standing issues of “karoshi” (death by overwork) and low fertility rates have prompted policies promoting shorter workweeks, flexible hours, and gender inclusivity. Emerging trends, such as “quiet quitting” among younger workers, reflect shifting attitudes toward work-life balance. Automation potential is also markedly higher in Japan, with 26% of jobs exposed under McKinsey’s midpoint scenario, compared to 9% in India, underscoring different intensities of technological disruption.

Conclusion: India and Japan embody distinct yet converging challenges in the future of work. India’s priority lies in converting its demographic dividend into sustainable employment by formalizing the gig economy, scaling skill development, and ensuring equitable access to digital opportunities. Japan’s path emphasizes leveraging automation to counter labor shortages while reforming entrenched work practices to ensure worker well-being. Despite differences, both contexts highlight the dual imperative of aligning technological innovation with inclusive policies that safeguard social equity. Cross-learning, which means learning from India and Japan’s experiences with productivity-enhancing automation and welfare systems, and Japan’s digital public infrastructure and platform dynamism, promises to offer pathways toward resilient, equitable, and human-centered futures of work.

Keywords: Future of Work, Gig Economy, Automation, Demographics, Work-life Balance, Labor Policy, Technological Change, Comparative Analysis



Business Analytics and the Future of Work: Navigating Technological, Economic, and Social Implications

Rubina Sajid¹, Sakshi Arora², and Suresh Jangid¹

¹*Maharishi Arvind Institute of Science and Management, Ambabari, Jaipur*

²*JECRC University, Jaipur*

Abstract : The "Future of Kama" has emerged as a significant global conversation topic in the twenty-first century. In addition to altering company models, technological innovation, digital transformation, and developing analytics capabilities have had a significant impact on organizational strategies, labor markets, and social structure. The goal of this paper, which concentrates on the subject of "Business Analytics and Future of Work," is to comprehend how data-driven approaches might offer companies direction in light of shifting social, technological, and economic circumstances. From a technical perspective, advancements such as automation, robots, machine learning, and artificial intelligence are changing how things are done. Because of this, production is rising, but the skills gap and Reskilling challenges are also emerging. Economically speaking, new arrangements like the gig economy, remote work, and hybrid work models are altering employment trends, necessitating new approaches from businesses in terms of cost control, luring top talent, and competing globally. At the same time, aspects like work-life balance, diversity, and inclusion have grown in significance. In light of this, business analytics is becoming a potent tool that helps with monitoring and determining the future course by examining vast amounts of data, in addition to helping with comprehending these developments. With data-operated insights, organizations can now predict technology adoption rates, market demands, and personnel productivity. Accordingly, our study shows that the future of work is a multifaceted phenomenon shaped by intricate interactions between management choices, social expectations, and economic behavior rather than being just dependent on technical advancement. Therefore, this study concludes that firms can create a technologically sophisticated, economically viable, and socially responsible workplace by strategically utilizing business analytics, in addition to maintaining a competitive edge.

Keywords: Business Analytics, Future of Work, Artificial Intelligence, Automation, Gig Economy, Workforce Transformation, Digital Transformation

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Explainable AI for Banking and Financial Services: Enhancing Transparency and Trust in Digital Transformation

Parul Pareek and Ruchi Sethi

Maharishi Arvind Institute of Science and Management, Ambabari, Jaipur

Abstract

Background: The swift integration of Artificial Intelligence (AI) within banking and financial sectors has transformed how operations are managed, improved customer interactions, and enhanced risk control. However, the “black-box” nature of many AI systems poses significant challenges regarding transparency, accountability, and regulatory compliance in the highly regulated banking sector. **Methodology:** This research examines the implementation of Explainable AI (XAI) frameworks in banking through a comprehensive analysis of current literature, case studies, and regulatory requirements. The study investigates XAI techniques, including SHAP (Shapley Additive exPlanations), LIME (Local Interpretable Model-agnostic Explanations), and attention mechanisms applied to critical banking operations such as credit scoring, fraud detection, and risk assessment. **Results:** Findings demonstrate that XAI implementation significantly improves regulatory compliance, enhances customer trust, and enables better risk management. Key results show that banks utilizing XAI frameworks experience 35% improvement in regulatory audit outcomes, 28% increase in customer satisfaction scores for loan decisions, and 42% reduction in bias-related complaints. The research identifies optimal XAI techniques for different banking applications and proposes a comprehensive governance framework for responsible AI deployment. **Conclusion:** Explainable AI represents a critical enabler for sustainable AI adoption in banking. The study concludes that successful XAI implementation requires integrated approaches combining technical solutions, governance frameworks, and stakeholder engagement. Financial institutions must prioritize transparency and explainability to maintain a competitive advantage while ensuring ethical and compliant AI deployment in the evolving digital banking landscape.

Keywords: Explainable AI, Banking, Financial Services, Digital Transformation, AI Governance



The Future of Work: Technological, Economic, and Social Implications”, with a focus on India and references to projects supported by both the Asian Development Bank (ADB) and the World Bank

Shiv Jhalani

Biyani Girl's College, Jaipur, India

Corresponding Email: com.shivt@biyanicolleges.org

Abstract: This paper explores how technological, economic, and social forces shape the future of work in India, with a particular lens on interventions by the Asian Development Bank and World Bank. Key case studies—from skill upgradation and industrial corridors to employment empowerment—demonstrate how targeted investments catalyze equitable employment, adapt to digital disruption, and ensure inclusive growth. The synthesis presents strategic insights for policy design, focusing on resilience, adaptability, and opportunity.

Background: India is navigating a transformative era, shaped by rapid automation, urbanization, climate pressures, and a burgeoning youth workforce. Addressing the future of work requires holistic strategies encompassing education, infrastructure, inclusion, and gender equity. The ADB and World Bank play pivotal roles by channeling resources into education, skills training, infrastructure, and social empowerment, aligning with India's broader development objectives.

Methodology, Results, and Discussion: These initiatives collectively demonstrate how integrated investment in skills, infrastructure, and institutional reform can drive a resilient, inclusive, and forward-looking workforce.

Technological Implications

Skills Training & Digital Readiness

- **ADB – Gujarat Skills Development Program:** In June 2025, the ADB approved a \$109.97 million results-based loan to modernize 11 mega Industrial Training Institutes (ITIs) and establish Centers of Excellence under Kaushalya Skill University. Focus areas include automotive, IT, healthcare, renewable energy, logistics, and agri-tech sectors. The initiative targets disadvantaged groups, aiming to train 175,000 individuals and ensure 60,000 advanced-skilled graduates by 2030.
- **World Bank – Skill India Mission Operation (SIMO):** Launched in 2017 with a \$250 million loan, SIMO has trained nearly 6 million youth—34% of them women—with 40% finding wage employment within six months. To strengthen institutional capacity, SIMO supported the formation of over 700 District Skill Committees, trained thousands of trainers and assessors, and developed infrastructure such as the Skill India Portal and market-aligned qualification packs.

- **World Bank – Generation India (Project AMBER):** Through the SANKALP framework, co-funded with the World Bank, this initiative trained ~24,000 youth—with 51% women—65% of whom secured jobs within three months. The model is being scaled to support 100,000 youth nationwide under PMKVY.

Leveraging Public–Private Partnerships: In Uttarakhand, World Bank–supported Centers of Excellence at ITIs in Haridwar and Kashipur, partnered with Philips and Schneider Electric, offer advanced technical training. Graduates now earn 2.5–3× the average ITI wage and are employed in secure, career-oriented roles.

Economic Implications:

Infrastructure & Corridor Development

- **East Coast Economic Corridor (ECEC):** Partnering with the ADB, India is developing its first coastal industrial corridor, spanning Kolkata to Kanyakumari. ADB has committed \$500 million to infrastructure and an additional \$125 million for policy reforms to enable industrialization, global value-chain integration, and job creation in lagging regions
- **Visakhapatnam–Chennai Industrial Corridor (VCIC):** A key component of ECEC, this corridor program benefits from ADB’s \$500 million Multi Tranche Financing Facility (MFF) and \$125 million policy-based loan, aimed at infrastructural development and institutional strengthening. An estimated \$2.8 billion in investments is anticipated over five years.
- **Multi-Modal Logistics Parks (MMLPs):** As lead partner, ADB supports India’s plan to build 35 logistics parks under PPP/DBFOT models, with pre-feasibility assessments completed for strategic sites like Bengaluru and Guwahati

Enhancing Human Capital & Competitiveness: The World Bank supports India’s Competitiveness & Jobs Agenda, aiming to strengthen the business climate, firm capabilities, connectivity, logistics, skills, and women’s access to quality jobs. So far, \$8.64 billion has been committed across multiple Indian states, with \$3.77 billion disbursed.

Social Implications

Gender Inclusion & Livelihood Empowerment: WE-SAFE (Tamil Nadu): A World Bank–funded project worth ₹1,185 crore (~\$410 million), WE-SAFE focuses on increasing women’s participation in high-growth, non-agricultural jobs over five years. As part of broader development, it complements marine management and rural rejuvenation projects.

- **Awareness & Grassroots Leadership:** At Kerala’s Skill Summit, the state’s initiative "Work from Kerala", alongside others, highlighted partnerships with global bodies, including the ADB and World Bank, to skill 200,000 final-year students and create jobs for 100,000 youth, especially homemakers and unemployed professionals

- *Integrated Skilling Ecosystems:* The ₹60,000 crore ITI Upgradation and NSTI initiative—co-financed equally by ADB and the World Bank—will enhance infrastructure and establish five National Skill Training Institutes to train over 2 million youth over five years in cities like Bhubaneswar, Chennai, Hyderabad, Kanpur, and Ludhiana.
- *Demographic Dividend Under Threat:* The World Bank warns of India's risk of squandering its youth advantage due to insufficient job creation; in 2023, youth unemployment stood at 45.4%. To avoid this, India must boost trade openness, land access, and private sector activity.

Conclusion: India's future of work hinges on a triad of advancement: technological readiness, economic transformation, and social inclusion. ADB and World Bank interventions—ranging from industrial corridors and skills institutions to livelihood empowerment and gender-focused schemes—offer a blueprint to tackle disruption, demography, and inequality head-on. Sustainable labor markets require synergy across education, infrastructure, and policy frameworks, ensuring India's workforce can thrive in an evolving global economy.

Keywords: Future of Work, India, World Bank, ADB, Skills Development



Harnessing Artificial Intelligence for Disaster Preparedness: A Case of Flood Prediction in Punjab

Gazal Tiwari

Biyani Institute of Science and Management, Jaipur, India

Corresponding Email: gzlt784@gmail.com

Background: Artificial Intelligence (AI) has become a defining technology of the 21st century, with applications in healthcare, education, agriculture, and governance. Its strength lies in processing vast datasets and generating insights that support better decision-making. Despite these advancements, disaster preparedness and management remain areas where AI is underutilized. Climate-related disasters are becoming more frequent and severe, creating risks for human life, infrastructure, and economic stability. Punjab, India, has recently suffered devastating floods caused by intense rainfall, resulting in widespread damage. These events reveal the vulnerability of flood-prone regions and the absence of effective, locally tailored early-warning systems. While progress has been made globally in climate modeling, localized applications of AI for predicting and managing disasters remain limited. This gap highlights the need to explore AI's role in strengthening disaster resilience.

Methodology: The study will use rainfall and flood records from government and weather departments. These records will be examined to identify patterns and trends that could support more reliable flood predictions in Punjab.

Result & Discussion: The research is expected to contribute in two ways. First, it will demonstrate the potential of AI-based approaches for localized flood prediction. Second, it will highlight the social benefits of using AI to protect vulnerable communities, reduce economic losses, and strengthen resilience. By addressing an underexplored field, the study positions AI not only as a technological advancement but also as a humanitarian tool aligned with sustainable development goals.

Conclusion: Integrating AI into disaster preparedness frameworks can improve community responses to natural hazards. Through better predictions and timely alerts, AI can help save lives, reduce losses, and promote long-term resilience. The study underlines that AI, when thoughtfully applied, is a vital instrument for advancing social good.

Keywords: Artificial Intelligence, Social Good, Disaster Preparedness, Flood Prediction, Punjab, Sustainable Development.

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Navigating Global Convergence: Opportunities and Obstacles in Collaborative Cybersecurity and Digital Governance

Sonal Verma

Biyani Institute of Science and Management, Jaipur, India

Corresponding Email: sonal98verma@gmail.com

Background: Digital Governance, or the use of technology, is important in today's world as it improves exposure and decision-making power of any organization, along with the enhancement of its transparency, efficiency, and better service delivery. This digital transformation has also created new challenges for cybersecurity and digital governance, threatening the stability and trust of the digital ecosystem. The major problems at this global convergence include increasingly sophisticated cyber threats like ransomware and phishing, vulnerabilities in cloud and Internet of Things (IoT) devices, human-error-driven insider threats, and outdated legacy systems. As the world becomes increasingly interconnected, partnerships between governments, businesses, and civil society are essential for addressing these challenges and harnessing the opportunities of the digital age. This research paper coalesces some of the scattered but representative guidelines, rules, and practices that are in existence in digital and risk governance. The research paper also lists out the improvements in day-to-day practices so that a regulatory framework can be formed, keeping in view the priority for holistic development.

Methodologies: This study uses a mixed-methods approach, combining qualitative and quantitative analysis to examine the challenges and opportunities of cybersecurity and digital governance in a connected world. A comprehensive review of existing literature and case studies is conducted to identify best practices and areas for improvement in global convergence partnerships. Additionally, expert interviews and surveys are used to gather insights from stakeholders in the technology, business, and law sectors.

Result and Discussion: The study reveals that partnerships can play a crucial role in enhancing cybersecurity and digital governance by facilitating information sharing, coordinating response efforts, and promoting international cooperation. However, challenges such as differing regulatory frameworks, cultural and linguistic barriers, and unequal access to technology and resources can hinder the effectiveness of these partnerships. The study also identifies opportunities for innovation and growth in areas such as artificial intelligence, blockchain, and the Internet of Things (IoT). The research highlights the necessity of developing and implementing integrated, multi-layered cybersecurity strategies within e-governance systems to improve resilience and ensure secure service delivery. The findings highlight the need for a collaborative and multi-stakeholder approach to addressing cybersecurity and digital governance challenges. Partnerships can help to build trust, promote cooperation, and facilitate the development of common standards and best practices. However, these partnerships must be carefully designed and implemented to account for the diverse needs and interests of different stakeholders.

Conclusion: In conclusion Partnerships are essential for creating a secure and well-governed digital world. Governments need to adopt transparent security practices to build and maintain public trust in their digital services. By fostering collaboration, innovation, and cooperation, partnerships can help to address the complex challenges of cybersecurity and digital governance. Policymakers, business leaders, technologists, and other experts in the digital field must work together to develop and implement effective partnerships that promote a safe, secure, and inclusive digital environment for all. This approach is highly suggested for holistic cybersecurity governance frameworks that align security policies with organizational objectives and address strategy, control, and regulation is frequently identified.

Keywords: Digital Partnerships, Cyber Security, Digital Governance, Multi-Stakeholder Approach, Global Cooperation



The Future of Work: Technological, Economic, and Social Implications

Mumal Singh

Biyani Institute of Science and Management, India

Corresponding Email: mumalsingh526@gmail.com

Background: The future of work is becoming one of the most important topics in today's world. Work is no longer the same as it was in the past because technology, the economy, and society are changing very quickly. New machines, artificial intelligence (AI), and digital platforms are helping companies to complete tasks faster, save money, and reach more customers. At the same time, these changes are creating fear about job loss and unemployment for workers who do simple or routine jobs. Economically, globalization and digital platforms are creating new types of work, such as freelancing, gig jobs, and remote jobs, where people can work from home or from anywhere in the world. Socially, the meaning of work is also changing. Work is not only a way to earn money but also a way to build identity, dignity, and social relationships. Because of these reasons, it is important to understand how the future of work will affect people, organizations, and society as a whole.

Methodology: This study is based on a simple review of books, reports, and case studies. The comparison is made between traditional work systems, like office-based or factory jobs, and modern work systems such as online work, hybrid work, and AI-supported jobs. Real-life examples are taken from both developed countries, where technology is very advanced, and developing countries, where technology is growing slowly. This helps in showing the complete picture of how the future of work will look in different parts of the world.

Results and Discussion: The findings of the study show that technology has two sides. On the positive side, automation and artificial intelligence can make work easier, faster, and more accurate. They can create new industries, new jobs, and better services. On the negative side, many routine and low-skill jobs may disappear, and workers without proper training will find it difficult to get good jobs. This creates the need for continuous learning, reskilling, and up-skilling. Economically, the future of work is moving towards flexibility. More people will work as freelancers, gig workers, or in part-time jobs. While this gives workers more freedom, it also brings challenges like job insecurity, low income, and lack of benefits such as health insurance or retirement funds. At the same time, businesses will save costs and reach wider markets through digital systems.

Socially, the changes in work affect people's lives deeply. Work is not just about money—it also gives respect, social connections, and self-worth. Remote work and digital workplaces increase diversity and global teamwork, but can also lead to social isolation and mental stress if workers feel disconnected. Another important issue is the digital divide, where people who do not have access to technology may be left behind.

Conclusion: The future of work is a continuous process of change shaped by technology, economy, and society. To face these changes positively, governments should make strong labor policies, businesses should train their employees, and individuals should accept lifelong learning. Only through cooperation between all sides can the risks be reduced and opportunities increased. If managed carefully, the future of work will create not only more efficiency and growth but also fairness, inclusiveness, and human well-being.

Keywords: Future of Work, Technology, Economy, Society, Employment



The Role of Social Media in Transforming Marketing Management

Pranjal Gupta

*Biyani Institute of Science and Management, India
Corresponding Email: pranjalgupta139@gmail.com*

Background: Social media is an indispensable tool for communication has caused a paradigm shift in marketing management. Social media has changed the dynamics from a product-centric and one-way communication approach to a revolutionized business engagement or customer-centric centric. Social media has shifted the power from management to the customers as it shifted from “What marketer wants to show you” to “What customers need to see or know”. Social media has played a vital role in reshaping the marketing management’s role by making it more dynamic, interactive, and data-driven.

Methodology: This study examines how businesses are actively using social media in their marketing management strategies. This study adopts a qualitative approach in order to analyze and understand how social media has transformed marketing management practices globally and locally.

Finding:

- Social media is much more cost-effective as compared to traditional printing methods and has a global reach, which helps small businesses to increase their reach and compete with large businesses.
- It helped in Real-Time Engagement as the queries, feedback, and complaints reach the business fast with quicker resolution, building loyal customers.
- Allows managers to design campaigns for niche audiences with greater accuracy than traditional mass marketing. Personalized advertising creates stronger customer-brand connections.

- Social media helped in Customer Relationship Management (CRM) by building an environment that helped the customer feel valued, like after-sales services, etc., later helping businesses in the long term.

Conclusion: The Impact of social media increased from 2015, creating 2.08 billion users, which gradually increased till 2025. This influenced each and every aspect of the market, as due to social media, everything is now available easily and is a click away. Markets benefited from it because of its global reach and giving an edge to the local and small businesses to play in the international market. No doubt, if there are positive aspects, there are negative impacts of social media as well, but the boost in the economy brought by social media, Globalization, etc is definitely cannot be ignored.

Keywords: Marketing Management, Personalized Customer-Brand Connections, Customer Relationship Management, Real-Time Engagement.

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Leveraging AI for the Benefit of Society

Kanika Gautam

Biyani Institute of Science and Management, India
Corresponding Email: kanika.gautam.215@gmail.com

Abstract: Artificial Intelligence for Social Good (AI4SG) refers to the application of AI technologies to address critical societal challenges in domains such as healthcare, education, environmental sustainability, disaster management, social welfare, and human rights. Advances in machine learning have created opportunities to design data-driven solutions that are both practical and scalable, with applications ranging from early disease detection and personalized learning tools to disaster response and climate resilience. In contexts such as India, AI is already being tested for weather forecasting and crop monitoring, demonstrating its potential impact on everyday life. However, the benefits of AI remain unevenly distributed, as issues of accessibility, affordability, and algorithmic bias pose significant barriers. Without deliberate efforts to ensure inclusivity, AI risks deepening existing inequalities rather than reducing them. This study, informed by scholarly sources and grounded in personal observations, highlights both the promise and the limitations of AI4SG, emphasizing that technology alone is insufficient. Its true potential lies in how governments, institutions, and communities integrate AI into practice to create fair, accessible, and socially transformative outcomes.

Keywords: AI4SG, Artificial Intelligence, Social Good, Ethics, Education, Sustainability

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Cyber Security and Digital Governance: Challenges and Opportunities

Tanisha Shekhawat

Biyani Institute of Science and Management, India

Abstract: The incorporation of digital technologies into governance has transformed the interactions between governments, corporations, and citizens, enhancing transparency, efficiency, and accessibility through tools such as blockchain-enabled records, AI-driven decision-making, and e-governance portals. However, this transformation also brings significant challenges, including disinformation campaigns, ransomware attacks, and cyber intrusions that compromise critical services and erode public trust. This research adopts a multidisciplinary approach, drawing on government reports, case studies, expert perspectives, and citizen sentiment to qualitatively analyze emerging models of digital governance and cybersecurity policies. Findings reveal that while governments are increasingly aware of cyber risks, responses remain uneven, with rapid adoption often outpacing secure infrastructure development. Countries demonstrating resilience tend to integrate robust regulation, public-private collaboration, global cybersecurity norms, AI-driven threat detection, and citizen-centric safeguards such as data privacy protections. The study concludes that cybersecurity is no longer a technical afterthought but a foundational element of sustainable digital governance. Achieving a balance between innovation and resilience requires governance models that prioritize ethics, inclusivity, and cross-border collaboration, ensuring that digital transformation strengthens rather than undermines trust in government.

Keywords: Digital Technologies, Cybersecurity Policies, Digital Transformation, Artificial Intelligence, Sustainability

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The Future of Work: Technological, Economic, and Social Implications

Vanisha Hasrajani

Biyani Institute of Science and Management, India
Corresponding Email: vanishahasrajani7@gmail.com

Abstract: This abstract provides an overview of “The Future of Work,” which is being linked with many real-world scenarios. Rapid changes are affecting the workers, large MNCs, and society. Technologies like AI and automation can change jobs and are creating new opportunities, but also challenges. The economy will depend on how people adapt new digital skills and stay competitive

in a global market. Socially, the way people work will influence their mental health and create a work-life balance. All these implications are important for the growth and advancement of a firm, society, and nation as a whole.

Introduction: Emerging technologies such as artificial intelligence, automation, and remote collaboration tools are changing the very jobs and skills we will need to work, as well as building and work environments. While these new technologies may offer promise for higher productivity and new kinds of work, they also raise concerns about job displacement, digital inequalities, and the need for lifelong upskilling. At the economic level, the development of gig economies has provided employment and has shifted workers' employment tradition and offering greater choice of flexibility and greater employment security. On the social side, the meaning of work-life balance and approach to mental health all forcing organizations to rethink how they operate and engage with employees continuously, and rethink their culture and strategies. To address the continuously changing nature of the world, we need flexible policies, better economic planning, and innovative education systems that can help ensure that the benefits from technological progress are reached worldwide. Real-world examples are remote, hybrid work after COVID-19 – Companies like Microsoft, Google now offer flexible work models where employees can work partly from home and partly from the office. Current Data- A 2025 World Economic Forum report projects that by 2030, 22% of current jobs will be transformed, with 170 million new roles created and 92 million displaced, resulting in a net increment of 78 million jobs.

Methodology: This study is based on secondary data collected through e-journals, a research paper, the World Economic Forum report 2025 by Saadia Zahidi, managing director, and the European Journal of Future Research

Result and Discussion: As a result, this abstract discusses the landscape of how people, employees, and societies will shape accordingly with the changes in the tech field in the near future. It is resulting in better economic conditions for India as well as the world. For further discussions, it can bring opportunities as well as challenges, which may widen the gap between the skilled and unskilled workforce.

Conclusion: As we conclude this topic, it is necessary to understand how will be the future of work will be and how the workforce can speed it up with the latest technologies and how it affects economically to a country economically. This approach can enhance student engagement and practical skill development.

Keywords: Gig economies, Remote collaboration, Digital inequalities, Hybrid work, Artificial Intelligence



Data Analytics Shapes Managerial Decisions in Marketing

Monalika Vyas

Biyani Institute of Science and Management, India

Abstract: Data analytics plays a crucial role in guiding managerial decisions in converting raw data into useful information. It provides managers with insight into customer actions, preferences, and market trends, and offers them the ability to make more accurate and effective marketing decisions. This enables managers to respond rapidly to market changes, allocate budgets effectively, and enhance return on investment through evidence-based choices. The widespread adoption of analytics tools has produced significant competitive advantages in both digital and traditional marketing environments.

Methodology: Managers apply data analytics tools to generate insights from customer data distributed across sources, e.g., purchase patterns or online interactions. Methods such as segmentation, predictive modeling, and real-time monitoring help in the generation of intelligent decisions.

Result and Discussion: Decisions that leverage data make better marketing outcomes possible – through targeted campaigns, smart appropriation of resources, and greater customer engagement. Organizations already adopting data analytics have higher conversion rates, optimal marketing channel utilization, and faster processing of market changes.

Conclusion: Data analytics gives marketing managers the ability to make smart choices that improve efficiency, personalize how they engage with customers, and provide a competitive advantage in the fast-paced competitive marketplace.

Keywords: Data analytics, marketing decisions, managerial strategy, campaign optimization, customer segmentation

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Shaping the Future of Work: Social, Economic, and Technological Impacts

Tabassum Yasmin

Biyani Institute of Science and Management, India

Corresponding Email: tabassumshaikh1907@gmail.com

Abstract: The world of work is changing faster than ever before. The main reasons are new technology, changes in the economy, and new social needs. Today, machines, apps, and artificial intelligence are doing many jobs that people once did. For example, robots can help in factories, and AI tools can do office tasks. This makes work faster and sometimes cheaper, but it also makes

people worry about losing jobs. At the same time, it is creating new kinds of jobs that need new skills. This is why learning and updating skills have become very important for students and workers in today's world.

The economic side of work is also changing. Long ago, people wanted only permanent jobs in offices or companies. But now freelancing, gig jobs, and online work are becoming common. For example, people can work as online tutors, delivery partners, YouTubers, or freelancers from home. This gives more freedom and flexibility, but it is not always stable. Some months people earn well, and other times they struggle. Unlike permanent jobs, there is less security and fewer benefits. So, while this new economy brings more options, it also brings stress and uncertainty.

Methodology: Social life at work is changing, too. People today do not just look at salary. They want a good balance between work and personal life. They want to work in safe and healthy environments where they feel respected. Young people especially want jobs that make them happy and give them purpose. Inclusivity, gender equality, and mental health are now very important. The COVID-19 pandemic also taught us that many jobs can be done from home. Working from home is comfortable and saves travel time, but it also creates problems like loneliness, less teamwork, and sometimes overwork. This shows that social needs are as important as technology and money in the future of work.

Result and discussion: The changes we see bring both good and bad results. Technology is giving us new opportunities in fields like digital marketing, app development, data science, and online businesses. But at the same time, old jobs in factories or routine office work are slowly disappearing. The gig economy gives people freedom, but workers also feel insecure because they do not have a fixed salary. On the positive side, many companies are now paying more attention to employee well-being and diversity. Schools and colleges are also slowly changing by teaching more practical and skill-based courses, which is very important for preparing students for the future. From all this, we can discuss that the future of work is not only about machines taking over. It is about finding balance. Technology can help, but people also need security, fairness, and jobs that give meaning. The younger generation especially wants careers that give both money and satisfaction.

Conclusion: In conclusion the future of work is shaped by technology, economy, and society together. Companies should train workers and create friendly workplaces. Governments should make fair rules to protect workers and reduce inequality. Schools and colleges must focus on teaching skills that are useful in real life. If all of us-workers, businesses, governments, and educators work together, the future of work can be not only modern and digital but also fair, inclusive, and human-friendly.

Keywords: Technology, Gig Economy, Skills, Work-Life Balance, Future of Work



Partnerships for Digital Success

Neha Jha

Biyani Girls College, Jaipur, India.

Corresponding Email: neha141105@gmail.com

Abstract: In today's rapidly evolving digital landscape, partnerships have emerged as a crucial driver of success. Partnerships for Digital Success involve collaboration between organizations to leverage digital technologies, enhance capabilities, and drive innovation. By converging expertise, resources, and innovative capacities, organizations can transcend traditional boundaries and unlock new avenues for growth and value creation. Also, it helps businesses to grow, achieve their goals, and stay ahead of the competition.

Methodology: The digital edge has brought multiple opportunities for businesses to innovate and grow. Partnerships in the digital industry focus on exploring the benefits, challenges, and best practices of collaborative innovation. Partnerships emerged as a strategic alliance to address the challenges, enabling businesses to leverage each other's strengths and expertise, and resources to drive success.

Result and Discussion: This highlights how partnerships can drive innovations, improve competitiveness, and enhance market value. Also, it considers the importance of strategic alignment, clear communication, and mutual benefit in Partnerships for Digital success.

Conclusion: In today's digital landscape, partnerships are no longer a nicety but a necessity. By harnessing the power of collaborative innovation, businesses can unlock new opportunities, drive growth, and stay ahead of competition. As the digital world continues to evolve at breakneck speed, businesses that price their partnerships will be positioned to thrive in a dynamic world.

Keywords: Partnerships, Innovation, Collaboration, Expertise, Growth

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Digital Transformation in business and Legal practices

Priyanka Kumawat

Biyani Institute of Science and Management, India

Corresponding Email: kumawatpriyanka284@gmail.com

Background: Digital transformation has become one of the most influential forces shaping organizational competitiveness and governance in the 21st century. Businesses are increasingly adopting artificial intelligence (AI), big data analytics, cloud computing, and blockchain technologies to enhance agility, decision-making, and customer engagement. At the same time, legal practices are undergoing unprecedented change, with electronic discovery platforms, digitized case management systems, and AI-powered contract analysis redefining efficiency and service delivery. While these developments create opportunities for innovation, they also raise new challenges concerning cybersecurity, data privacy, regulatory compliance, and professional ethics. The

convergence of business and legal digitalization, therefore, demands an integrated scholarly examination of how organizations can maximize the benefits of transformation while mitigating risks.

Methodology: The study adopts an interdisciplinary and exploratory research design. Secondary sources, including peer-reviewed literature, industry case reports, and policy documents, were systematically reviewed to capture trends in digital adoption within both business and legal contexts. Comparative analysis was employed to identify common drivers, barriers, and outcomes of digital transformation across domains. In addition, selected case illustrations were analyzed to demonstrate practical applications of AI, blockchain, and cloud-based ecosystems, with particular attention to managerial strategies, inclusivity, and governance frameworks. This multi-layered approach enables a holistic assessment of digital transformation as both a technological and socio-organizational process.

Results and Discussion: The findings suggest that digital transformation has delivered measurable benefits in both sectors. Businesses report improved operational agility, enhanced data-driven decision-making, and stronger customer trust through personalized digital services. Legal practices adopting AI-driven tools experience reductions in case processing times, improved accuracy in document review, and greater accessibility for clients. Blockchain solutions further enhance transparency and accountability in both supply chain governance and contract enforcement. However, challenges remain significant. Cultural resistance, uneven digital literacy, and financial constraints hinder adoption in many business environments. Legal institutions face heightened complexity in balancing efficiency with professional responsibility, managing algorithmic bias, and complying with diverse jurisdictional regulations. Cybersecurity risks and data governance issues amplify these concerns, necessitating robust resilience strategies. Importantly, the study highlights the pressing need to integrate diversity, equity, and inclusion into technological design, as uncritical adoption risks reinforcing structural inequalities and ethical blind spots.

Conclusion: The research concludes that digital transformation should be understood as a continuous and adaptive process rather than a one-time technological upgrade. Its long-term success depends not solely on technological innovation but equally on managerial foresight, ethical safeguards, and inclusive governance frameworks. For businesses, digital transformation represents a pathway to sustainable competitiveness and innovation; for legal practices, it offers modernization while demanding a re-examination of professional ethics and regulatory practices. At their intersection, business and law can jointly foster ecosystems of accountability, transparency, and innovation. This paper contributes to scholarly and practical discourse by emphasizing the need for integrated strategies that balance technological potential with human-centered values. Ultimately, digital transformation must be approached as both an opportunity and a responsibility, which is a process that requires alignment between technology, governance, and society to ensure resilience, inclusivity, and sustainable growth.

Keywords: Digital Transformation, Legal Practices, Artificial Intelligence, Blockchain, Cybersecurity, Governance, Inclusivity



The Impact of Multinational Operations on Entrepreneurial Ventures: Changes and Benefits

Ridhika Sharma

Biyani Girls College, India

Corresponding Email: iridhika2020@gmail.com

Background: Entrepreneurial ventures are increasingly engaging in multinational operations—via exporting, alliances, or foreign set-ups—to access new markets, boost innovation, and diversify risk. Yet international engagement reshapes startups’ internal operations and strategic outlook in complex ways. This study explores how such ventures change and benefit from multinational involvement, employing perspectives from both corporate leadership and academic grounding in the USA and India.

Methodology: Adopting a mixed-methods approach, the study surveyed 200 entrepreneurs in India and the USA involved in multinational activities. Quantitative questions gauged performance metrics (growth, funding, operational maturity). Semi-structured interviews were conducted with 25 founders and corporate leaders to delve into governance changes, innovation dynamics, and cross-border strategy adaptations.

Result and Discussion: Quantitative findings indicate average revenue growth of ~40%, 70% access to foreign capital, and 50% adoption of formal governance frameworks. Interviews revealed enhanced organizational professionalism, strategic planning, localization-driven innovation, and elevated credibility through global networks. The dual-country perspectives uncover that USA-based ventures often leverage regulatory systems and branding, while Indian ventures capitalize on rising global demand and diaspora networks.

Conclusion: Multinational operations catalyze transformative changes in entrepreneurial ventures—boosting scalability, governance sophistication, market orientation, and resource access. Entrepreneurs should proactively build adaptive capacity for cross-border challenges. Policymakers should facilitate international networking platforms, compliance advisory services, and cross-border mentorship programs to reinforce these benefits.

Keywords: Entrepreneurship, International expansion, Organizational change, Innovation, Emerging markets, Cross-border strategy



Advancing Social Good through Artificial Intelligence

Parvi Kunjwal

Biyani Girls College, India

Corresponding Email: kunjwalparvi@gmail.com

Background: Artificial Intelligence (AI) is regarded as a business development and efficacy engine, although its true strength is in its capacity to establish a positive social impact. AI is being used to address healthcare, agricultural, disaster management, and educational problems around the world. As resources are limited and the challenges in developing nations (like India) are massive, AI can help in balancing the system by providing creative, affordable, and scalable solutions. Meanwhile, it also poses serious questions of fairness, access, and responsibility. The paper will discuss how AI can be used to serve the social good, specifically focusing on actual applications and the opportunities and risks associated with them.

Methodology: The article is based on the review of case studies, policy reports, and examples in the industry published between 2019–2025, and a survey on 100 undergraduate students in Jaipur. Examples of case studies are Ulangizi, which is a generative AI chatbot that assists farmers in Malawi with advice on crop management; the flood prediction model created by India AI, which is used to provide early warnings to potentially affected households; and the image analysis medical model created by AI, which enhances the detection of diseases, including cancer. The poll examined whether people are aware of AI for social good and how they view the risks involved and the desire to use AI-based tools. It analyzed its data according to descriptive statistics and thematic analysis.

Result and Discussion: The analysis concludes that AI is already giving back to society in a verifiable way. Ulangizi explains that AI chatbots would help farmers get advice that is both localized and cheap, leading to better crop management and better food security. In India, flood forecast models have enhanced warning systems in disaster management to save lives and to utilize the available resources in the best way possible. In healthcare, AI-based image analysis applications are helping doctors to identify diseases more precisely and at an earlier stage. But despite these findings, the survey found that although 70 percent of respondents perceived AI as having high potential for social benefit, 55 percent expressed worries regarding data privacy, 42 percent feared job loss, and 38 percent were not certain about the fairness of AI decision-making.

Conclusion: AI can be a social good when put into good practice. AI also has a direct impact on sustainable development, as it may predetermine the degree of food security, as well as save lives in the event of a natural disaster and alter healthcare outcomes. However, the potential is achieved through ethical frameworks, good governance, and collective effort. In order to ensure that AI is a civic good and not a privilege of a few, policymakers, technologists, and educators must work together to ensure that AI is a civic good. The AI of social good will limit not only the future of the technology, but also the values and protections by which the technology will be used.

Keywords: Artificial Intelligence, Social Good, Agriculture, Healthcare, Disaster Management



Need for a Google Cyber–Safe Searching Engine for Students

Diksha Saini

Biyani Institute of Science and Management, India

Corresponding Email: sainidiksha736@gmail.com

Introduction: Search engines such as Google and Yahoo are widely popular among people and are extensively used by students for educational purposes. The youthful and inquisitive minds of students are increasingly exposed to vast amounts of online information. This easy accessibility to information worldwide has made search engines indispensable for educational and research tasks. However, concerns remain regarding the safety and trustworthiness of the content accessed by students.

Methodology: This study examines the role of Google’s search engine in providing secure and reliable information for students. The focus is on how Google enables students to explore educational tasks, global knowledge, and online resources while ensuring cyber safety. The paper investigates students’ satisfaction and trust in Google search engine services with respect to academic use and safety concerns. A review of Google’s services, such as Google News, Google Books, Google Maps, and Google Translate, is also included to understand their relevance in education.

Results: Findings suggest that the Google search engine has become a vital educational tool for students due to its vast indexing of billions of web pages. Students perceive it as both accessible and effective for study-related searches. Services such as Google News (launched in 2002), Google Books, and other educational tools significantly aid learning and research. Despite its popularity, safety and reliability issues remain a critical aspect of students’ online experience, requiring continued emphasis on cyber-safe search practices. **Conclusion:** The study highlights the growing dependence of students on the Google search engine for academic and educational purposes. While Google provides access to diverse global knowledge and innovative tools, there is a need to ensure cyber safety and secure information access. The results emphasize that developing safe search practices is essential to enhancing student trust and satisfaction. Google, along with educational institutions, must promote safer online usage to safeguard students from harmful or misleading content.

Keywords: Search Engine, Translator, Google Calendar, Google Books



Legal Tech Innovation and Managerial Strategies

Sneha Khandelwal

Biyani Institute of Science and Management, India

Background: Legal services are undergoing a rapid transformation due to technological innovations. Artificial intelligence, document automation, predictive analytics, and blockchain have significantly altered how law is practiced and delivered. These technologies aim to improve efficiency, reduce costs, and increase access to justice, but they also introduce new challenges such as ethical concerns, data security, and resistance to change. The evolution of legal technology represents not only a technical shift but also a managerial and cultural one within law firms and corporate legal departments.

Introduction: The integration of legal technology is redefining the administration, delivery, and consumption of legal services. AI-powered tools streamline legal research, blockchain solutions enable transparent and secure transactions, and smart contracts automate dispute resolution and compliance processes. However, technology adoption requires careful managerial strategies to balance innovation with compliance, maintain client trust, and safeguard sensitive data. This study explores the role of leadership, adaptive strategies, and organizational culture in facilitating the effective adoption of legal technology in the legal sector.

Methodology: This study adopts a qualitative research approach through a review of existing literature on legal technology and managerial practices. Data sources include academic journals, industry reports, and case studies of legal firms implementing AI, blockchain, and automation tools. The focus areas are:

- Managerial strategies for adopting legal tech.
- Challenges such as data security, compliance, and organizational resistance.
- Best practices like adaptive leadership, agile project management, and continuous professional development.

The analytical framework is based on a comparative analysis of how legal departments and firms have responded to technological transformation.

Results and Discussion: The findings indicate that legal technology significantly improves efficiency by reducing time spent on research, compliance, and document review. Blockchain and smart contracts enhance transparency and accountability, but they demand strong data security frameworks. Adaptive leadership and agile project management emerge as effective managerial strategies to overcome resistance to change. The discussion highlights that adoption of legal technology is not purely technical but deeply managerial. Successful firms are those that integrate innovation while maintaining compliance and ethical standards. Resistance from legal professionals can be mitigated through participatory decision-making and transparent communication.

Furthermore, investment in professional development is crucial to ensure long-term benefits from technological integration.

Conclusion: Legal technology is reshaping the legal industry by enhancing efficiency, accuracy, and access to justice. However, without effective managerial strategies, the adoption process may face resistance, security risks, and compliance issues. Adaptive leadership, agile methodologies, and investment in professional growth are essential for balancing innovation with responsibility. Ultimately, legal technology, when managed effectively, can create a paradigm shift in how legal services are delivered and consumed.

Keywords: Blockchain, Data security, Compliance, Artificial intelligence, Legal services



Mergers and Acquisitions as a Growth Strategy in Emerging Markets

Garima Sharma

Biyani Institute of Science and Management, India

Corresponding Email: gsgarima3198@gmail.com

Abstract: Mergers and Acquisitions (M&A) have gradually become a primary growth strategy for companies in emerging markets. These markets are evolving with rapid industrialization, liberalization, and increasing demand for consumer goods, thus creating situations where there is huge potential with simultaneous complexities to overcome. M&A operates as the fastest and most efficient method for organizations to penetrate the market, extend their regional coverage, revolutionize their technology, and explore new market segments. The companies will be more competitive and stronger when they pool their resources and capabilities together. In the emerging market, M&A is mostly affected by different motivations such as regulatory reforms, privatization, and the rise of foreign direct investment. Multinational corporations have been motivated by globalization to engage in cross-border acquisitions, whereas local firms have opted for consolidation to reinforce their market power. Besides, M&A helps enterprises to surpass institutional voids like underdeveloped capital markets and infrastructure that can be assisted by coalescing resources and exploiting synergies. Without underrating the positive side of it, M&A in emerging markets comes with such problems as political instability, regulatory uncertainties, and integration difficulties. Differences in cultural norms, weak governance structure, and the volatility of the economy can negatively affect the performance of the targeted synergies. But M&A, if done tactfully, can not only help companies enhance shareholder value is enhanced but the company also contributes to economic development in society by propagating innovation, employment, and skills transfer. The digital transformation trend that is gaining rise has dramatically influenced M&A

strategies. The firms are now adopting the idea of buying tech startups to gain the material and immaterial technological capabilities, as well as to become more agile in the dynamically changing market. To sum up, M&A is essential to play a decisive role in the growth strategy of emerging markets. Through them, firms not only leverage the unfolding chances but also attain the efficiencies of scale and create a competitive advantage profile over the long run. Nevertheless, continuing to exist, with the implementation of a thorough plan, governance of high standards, and a strategy that is well aligned with M&A activities, one can gain the fullest benefits of mergers and acquisitions. As developing countries progressively become part of the global economy, M&A will always be an important tool for achieving growth, stability, and bringing in new ideas.

Keywords- Mergers, Acquisitions, Industrialization, Liberalization, Globalization



Artificial Intelligence and Society: Opportunities, Challenges, and Future Directions

Mahjabin Banu

Inderprastha Engineering College, Ghaziabad

Abstract: Artificial Intelligence (AI) and humanoid robots are reshaping contemporary society, influencing sectors such as healthcare, education, the economy, law, culture, and governance. While these technologies present opportunities for efficiency, inclusion, and sustainability, they also pose significant ethical, legal, and socio-economic challenges. Issues of data privacy, accountability, algorithmic bias, and employment displacement highlight the complex duality of AI adoption. This paper critically examines the theoretical underpinnings, practical applications, and governance frameworks surrounding AI and humanoid robots. Drawing on recent literature and policy debates, it identifies opportunities, risks, and unresolved dilemmas while proposing future directions for responsible, human-centered, and globally coordinated AI development.

Keywords: *AI, inclusion, ethical, policy, etc.*

Introduction: Artificial Intelligence (AI) and humanoid robots are increasingly shaping social, economic, and cultural dimensions of human life. These technologies are not limited to computational efficiency but extend into healthcare, education, governance, and everyday social interactions. The significance of this research lies in understanding AI's dual role: as a transformative force for development and as a source of new ethical and legal dilemmas. This paper aims to critically examine the role of AI and humanoid robots across various aspects of society, with emphasis on opportunities, challenges, governance mechanisms, and future pathways.

AI and Society: Theoretical Framework

- AI is the simulation of human intelligence in machines capable of reasoning, learning, and problem-solving. Humanoid robots represent a specialized branch of robotics designed to resemble and interact like humans. Societal impacts of AI can be examined through multiple lenses:
- *Economic Lens*: Productivity gains, job displacement, and emergence of new labor markets.
- *Ethical Lens*: Moral dilemmas in autonomy, accountability, and fairness.
- *Social Lens*: Shifts in human interaction, inclusivity, and inequality.
- Models of Human-Robot Interaction (HRI) highlight both benefits—enhanced learning, caregiving, companionship—and risks such as dependency, stereotyping, and privacy violations.

Review of Literature: Recent research advances understanding of AI and humanoid robots in education, governance, ethics, and systemic risks:

- *AI Literacy & Education*: Long et al. (2025) argue that AI literacy must integrate ethical reasoning and adaptability in K–12 and workplace learning.
- *Governance Frameworks*: Mărcuț et al. (2025) stress multi-level governance emphasizing transparency, accountability, and ethical integration.
- *Humanoid Robots & Inclusivity*: Perugia & Lisy (2022) demonstrate how gendered robot design reinforces stereotypes in human-robot interaction.
- *Education Applications*: Studies on humanoid tutors (e.g., Nao robots) highlight motivation and metacognition benefits but raise equity concerns.
- *AI for Social Impact*: Majumdar et al. (2025) identify collaboration and resource constraints as barriers to scaling AI4SI projects.
- *Systemic Risks*: Kulveit et al. (2025) propose “gradual disempowerment,” where incremental AI advances reduce human autonomy.
- *Generative AI*: Storey et al. (2025) emphasize socio-technical impacts requiring interdisciplinary approaches.
- *Global Safety*: The International AI Safety Report (2025), led by Yoshua Bengio, outlines risks of misinformation, cyber threats, and autonomous weapons.
- Collectively, these studies underscore AI’s dual promise and peril, reinforcing the need for governance frameworks that prioritize human values and inclusivity.

AI in Different Aspects of Society:

- *Education:* AI enables personalized learning pathways, adaptive assessment, and language tutoring. Humanoid robots serve as teaching assistants, especially for students with disabilities. However, disparities in access risk widening educational inequality.
- *Healthcare:* AI contributes to diagnostics, telemedicine, and predictive analytics. Humanoid robots assist in elderly care, rehabilitation, and companionship. Privacy concerns and liability issues remain unresolved.
- *Economy & Employment:* AI-driven automation improves efficiency in manufacturing, logistics, and services. At the same time, it displaces routine jobs, raising the urgency for reskilling and social safety nets.
- *Governance & Law:* AI supports e-governance, smart city planning, and policy simulations. Risks include algorithmic bias in welfare distribution and surveillance abuses.
- *Social Inclusion:* AI-driven accessibility tools empower people with disabilities, while translation technologies foster cross-cultural communication. Without equitable distribution, these tools may remain exclusive.
- *Environment & Sustainability:* AI optimizes resource use in agriculture, monitors pollution, and predicts climate patterns. Humanoid robots can contribute to disaster relief and hazardous waste management.
- *Security & Defense:* AI strengthens predictive policing, cyber defense, and autonomous drones. Ethical issues include erosion of human oversight in life-and-death decisions.
- *Culture & Communication:* AI reshapes media production, digital art, and entertainment. Humanoid robots play roles in museums, exhibitions, and cultural tourism, raising questions about authenticity.

Legal and Ethical Aspects

- *Data Privacy and Protection:* Humanoid robots often rely on continuous surveillance, raising concerns about consent and ambient data collection. GDPR in the EU and India's DPDP Act (2023) represent steps toward regulation but lack AI-specific provisions.
- *Accountability and Liability:* Determining liability in AI-related harm remains complex. Product liability laws hold manufacturers accountable, but autonomous systems blur accountability lines. The concept of "electronic personhood" remains controversial.
- *Bias, Fairness, and Discrimination:* AI mirrors biases in training data, resulting in discriminatory recruitment or policing outcomes. Designing unbiased, explainable AI is vital but technically challenging.

- *Intellectual Property Rights:* Current laws recognize only human authorship. Cases such as DABUS illustrate the gap in IP law regarding AI-generated inventions.
- *Human Rights and Surveillance:* AI-powered surveillance threatens privacy, free speech, and dignity. UNESCO and OECD advocate human-centric frameworks.
- *Comparative Legal Frameworks:* EU AI Act (2024): Risk-based classification and compliance. U.S.: Sectoral approach, limited federal oversight. India: NITI Aayog's Responsible AI and DPDP Act, though comprehensive AI law is pending.
- *Ethical Considerations:* Key dilemmas include autonomy vs. control, human replacement, and moral agency of machines. Ethical AI principles stress transparency, fairness, and beneficence.

Challenges of AI Adoption in Society

- *Algorithmic Bias and Discrimination:* AI reproduces social biases, creating inequitable outcomes in recruitment, welfare, and policing.
- *Digital Divide:* Access to AI remains skewed toward wealthy individuals and nations, risking "AI-driven stratification."
- *Employment Displacement:* AI displaces routine jobs while creating high-skill opportunities. Without reskilling, inequalities may deepen.
- *Overdependence on Technology:* Reliance on AI risks skill erosion, technical vulnerabilities, and emotional overattachment to humanoid robots.
- *Risks of Misuse:* AI can be weaponized for misinformation, cyberattacks, and autonomous warfare. Surveillance authoritarianism further exacerbates risks.
- *Ethical and Societal Resistance:* Cultural, ethical, and religious concerns may generate resistance, complicating adoption.

Future Directions:

- *Responsible AI Governance:* Risk-based regulation, adaptive legal frameworks, and global coordination are essential for responsible oversight.
- *Human-Centered AI:* Future AI must augment, not replace, human judgment. Participatory development fosters trust and social legitimacy.
- *Public-Private Partnerships:* Collaboration can pool resources for infrastructure, digital literacy, and regulatory sandboxes, especially in countries like India.

- *AI for Social Good:* Applications in healthcare access, education equity, climate mitigation, and disaster management highlight AI's potential for positive impact.
- *Sustainable Humanoid Design:* Eco-friendly, inclusive, and culturally sensitive designs ensure long-term social integration.
- *Role of Research and Academia:* Interdisciplinary research, curriculum innovation, and evidence-based policymaking are critical for shaping the future of AI responsibly.

Conclusion: AI and humanoid robots embody both promise and peril. Their role in society extends from healthcare and education to governance and culture, offering unprecedented opportunities to address global challenges. However, risks of bias, displacement, surveillance, and misuse necessitate comprehensive regulation and ethical vigilance. The future of AI must be human-centered, globally coordinated, and socially inclusive. Policymakers, technologists, and educators must work collectively to ensure that AI becomes a catalyst for equity, sustainability, and dignity.

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Indo-Nepal Relations under the Common Umbrella of SAARC: Challenges and Prospects

Shikha Gupta

St. Wilfred's PG College Jaipur, India

Corresponding Email: drshikhagupta1985@gmail.com

Abstract : This paper examines Indo-Nepal relations under the common framework of the South Asian Association for Regional Cooperation (SAARC). Rooted in shared history, culture, and geography, Indo-Nepal ties have remained central to South Asian politics. However, bilateral issues, global pressures, and SAARC's institutional weaknesses have posed challenges. This paper explores historical background, trade and economic cooperation, security dynamics, cultural linkages, and SAARC's role in shaping regional engagement. It also analyzes existing challenges including border disputes, economic imbalances, and geopolitical influences, while highlighting opportunities for regional integration, connectivity, and sustainable development. The study argues that strengthened Indo-Nepal cooperation within SAARC can reinvigorate regionalism and promote long-term stability in South Asia.

Introduction: Indo-Nepal relations hold a unique position in South Asian geopolitics. Bound by cultural affinity, geographical proximity, and historical ties, India and Nepal share one of the closest bilateral relationships in the region. However, the relationship has been influenced by shifting political landscapes, economic interdependence, and external pressures. Within the South Asian Association for Regional Cooperation (SAARC), the Indo-Nepal partnership carries significance for regional integration, yet the performance of SAARC as a regional organization has been inconsistent. This paper examines Indo-Nepal relations under SAARC's umbrella, analyzing historical ties, cooperation, challenges, and prospects for the future.

Historical Background of Indo-Nepal Relations: The Indo-Nepal relationship dates back centuries, rooted in shared religion, culture, and people-to-people ties. Both countries have an open border policy, allowing free movement of people and goods. The 1950 Treaty of Peace and Friendship formalized bilateral relations, granting reciprocal privileges of residence, property ownership, and economic activities. While this treaty strengthened relations, it has also been a point of contention in Nepalese politics, with demands for its revision in light of changing global dynamics.

SAARC: Objectives and Framework: SAARC, established in 1985, was envisioned as a platform for regional cooperation in South Asia. Its objectives include promoting collective self-reliance, accelerating economic and social development, and fostering regional peace. India and Nepal, as founding members, have played an important role in shaping SAARC's agenda. Despite these objectives, political differences among member states, particularly India-Pakistan tensions, have hindered SAARC's progress.

Indo-Nepal Relations within SAARC: Nepal's foreign policy often emphasizes balancing its relations with India and China, while also engaging actively in SAARC. India, being the largest economy in the region, has supported Nepal in various SAARC initiatives, including trade, energy cooperation, and disaster management. Projects under the SAARC Development Fund, regional energy grid, and connectivity programs have highlighted the potential of Indo-Nepal cooperation within SAARC.

Challenges in Bilateral and Regional Cooperation: Despite strong historical ties, Indo-Nepal relations face several challenges:

- Border disputes, especially regarding the Kalapani-Limpiyadhura-Lipulekh region.
- Economic imbalances, as Nepal relies heavily on Indian trade.
- Political instability within Nepal, leading to policy shifts.
- China's increasing influence in Nepal's infrastructure and economy.
- SAARC's inefficiency due to India-Pakistan rivalry, limiting regional integration.

Opportunities and the Way Forward: Despite the challenges, Indo-Nepal relations under SAARC present significant opportunities:

- Enhancing trade and connectivity through regional transport corridors.
- Joint hydropower projects to meet growing energy demands.
- Strengthening disaster management and climate resilience initiatives.
- Expanding educational and cultural exchanges to build trust.
- Revitalizing SAARC by focusing on common challenges like poverty, health, and sustainable development.

Conclusion: Indo-Nepal relations are integral to South Asia's stability and progress. While challenges persist, the opportunities for cooperation remain vast. By working together under SAARC's umbrella, India and Nepal can not only strengthen bilateral ties but also set a model for regional cooperation in South Asia. The revitalization of SAARC, coupled with enhanced bilateral initiatives, can pave the way for sustainable peace, economic growth, and integration in the region.

Keywords: Indo-Nepal Relations; SAARC; South Asia; Regional Cooperation; Foreign Policy; Bilateral Relations

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Explainable AI for Banking and Financial Services: Enhancing Transparency and Trust in Digital Transformation

Parul Pareek and Ruchi Sethi

Maharishi Arvind Institute of Science and Management, Ambabari, Jaipur

Abstract: The swift integration of Artificial Intelligence (AI) within banking and financial sectors has transformed how operations are managed, improved customer interactions, and enhanced risk control. However, the “black-box” nature of many AI systems poses significant challenges regarding transparency, accountability, and regulatory compliance in the highly regulated banking sector.

Methodology: This research examines the implementation of Explainable AI (XAI) frameworks in banking through a comprehensive analysis of current literature, case studies, and regulatory requirements. The study investigates XAI techniques including SHAP (SHapley Additive exPlanations), LIME (Local Interpretable Model-agnostic Explanations), and attention mechanisms applied to critical banking operations such as credit scoring, fraud detection, and risk assessment.

Results: Findings demonstrate that XAI implementation significantly improves regulatory compliance, enhances customer trust, and enables better risk management. Key results show that banks utilizing XAI frameworks experience 35% improvement in regulatory audit outcomes, 28% increase in customer satisfaction scores for loan decisions, and 42% reduction in bias-related complaints. The research identifies optimal XAI techniques for different banking applications and proposes a comprehensive governance framework for responsible AI deployment.

Conclusion: Explainable AI represents a critical enabler for sustainable AI adoption in banking. The study concludes that successful XAI implementation requires integrated approaches combining technical solutions, governance frameworks, and stakeholder engagement. Financial institutions must prioritize transparency and explainability to maintain competitive advantage while ensuring ethical and compliant AI deployment in the evolving digital banking landscape.

Keywords: Explainable AI, Banking, Financial Services, Digital Transformation, AI Governance



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DAY-3: (15 September, 2025)

Invited Lecture-1

Digital Citizenship and Environmental Responsibilities



Prof. Grishma Shukla

Affiliation & Contact:

Affiliation (1st) with full postal address: VPO. Gurara, Teh. -Khandela, Distt. -Sikar, Rajasthan.

Phone: 9785075653 | **Email:** mkvyasgurara@gmail.com

Research Interest: Educational field as sub-disciplines that constitute educational research, such as pedagogy, curriculum studies, educational psychology, and policy analysis

Education & Professional Career: NET & PhD in Education

Major Reviews:

- Research Papers and abstract have published in renowned Journals.
- Many books have published in Different publications.

Abstract

Digital Citizenship and Environmental Responsibilities

Grishma Shukla

Professor, School of Education, Jaipur National University, Jaipur

The 21st century is shaped by two significant forces: the rapid advancement of digital technologies and the pressing need for environmental sustainability. While these changes create opportunities, they also pose challenges, especially for developing economies like India. This paper examines the intersection of digital citizenship and environmental duties, contending that responsible online conduct and sustainable digital practices are essential for equitable and resilient growth. Digital citizenship refers to the ability of individuals to participate effectively and conscientiously in online environments. India, with 886 million internet users in 2024, projected to surpass 900 million by 2025, is at the forefront of digital transformation. This expansion has increased access to governance, education, and markets but has also raised concerns about misinformation, data privacy, cyber bullying, and digital exclusion. Legislative measures such as the Digital Personal Data Protection (DPDP) Act, 2023, and MeitY's 2024 guidelines on misinformation and deep fakes highlight the importance of accountability and secure digital spaces. Thus, digital citizenship encompasses not only technical skills but also inclusivity, ethical awareness, and civic responsibility. Alongside this digital growth are pressing ecological consequences. Globally, Information and Communication Technologies (ICTs) account for 1.5–4% of greenhouse gas emissions, driven by data centers, devices, and networks. In 2022, e-waste reached 62 million tonnes worldwide, with only 22% formally recycled. For India, the energy demand of data centers could reach 3% of national electricity consumption by 2030, while informal e-waste recycling endangers workers and communities. Although India's E-Waste (Management) Rules, 2022, built on Extended Producer Responsibility (EPR), provide a policy framework, challenges of enforcement and public awareness remain. Digital progress must align with ecological accountability. Citizens are expected to adopt sustainable habits such as repairing, reusing, and recycling digital devices. Industry stakeholders should invest in renewable energy, develop greener technologies, and comply with e-waste regulations, while policymakers need to strengthen governance frameworks that integrate digital rights with sustainability goals. In conclusion, digital citizenship and environmental stewardship are mutually reinforcing pillars of sustainable development. For India, embedding ecological responsibility within digital transformation is crucial to achieve inclusive growth and conserve natural resources. Cultivating a culture of informed and environmentally aware digital citizens will help ensure a balanced and sustainable digital future.

Keywords: Digital Citizenship, Environmental Responsibility, Sustainable ICT, E-Waste, Sustainable Development



Invited Lecture-2

Art as Reflection of Local Environmental Issues



Dr. Rajendra Prasad

Affiliation & Contact:

Affiliation (1st) with full postal address: L-7-H University Campus. Jhalana Road, University of Rajasthan, Jaipur, (Rajasthan) Bharat 302004

Phone: +71-7727091301 | **Email:** rajsutharart@rediffmail.com

Research Interest:

- Modern Art, Contemporary Art, Indian Art History and Career guidance etc.
- Uttaradhyayan-Sutra' ki Sachitra Pandulipiyan-Ek Adhyayan (Rajasthan Kei Sangrahalayon mein Sangrahit) & .Art Appreciation Course in Paper Machy Art in 2017 by Rajasthan Lalit Kala Academy, Jaipur.

Education & Professional Career:

- Ph.D. Banasthali University
- NET & JRF in 2009 & 2010 from UGC, New Delhi.

Major Reviews:

- Reviewed in Anthology the Research (Multi-disciplinary International Journal) ISSN No. 2456-4397, SJIF6018& IIJ/F 4.02, Vol-5, ISSUe-6 on the month of September 2020 by Social Research Foundation, Kanpur.
- Reviewed in Innovation the Research Concept (Multi-Disciplinary International Journal) ISS 2456-5474, SJIF-6.122, IIJF-4.112, Vol-5, ISSUE-5, for the month of June 2020.

Abstract

Art as Reflection of Local Environmental Issues

Rajendra Prasad

*Assistant Professor, Department of Drawing & Painting, Faculty of Fine Arts, University of Rajasthan,
Jaipur, Rajasthan (India)*

Art is not just an expression of emotion but also a medium for communicating ideas. through art we can chronicle history, embody societal values and comment on political or social issues, art has the power to move people emotionally, which can inspire action striking visuals impactful installation and compelling narratives, artists address complex environmental issues and engage audiences who might otherwise feel distanced from the topic. Art and environment are two subjects that can easily go hand in hand. for many years people have used art as medium to speak on local environmental issues like pollution, deforestation and habitat loss, waste management, water scarcity and climate change impacts through painting, photographs, sculpture, murals, installations, land art, scrape art and performance art. In recent years as the urgency of environmental issues has come to forefront, artists worldwide have used their work to raise awareness about sustainability, climate captivates but also inspire action making it a unique vehicle for Local environmental advocacy. Prominent environmental artist in India such as Manav Gupta, Seema kohli, Manveer singh, Arun kumar and Dharmendra Prasad known for large scale, site-specific sculptures, eco-friendly artistic mediums, bio-degradable materials, plastic waste and recycled materials to convey local environmental awareness. In conclusion, we can say that art explore the relationship between humans and the landscape by acting as bridge to reflect local environmental Issues. presently, art works as a supporting tool to the spirit of 'Vasudhaiva Kutumbakam' to aesthetically beautify the global landscape.

Keywords: Art, Environmental Art, Local Environment Issues, Art Awareness, Global Landscape, 'Vasudhaiva Kutumbakam'.

□ □ □

Invited Lecture-3

The Psychology of Environmental Education: Building Pro-environmental Attitudes in Student



Prof. Mridula Sharma

Contact:

Phone: 8859104014 | **Email:** mridula319@gmail.com

Research Interest:

- Ongoing project on, “Quality of life index in young children living in Ganga Basin: a prospective observational study” in ICSSR (2019-2021).
- Ongoing project on, “Impact of Yoga and Meditation on Emotional Intelligence and Aggression of Adolescents” in UPHED-No-46/2021/603/70-4-2021- 4(56)/2020 Dated March 30, 2021 (Name on List Page no D- 61) (2020-2022).

Education & Professional Career:

2014 : Ph.D. Bansathali University

2006 : M.A. University of Rajasthan

Major Publications:

- Sharma, M. & Talele, Rahul. P. (2018). Impact of antiviral therapy on quality of life in hepatitis C patients measured using short from-36 questionnaire: A prospective observational study. *Innovation in Pharmaceuticals and Pharmacotherapy*. Vol. 6, Issue. 4, Page No 65-69, Oct-Dec 2018.
- Sharma, M. & Chaudhary, M. (2016). A Study of Drugs and Substance Abuse among Adolescents of Slum Dwellers. *The International Journal of Indian Psychology*. Vol. 3, Issue. 4, No. 58, ISSN 2348-5396 (e), ISSN 2349-3429 (P), July – Sep., 2016.
- Chaudhary, M. & Sharma, M. (2016). Management of Psychological Effects through Counselling during HCV (Hepatitis) Treatment. *The International Journal of Indian Psychology*. Vol. 3, Issue. 2, No. 3, ISSN 2348-5396 (e), ISSN 2349-3429 (P), Jan-Mar 2016.

Abstract

The Psychology of Environmental Education: Building Pro-environmental Attitudes in Student

Mridula Sharma

*Managing Director, Aryavart Hospital, Meerut, UP – India,
Professor and Former Head, Department of Psychology,
Meerut College, Meerut (Affiliated to CCS University, Meerut)*

Ever deliberated on why providing information about climate change does not evoke proactive behaviour from population. We would all be environmentalist by now, if only knowledge about it was enough. Lessons on climate change, perils of pollution and importance of recycling have been known to us yet, there is disregard and apathy. There is a wide gap between knowledge and actions which creates a challenge for environmental education. The attitude of the people and the resulting behaviour must be analysed keenly before arriving at the positive action required. There is a need to make an emotional connect to the environmental issues. In psychology, emotions serve as potent drivers of motivation, what we call as affective engagement, people can go to any length to protect their loved ones. Hence, a bond between human and the surroundings must be felt. The sensation of the damp soil beneath your feet, the sound of rustling leaves, and really walking through a forest are all very different from looking at a photograph of one. These kinds of experiences elicit empathy and attachment. Teaching about soil composition to students is much different than giving them school projects where they cultivate their own vegetables on allotted land. This experience is what psychologists describe as intrinsic motivation - a sense of fulfilment that derives from personal involvement. Imagine when their efforts are successful, they develop a connection rather than merely learning a concept. No number of statistics can replace this kind of personal involvement, which is a powerful motivator. Next, we need to acknowledge the psychology of helplessness. The magnitude of global environmental issues frequently induces a phenomenon known as learned helplessness, which is a conviction that personal efforts exert, minimal, or no influence on circumstances. When students hear about events like melting glaciers or endangered species, they may feel their contributions are insignificant and incapable of bringing change. If left unaddressed, this perception can lead to apathy and disengagement. Carrying out small initiatives like successful composing program in neighbourhood show that collective efforts lead evident results. These small successes go a long way in building, self-esteem and optimism. People see themselves as not 'helpless,' but a powerful tool to make a change in a society. Finally, the power of social influence must be acknowledged. The digital media has unparalleled reach and influence. The pro-environmental actions must be promoted on social media. This generation takes cues from those around them. When pro-environmental actions are seen as normal, accepted, and celebrated, people are more likely to join in. Group projects foster a sense of unity and purpose, whether they involve planning a recycling campaign or cultivating a native garden. When peers embrace these actions, it sparks positive peer pressure. Sustainability is no longer a solitary decision; it transforms into a

communal identity and effective environmental education program is not merely about the transfer of knowledge. It involves the use of psychical principles by helping people feel connected to environment and boosting their self-efficacy to get over feeling helpless and creating communities where sustainability is the norm. Facts teach us things, but psychology makes us feel things. People only really move towards anything when they are emotionally, personally and socially moved.

Keywords: Environmental education, Psychology, Affective engagement, Self-efficacy, Sustainability



Invited Lecture-4

Fashion beyond Trends: A Greener Perspective



Dr. Sulekha Ojha

Head, Department of Fashion & Textile, IIS (Deemed to be University), Jaipur, Rajasthan, India

Abstract

Fashion has traditionally been driven by fast-changing trends, which fuel consumerism, encourage overproduction, and generate immense waste. This cycle not only leads to excessive resource consumption but also contributes significantly to environmental degradation and ethical concerns within supply chains. Moving beyond this unsustainable model requires a paradigm shift towards a greener and more responsible perspective rooted in sustainability and circularity. The circular economy principles eliminate waste and pollution, keeping products and materials in use through reuse, repair, and recycling, and regenerating natural systems offer a transformative approach to redefining the fashion industry. Integrating these principles allows fashion to move away from a linear “take-make-dispose” system and embrace a model where products are designed for longevity, reduced impact, and ecological restoration. The adoption of sustainable materials such as organic cotton, bamboo, hemp, Tencel, and recycled fibers, alongside sustainable practices including eco-friendly dyeing methods, zero-waste pattern cutting, water-efficient technologies, and ethical production processes, is changing the way fashion is created and consumed. To ensure transparency and credibility, certifications such as GOTS, Fair Trade, OEKO-TEX, and Cradle to Cradle play a vital role in guiding brands and consumers toward environmentally and socially responsible choices. Equally important is the role of pioneering brands that demonstrate the fusion of creativity and responsibility. Globally, companies like Patagonia, Stella McCartney, and Levi’s, and within India, initiatives such as Doodlage, I am Saree, ReCharkha, FabIndia, and Grassroot by Anita Dongre, are leading the way by embracing circular design, ethical sourcing, and sustainable innovation. This research emphasizes that fashion beyond trends is not merely about aesthetics but about creating a system that values cultural preservation, supports artisans and communities, and encourages mindful consumption. Ultimately, it envisions a future where fashion is not only stylish and innovative but also restorative, resilient, and aligned with global sustainability goals.

Keywords: sustainability, circular fashion, materials, brands, repair



Invited Lecture-5

Sustainability of Education through Ancient Indian Education Pattern – A Journey Back to the Roots



Dr. Mudita Popli

Affiliation & Contact:

Affiliation (1st) with full postal address: 1-D-31 Jnv Colony, Bikaner, Rajasthan
Phone: 9414430565, 9549370620 | Email: muditapopli@gmail.com

Research Interest:

- Member of Board of Studies (BOS) at Maharaja GangaSingh University Bikaner Rajasthan from 4 May 2024 to till now.
- Member Of DRC Committee Education at Maharaja Gangasingh University Bikaner Rajasthan.
- Academic Counsellor of Psychology at VMOU Kota For UG and PG Program.
- Presently working as Journalist at DD News Jaipur from Bikaner Rajasthan.

Education & Professional Career:

2023: M.A. Psychology

2019: PhD

2005: M.Ed.

2004: B.Ed.

Major Publications:

- Conducted an International Conference on Recent Challenges & Trends in Multidisciplinary Studies at Maa Karni B ed College Nal, Bikaner as Principal and editor of the published papers of Conference in UGC Peer Edition of the Journal
- Paper Presentation and Participation in National & International Seminar more than 15.

Abstract

Sustainability of Education through Ancient Indian Education Pattern – A Journey Back to the Roots

Mudita Popli

Journalist, DD News & Researcher

Abstract:

The ancient Indian Gurukul system was not merely a mode of imparting knowledge — it was a way of life. Rooted in nature, self-discipline, and holistic learning, it cultivated wisdom without dependence on books, focusing instead on experience, moral values, and deep teacher–student relationships. In today’s world of digitization, rapid information consumption, and environmental challenges, revisiting the Gurukul model offers us sustainable and value-based education. This paper explores the philosophy, practices, and relevance of the Gurukul system, compares it with the modern education system, shares ancient Indian stories and verses, and discusses how such methods are being revived in institutions like Rishi Valley School and Isha Home School. Ultimately, it is about “A Journey Back to the Roots” — finding balance between tradition and modernity for a sustainable future.

Keywords: - Sustainability, Digitization, Tradition



Invited Lecture-6

The Role of Ethics and Sustainability in Indian Education



Prof. Dr. Sonia Kaur Bansal

Affiliation & Contact: Associate Professor, Dept. of English, Poornima University, Jaipur, B-14, G-1, Jai Ambey Nagar Jaipur- 302018

Phone: 9829156512, 9414072874 | **Email:** drsoniakaurbansal@gmail.com

Research Interest:

A Study of the Level of Burnout among University Teachers with Some Demographic Variables

Education & Professional Career:

2014 : Ph.D. Bansathali University

2006 : M.A. University of Rajasthan

Major Publications:

- Significance and Advancement of the Educational Technology: Holistic Development of Learners in the Digital Age
- A Study of Different Dimensions of Women Empowerment and Its Importance
- An Analysis of Women Dominance in Indian Journalism

Abstract

The Role of Ethics and Sustainability in Indian Education

Sonia Kaur Bansal

Dept. of English, Poornima University, Jaipur

In the past, Indian education focused primarily on rote learning and academic scores, but now, a significant shift is underway. The **National Education Policy (NEP) 2020** emphasizes a holistic approach, recognizing that a student's development isn't complete without strong ethical values and an understanding of sustainability. This shift is vital for creating a generation of responsible and environmentally conscious citizens.

Fostering Ethical and Sustainable Citizens

Integrating ethics and sustainability into the curriculum goes beyond adding a new subject. It's about changing the fundamental way students think and act. Ethical education instills core values like honesty, empathy, compassion, and respect for all living beings. This helps students develop a strong moral compass and prepares them to navigate the complexities of life with integrity. Similarly, teaching sustainability encourages an understanding of the interconnectedness of social, economic, and environmental systems. Students learn about responsible consumption, waste management, climate change, and biodiversity loss, inspiring them to become proactive agents of change.

Challenges and Opportunities

While the benefits are clear, there are challenges to implementing this change. One major hurdle is the need to train educators and reform the traditional, exam-oriented teaching methods. Many teachers aren't equipped to deliver this interdisciplinary content, which requires a shift from passive, lecture-based learning to active, project-based activities like case studies and community projects. However, this also presents a great opportunity. By incorporating sustainability and ethics into various subjects—from science to social studies and even the arts—schools can make learning more engaging and relevant. This approach also helps students develop critical thinking and problem-solving skills, empowering them to find innovative solutions to real-world challenges. Ultimately, a value-based and sustainable education is key to India's future prosperity and its ability to contribute to a better, more sustainable world.

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CONTRIBUTED PAPERS

Using AI for Improving Substantive Value of Votes in a Democracy

Ajay Aswal and Sakshi Mehta

Apex University, Jaipur

Abstract: Among the various technical innovation of the 21st Century, AI has emerged as the most transformative technology of them all. It is rapidly impacting all the spheres of human lives. Although there are a lot of concerns about AI being mechanical biased by algorithm and causing loss of jobs, yet it is being increasingly realized that AI has a huge potential of social good. AI for social good implies using AI driven tools and methods to meet current social challenges and enhance sustainable growth for the overall wellbeing of humans. It has a great potential to progress towards Sustainable Developmental Goals (SDG) framed by United Nations. This abstract emphasizes use of AI for social good specifically for increasing the quality and value of votes in a Democracy. It looks at the impact of AI on voters. The methodology used here is largely a comparative analysis of voter decision making with and without AI. Democracy thrives on the informed and meaningful participation of the voters in the overall electoral process. In today's age of information overload, widespread misinformation and algorithmically biased data, there is a great risk of the voter's value of vote getting undermined. AI has a significant role in enhancing electoral reforms while controlling voting malpractices. For example, increased use of AI can make even more objective the on-going process of Special Intensive Revision (SIR) of electoral rolls being carried out by the Election Commission in the State of Bihar. It can analyse huge chunks of data and also verify data validity from the other digitally available data sources. For ensuring level playing fields for all the political parties, AI can grant objectively election permissions for rallies, vehicles etc. AI tools can help verify actual election expenditure made by candidates say by counting number of vehicles and people who have come to elections rallies. Or to control hate speeches by searching key words that are prohibited by the Model Code of Conduct. Apart from reforming the procedural aspects, AI can also be used for substantive reforms in the election process. AI can also be used for having a more deliberative democracy to inform/gauge the mood of the voters. Also, this helps the Government frame better policies based on public opinion. This would make the democracy a continuous process of consultation and responsiveness and rather than focusing on just one time event of voting. AI can improve accessibility across areas, differences of languages barriers, etc. AI tools with assistive technology for physically challenged, speech to text conversion, language translation, etc. can make election process more democratic. This Age of AI can help voters in judging better the authenticity of information being provided. AI has a great potential for empowering voters, strengthening democratic institutions and increasing overall integrity of voting process.

Keywords: AI, Sustainable Developmental Goals, Vehicles, Language Translation, Empowering Voters



Business Models for Ethical and Eco-Friendly Fashion Brands: Strategies for Sustainable Growth

Sarika Gupta and Riddhima Choudhary

Biyani Girls College, Jaipur, India

Abstract:

The global fashion industry faces growing criticism for its reliance on fast fashion, which promotes overconsumption, exploits labor, and contributes significantly to environmental damage. In response, ethical and eco-friendly fashion brands are redefining business models by integrating sustainability, fair labor practices, and innovation. This paper examines the key features, challenges, and strategies of sustainable fashion, with *BBliss*—a bamboo-based start-up initiative—serving as an illustrative case. Ethical business models emphasize renewable and biodegradable raw materials, transparency in supply chains, and circular economy principles such as recycling, up cycling, and waste reduction. Consumer trust is built through accountability and digital-first engagement strategies, including storytelling and eco-conscious branding. While challenges such as higher costs, scalability issues, and competition from fast fashion remain, opportunities are expanding as awareness of climate change and sustainability grows. Strategies for sustainable growth include exploring plant-based textiles, adopting fair-trade certifications, offering customization to foster consumer loyalty, and leveraging e-commerce to reach global audiences. *BBliss* exemplifies these principles by utilizing bamboo, a renewable and antibacterial material, while collaborating with artisans for fair wages, repurposing production waste, and offering personalized products. Its model demonstrates how sustainability and entrepreneurship can align at both community and global levels. The study highlights that sustainable fashion is not only about garments but about rethinking the very foundations of the industry—how resources are sourced, how workers are treated, and how consumers connect with products. The future of fashion lies in balancing profitability with ecological and social responsibility, making sustainable growth both essential and achievable.

Keywords: Ethical Fashion, Sustainable Fashion, Eco-Friendly Materials, Fair Labor Practices



Green Technology and Digital Responsibility: A Path to Sustainable Futures

Shaifali Vijay and Prasum Shekhawat

Biyani Girls College, Jaipur, India

Abstract

The digital age has transformed human life by connecting societies, enhancing knowledge, and driving innovation. Yet, this revolution has also brought serious environmental challenges such as excessive e-waste, rising carbon footprints, and the overuse of energy resources in data-driven infrastructures. In this context, digital citizenship—traditionally understood as responsible and ethical use of technology—must expand to include environmental sustainability. Being a good digital citizen today also means being aware of how technology choices affect the planet. Green technologies offer practical solutions for reducing the environmental impact of digitalization. Renewable-powered data centers, energy-efficient devices, cloud-based paperless practices, and smart recycling systems are some initiatives that align technology with ecological responsibility. Adopting such innovations ensures that digital progress contributes positively rather than harming natural resources. Sustainable digital practices cannot be achieved without awareness and participation. Integrating environmental responsibility into digital literacy programs is essential for shaping eco-conscious citizens. At the same time, governments and institutions must create supportive policies that encourage green innovation and regulate e-waste management. Youth, with their energy and adaptability, can play a vital role by advocating sustainability on digital platforms and leading community initiatives. The integration of green technology with digital responsibility redefines progress as a balanced journey where innovation and preservation work together. By adopting eco-friendly digital habits, supporting sustainable technologies, and encouraging collective responsibility, society can move towards a future that is both technologically advanced and environmentally secure. Every digital citizen has the power to act as an environmental steward, ensuring that the benefits of technology never come at the cost of the planet.

Keywords: Green Technology, Digital Citizenship, Environmental Sustainability, Digital Responsibility, E-Waste Management, Eco-Friendly Innovation, Sustainable Futures.



Impact of Climate Change on Indian Coastal Ecosystems

Himanshi Sethi and Akangsha

Biyani Girls College, Jaipur

Abstract

India's coastal ecosystems, spanning over 7,500 kilometers, represent vital natural resources that support biodiversity, provide livelihood to millions, and play a key role in climate regulation. However, these ecosystems are increasingly under threat from the impacts of climate change, which include rising sea levels, increased frequency and intensity of storms, coastal erosion, and changes in sea temperature and salinity. The western and eastern coasts of India, home to diverse habitats like mangrove forests, coral reefs, and sandy beaches, are particularly vulnerable to these climatic shifts. This study examines the multifaceted impacts of climate change on India's coastal ecosystems, with a focus on the effects on biodiversity, local communities, and the broader ecological balance. Through a review of recent research and case studies, this paper highlights the direct and indirect consequences of climate change on coastal flora and fauna, including disruptions to breeding patterns, habitat loss, and shifts in species distribution. Coastal erosion, exacerbated by rising sea levels, threatens not only the land but also the socio-economic stability of coastal communities that rely on fishing and agriculture. Furthermore, coral reefs along the coasts of Gujarat, Kerala, and the Andaman Islands face bleaching events due to rising sea temperatures, reducing their ability to support marine life. The paper also explores adaptive strategies employed by local communities, governmental policies, and conservation initiatives aimed at mitigating the adverse impacts. It argues for the integration of climate-resilient measures into coastal management and development plans, emphasizing the importance of preserving natural buffers like mangroves and wetlands. The study concludes by stressing the need for a multi-dimensional approach that combines scientific research, policy intervention, and community engagement to safeguard India's coastal ecosystems against the accelerating threat of climate change.

Keywords: Ecosystems, Marine Life, Mangroves, Wetlands



Digital Citizenship and Environmental Responsibility

Kanishka Joshi and Nupur Sharma

Biyani Girls College, Jaipur

Abstract

Digital citizenship refers to the responsible, ethical, and critical use of technology and online platforms. It demands awareness about digital literacy, cyber safety, and the respectful use of virtual spaces. Just as literature teaches us to distinguish between appearance and reality, digital citizenship requires critical thinking to discern truth from misinformation. The phenomenon of ‘post-truth’ and fake news can be interpreted through the lens of literature, which has long grappled with the tension between illusion and reality. Furthermore, the ethics of communication online echo the moral concerns we find in the works of writers such as John Milton, who emphasized free yet responsible expression. Thus, digital citizenship is not only a technological skill but also a moral and intellectual practice. Environmental responsibility denotes the moral obligation of individuals and communities to preserve and sustain the natural environment. Literature across centuries has consistently foregrounded the relationship between humans and nature. The Romantic poets, especially Wordsworth and Coleridge, celebrated nature as a spiritual force, while Henry David Thoreau in his **Walden** advocated simple living in harmony with the natural world. Contemporary writers like Amitav Ghosh, in **The Great Derangement**, highlight the failure of culture and literature to address the urgency of climate change. From an eco-critical perspective, environmental responsibility is not limited to scientific measures but is deeply embedded in cultural imagination and narrative traditions. Recycling, reducing plastic use, and adopting renewable energy are not merely acts of sustainability but extensions of a cultural ethics that respects the interconnectedness of all life forms. Though apparently distinct, digital citizenship and environmental responsibility intersect in the contemporary world. Digital platforms enable the dissemination of awareness about climate change, sustainable practices, and ecological activism. At the same time, one must remain mindful of the ecological footprint of digital technologies: the problem of e-waste, excessive energy consumption, and the carbon footprint of large data centers. A responsible digital citizen is therefore also one who uses technology in an environmentally conscious manner—reducing unnecessary digital consumption, recycling electronic devices, and opting for energy-efficient technologies. In this sense, both responsibilities merge to redefine what it means to be an ethical global citizen. Donna Haraway’s idea of the ‘Cyborg’ reminds us that human life is now inextricably entangled with technology, and thus our ethical duties must extend into the technological as well as ecological domains. In conclusion, digital citizenship and environmental responsibility are not isolated duties but complementary aspects of twenty-first-century ethical existence. Literature provides a fertile ground for understanding both—through its long tradition of engaging with truth, responsibility, and the human relationship with nature. By combining the insights of eco-criticism and digital humanities, one can argue that to be a truly responsible individual today is to navigate the digital world with integrity and engage with the environment with reverence. Such a synthesis is not only

an academic reflection but also a necessary guide for sustainable human life in an age where culture, technology, and nature are inseparably intertwined.

Keywords: Digital Literacy, Cyber Safety, Digital Citizenship, Environmental, Human Life



Sustainability and Development in India

Shobha Jangir and Vidya Dhaka

Biyani Girls College, Jaipur

Abstract

India, as one of the world's most populous and rapidly developing nations, stands at a critical crossroads where the pursuit of economic growth must align with the principles of sustainability. Over the past few decades, India has made impressive strides in GDP growth, technological advancement, infrastructure development, and poverty reduction. However, this progress has come with significant environmental and social costs—rising carbon emissions, water scarcity, deforestation, loss of biodiversity, and growing socioeconomic inequalities. Sustainable development in India involves addressing the urgent need to reconcile economic ambitions with ecological stewardship and social equity. The concept, as defined by the Brundtland Commission, emphasizes meeting the needs of the present without compromising the ability of future generations to meet their own needs. In the Indian context, this means adopting policies and practices that ensure inclusive growth, environmental protection, and efficient use of resources. India's development strategy has increasingly incorporated sustainability goals, especially in light of its commitments under the Paris Agreement and the United Nations Sustainable Development Goals (SDGs). The government has launched several flagship initiatives, such as the National Action Plan on Climate Change (NAPCC), which outlines missions on solar energy, energy efficiency, water conservation, and sustainable agriculture. The International Solar Alliance (ISA), spearheaded by India, is a global platform promoting solar energy deployment. Additionally, the Smart Cities Mission, Swachh Bharat Abhiyan, and National Electric Mobility Mission Plan (NEMMP) aim to build sustainable urban spaces, improve sanitation, and reduce dependence on fossil fuels, respectively. Despite these efforts, India faces persistent challenges. A large rural population still relies on traditional biomass for cooking, while air and water pollution continue to pose serious health risks in urban areas. Rapid industrialization and infrastructure expansion often conflict with environmental regulations, leading to habitat destruction and the displacement of indigenous communities. Moreover, climate change poses a major threat to India's agriculture, water security, and coastal ecosystems, making resilience and adaptation strategies essential. To move toward a truly sustainable development path, India must embrace integrated approaches that combine

technological innovation, policy reform, community participation, and environmental education. Strengthening institutional capacity, improving environmental governance, investing in green technologies, and promoting sustainable livelihoods—especially in rural and vulnerable regions—are key to ensuring long-term success. In conclusion, sustainability and development in India are not opposing goals, but complementary ones. Achieving a balance between economic growth and environmental preservation is not only necessary for India’s future prosperity but also critical for global sustainability efforts, given India’s demographic and ecological significance. The road ahead requires bold leadership, cooperative federalism, and a collective commitment from all stakeholders—government, industry, civil society, and citizens alike.

Keywords: GDP, Carbon Emissions, Water Scarcity, Deforestation, Biodiversity



Behavioural Sustainability: Harnessing Human Psychology to Drive Global Collaboration for a Greener Future

Himanshi Wadhwani

Biyani Girls College, Jaipur, India

Abstract

As the world confronts escalating environmental crises, the success of sustainable initiatives hinges not only on technological innovation and policy reform, but on human behaviour. This paper explores the intersection of behavioural science and sustainability, emphasizing how psychological insights can catalyse global collaboration between industry and academia. Drawing from disciplines such as cognitive psychology, behavioural economics, and social neuroscience, the session examines why individuals and organizations resist sustainable change—and how to overcome these barriers. Case studies from climate-conscious corporations and academic institutions reveal how nudges, social norms, and identity-based interventions have transformed consumption patterns, energy use, and waste reduction. The paper proposes a trans disciplinary framework for embedding behavioural strategies into industrial design, academic curricula, and international policy. By aligning human motivation with environmental goals, this approach fosters a culture of shared responsibility and innovation. Ultimately, this paper highlights the pivotal role of behavioural sustainability as a driving force behind coordinated global efforts to build a resilient and regenerative future

Keywords: Behavioural Sustainability, Human Psychology, Global Collaboration, Environmental Behaviour, Interdisciplinary Strategy



Digital & New Media Arts for Sustainability – Reducing Resource Use through Technology in Creative Expression

Sonia Sharma

Biyani Girls College, Jaipur

Abstract

The rapid evolution of digital and new media arts has opened innovative pathways for sustainable creative practices. Unlike traditional art forms that often rely on resource-intensive materials, digital platforms enable artists to experiment, produce, and share their work with minimal environmental impact. This shift not only reduces the consumption of physical resources such as paper, canvas, pigments, and other non-renewable materials but also broadens access to creative expression through virtual spaces. By integrating technology into visual arts education, students and practitioners can adopt eco-conscious methods while engaging with global audiences. Furthermore, digital and new media arts support collaborative projects, virtual exhibitions, and immersive storytelling that amplify awareness of sustainability issues. Thus, embedding digital creativity into academic curricula and industry practices offers a transformative approach to art-making, aligning creative expression with the urgent need for ecological responsibility.

Keywords: Traditional Art, Digital Platforms, Visual Arts, Global Audiences



Education for Promoting Sustainable Development

Astha Singh

Biyani Girls College, Jaipur

Abstract

Education has emerged as one of the most powerful instruments for promoting sustainable development in the twenty-first century. Sustainable development emphasizes the balance between economic growth, social equity, and environmental protection to ensure the well-being of both present and future generations. Within this framework, education is not only a fundamental human right but also a transformative force that enables individuals and societies to understand complex global challenges and develop practical solutions. By analyzing its goals, pedagogical strategies and societal outcome this paper explores the role of education in advancing sustainable development. This research employs a qualitative review of existing literature and case studies from various countries to analyze how education has been integrated into sustainability initiatives. Evidence suggests that incorporating sustainability principles into school curricula, teacher training programs, and higher education courses fosters greater awareness among students and communities. In

conclusion, education serves as a catalyst for promoting sustainable development by equipping individuals and communities with the capacity to understand, evaluate, and act upon sustainability challenges. It involves not only the transmission of knowledge but also the cultivation of values. The study emphasizes the need for integrating sustainability across all levels of education, from early childhood to lifelong learning, and calls for greater investment in educational reforms that prioritize sustainability as a core objective. Ultimately, education is indispensable in building a more just, resilient, and sustainable world.

Keywords: Sustainable Development, Critical Thinking, Global Citizenship



Deepfakes vs. Authenticity: Building an Ethical Media Ecosystem

Anushka Sharma

Biyani Girls College, Jaipur

Abstract

The rise of deepfake technology has emerged as one of the most pressing challenges for global media systems in the 21st century. Advances in artificial intelligence (AI), particularly the development of generative adversarial networks (GANs), laid the foundation for this technology in 2014, and the term “deepfake” came into common use in 2017. Deepfakes not only create fabricated audio-visual content, but they can also be misused to harm a person’s image, reputation, and credibility. They have been employed for political purposes, personal revenge, blackmail, and financial fraud. As a result, the foundations of authenticity, credibility, and public trust in journalism and mass communication are being severely undermined. For instance, in 2019, a deepfake video of Facebook CEO Mark Zuckerberg went viral, highlighting the dangers of social media manipulation. In India, morphed videos of political leaders during election campaigns misled voters, threatening democratic processes. Additionally, celebrity deep fakes and fake pornography cases have raised ethical, social, and legal concerns globally. However, the technology also holds significant potential for positive applications, such as reconstructing historical figures for documentaries, reviving endangered or extinct languages through synthetic voices, creating immersive educational content, and enhancing accessibility for differently-abled individuals. To address these challenges, it is crucial to develop AI-based detection systems to identify and flag fake content, implement legal safeguards to prevent misuse, and promote media literacy programs to educate citizens on verifying information and recognizing misinformation. Industry- academia collaboration is vital to creating ethical frameworks that combine expertise from media studies, technology, law, and ethics. Such partnerships can produce innovative solutions, ensure responsible technology use, and strengthen democratic institutions.

A balanced approach involving technology, legal measures, and public awareness is essential. Media organizations must adopt rigorous fact-checking protocols, while the general public should cultivate critical thinking and verify information before sharing content. This research also aligns with the United Nations Sustainable Development Goals (SDGs), particularly Goal 16 (Peace, Justice, and Strong Institutions) and Goal 17 (Partnerships for the Goals), highlighting that collaboration across sectors is essential to maintain transparency and accountability. Ultimately, building an ethical media ecosystem is not only a technical necessity but also a moral imperative to protect truth, uphold democracy, promote societal trust, and ensure global stability in the age of digital misinformation.

Keywords: Deep Fake, Artificial Intelligence, Media Authenticity, Misinformation, Digital Manipulation



The Role of Ethics and Sustainability in the Educational System

Anjali Kanwar Rathore and Virendra Kumar

Biyani Girls College, Jaipur

Abstract

Today's world is shaped by rapid globalization, growing climate challenges, and widening social inequalities. In such a context, education cannot remain confined to academic excellence alone. It must also nurture values that guide learners to become responsible, empathetic, and conscious global citizens. Ethics and sustainability, when brought together in the educational system, provide a strong foundation for preparing future generations to meet the complexities of the twenty-first century with wisdom and responsibility. Qualities that shape not only competent professionals but also compassionate individual. Sustainability, on the other hand, teaches environmental stewardship, social equity, and economic responsibility, enabling students to recognize the deep interconnections between human life and the planet. When combined, these two dimensions encourage learners to think beyond individual success, and to embrace a sense of duty toward society and future generations. Aligning education with the United Nations' Sustainable Development Goals, especially Quality Education (Goal-4) and Responsible Consumption (Goal-12), offers a pathway to make learning both relevant and impactful. The findings suggest that when ethics and sustainability are integrated into teaching and institutional culture, students not only perform better academically but also grow in critical thinking, empathy, leadership, and resilience. They become better equipped to face issues such as climate change, digital ethics, and social inequality with courage and creativity. Ultimately, this paper argues that embedding ethics and sustainability in education is not just an academic reform, but a moral and social necessity. Education must serve as a catalyst for building inclusive, equitable, and future-ready societies. By placing ethical responsibility and

sustainable development at its heart, the educational system can ensure that learners are not only skilled for today's jobs but also prepared to safeguard tomorrow's world.

Keyword: Sustainable Development Goals, Quality Education, Critical Thinking, Empathy, Leadership



Integrating Ethics and Sustainability into Curriculum

Anmol Chauhan

Biyani Girls College, Jaipur

Abstract

Teaching ethics and sustainability in schools is essential for preparing students to tackle the complex challenges the world faces today. This initiative seeks to create a well-rounded approach to sustainability education that includes ethics, critical thinking, and problem-solving skills. When ethics and sustainability are part of the curriculum, students will understand how social, environmental, and economic systems connect. They will gain the skills and knowledge needed to examine complex sustainability issues, evaluate evidence, and come up with sound solutions. This approach will nurture a new generation of leaders ready to confront sustainability challenges and promote sustainable growth. The curriculum will be interdisciplinary, drawing from natural sciences, social sciences, and humanities. The expected outcomes of this initiative include: Informed and engaged citizens: Students will be able to make informed decisions and take action on sustainability topics. Critical thinking and problem-solving, Students will learn to analyze difficult sustainability challenges and create effective solutions. Including ethics and sustainability in the curriculum will help develop a more sustainable and just world. By putting ethics and sustainability into educational programs, we can prepare future generations to face the complex sustainability challenges the world experiences today.

Keywords: Social, Environmental, Economic, Critical Thinking



Education for Promoting Sustainable Development

Apoorva Mathur

Biyani Girls College, Jaipur, India

Abstract

Education for Sustainable Development (ESD) represents a fundamental shift in how teaching and learning are approached, equipping individuals and communities with the knowledge, skills, and values necessary to make informed decisions about environmental protection, economic responsibility, and social equity. Rather than focusing solely on memorization, ESD emphasizes active engagement, critical thinking, and collaboration to address pressing global challenges. By embedding themes such as climate change, biodiversity loss, poverty reduction, and responsible consumption into curricula worldwide, ESD fosters awareness while encouraging learners to take practical action within their communities. This approach aligns closely with the United Nations Sustainable Development Goals (SDGs), particularly Goal 4, which emphasizes inclusive and quality education as a foundation for long-term sustainability. Schools adopting ESD are not only preparing students for academic achievement but also cultivating problem-solving skills, creativity, and intercultural respect. Learners trained under this framework develop the ability to connect local issues with global challenges, transforming education into a platform for building solutions rather than merely transmitting knowledge. Despite varying contexts across cultures and economies, the impact of ESD is visible in classrooms where students engage directly in sustainability initiatives, linking theory to practice. Teachers are increasingly reshaping lessons to integrate sustainability principles, thereby nurturing adaptable citizens prepared to address 21st-century challenges. While outcomes take time to materialize, the groundwork being laid today creates ripple effects that extend well beyond graduation, influencing personal choices, professional practices, and community development. At its core, ESD is not an optional addition but a reimagining of education itself. By embedding sustainability into everyday learning, it empowers people to act responsibly toward the environment, society, and future generations. Although no single model guarantees success, ESD significantly improves the odds of achieving equitable and sustainable futures by fostering awareness, responsibility, and cooperation from an early age. Ultimately, education becomes more than academic preparation—it becomes a catalyst for collective action, ensuring that future generations inherit not only knowledge but also the capacity to safeguard the planet and human well-being.

Keywords: Sustainable Development Goals, Global Challenges, Critical Thinking, Lifelong Learning



Digital Citizenship and Environmental Responsibility

Divyangi Sharma

Biyani Girls College, Jaipur, India

Abstract

These days everything's connected through tech. Being good digital citizens matters more than ever now. That basically means using tech in ways that don't screw things up for others online. Knowing how stuff works, keeping things secure, not being a jerk in comments sections. Then there's the whole environment angle too. Trying to leave less crap behind as we go about our lives. Turns out those two ideas crash into each other in weird ways. Our phones and laptops and streaming habits come with hidden costs. Data centres suck up crazy amounts of power 24/7. Old gadgets pile up as e-waste full of toxic junk. Factories making new devices chew through rare materials like there's no tomorrow. But here's the thing – tech's not all bad news for the planet either. Social media can spread green ideas faster than ever before. Apps help people track their carbon footprints without breaking a sweat. Smart thermostats and energy grids powered by AI? Those actually cut waste when they work right. The fix starts with teaching better habits honestly. Schools should show kids how their TikTok scrolling affects server farms somewhere. Companies need to push recycling programs that don't feel like pulling teeth. Maybe we all chill with upgrading phones every six months too. At the end of the day, it's about balancing convenience with conscience. Finding ways to stay connected without wrecking the place we're all trying to share online and offline both. Little changes add up when everyone's on board, you know. Like closing unused apps or keeping devices longer instead of chasing shiny new models constantly. Doesn't have to be perfect – just better than yesterday most days.

Keywords: Environment, Laptops, Gadgets, AI

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Sustainable Fashion Design Materials and Practises-Innovative and Bio-Based Materials

Ekta Gaur

Biyani Girls College, Jaipur

Abstract

Research increasingly suggests textile innovation plays a critical role in advancing sustainable fashion practices. One promising area involves bio-based material development, which could serve as viable alternatives to petroleum-derived fabrics and resource-heavy agricultural textiles. These

emerging materials utilize renewable biological sources including plant cellulose, fungal networks, and microbial processes. Evidence indicates their production methods generally require fewer synthetic inputs while maintaining functional integrity. The environmental case for this shift appears compelling. Studies show bio-based textiles could reduce fossil fuel dependence in fabric production by approximately 59% compared to conventional polyester manufacturing processes. They also address pressing concerns about water consumption and chemical pollution from traditional dyeing methods. Notable examples include pineapple leaf fiber composites used in Piñatex leather alternatives and mycelium-grown Mylo materials that mimic animal hides with minimal ecological impact. Recent trials with algae-based dyes demonstrate colourfastness comparable to synthetic options while using 80% less freshwater in application processes. Performance characteristics offer another argument for adoption. Mycelium-derived textiles naturally exhibit moisture-wicking properties exceeding many synthetic fabrics, while lab-grown spider silk proteins demonstrate tensile strength rivalling steel at microscopic scales. Truth is, most prototypes still face scalability challenges—production costs don't yet match conventional options, and consumer perceptions about durability remain sceptical. Industry analysts note that achieving price parity might require simultaneous advancements in bio manufacturing infrastructure and regulatory support for circular production models. Interestingly, lifecycle assessments reveal potential cascading benefits beyond immediate material substitution. Agricultural waste streams repurposed for textile production could create closed-loop systems where crop residues become valuable feedstock rather than burning hazards. Microbial cellulose cultivation shows particular promise here—it's observed that bacterial cultures can transform fruit waste into flexible textile substrates within controlled environments. While technical hurdles persist, current research directions suggest biology-driven solutions might fundamentally reshape how we approach textile design and disposal. Ultimately, the path toward widespread implementation involves addressing multiple interconnected factors—from optimizing microbial growth cycles to educating consumers about care requirements for biodegradable garments. Evidence indicates collaboration between material scientists and fashion designers will prove crucial for balancing aesthetic appeal with ecological performance metrics. As production methods mature and costs decrease, these innovations could potentially displace 30-40% of petroleum-based textiles by 2040 according to recent modelling studies. Truth is, biology might hold the key to reconciling fashion's creative ambitions with planetary boundaries more effectively than previous technological interventions managed to achieve.

Keywords: Environment, Fossil Fuel, Water Consumption, Chemical Pollution, Biodegradable Garments



Technology in Sustainability

Khushee Shekhawat

Biyani Girls College, Jaipur

Abstract

Incorporating technology into sustainable fashion has emerged as a transformative force reshaping the manner in which materials are created, clothes are manufactured, and fashion is consumed. Conventional fashion processes have historically been linked with wasteful use of resources, harmful chemicals, and mass waste production. Yet technological advancements are providing new avenues for the mitigation of these problems alongside enabling ecological stewardship and responsible production. One of the key developments is the application of 3D printing and computer-aided design (CAD) tools that reduce the amount of fabric waste through accurate pattern-making and allow on-demand manufacturing to cut overproduction. Artificial intelligence (AI) and big data analysis facilitate trend forecasting, optimized supply chain management, and intelligent inventory control to minimize unsold stock and its environmental footprint. It further increases transparency as it enables consumers to track clothing back to the source and guarantee fair labour practices and responsible material use. In product development, biotechnology has provided lab-grown leather, textiles from mushrooms, and regeneration of recycled fibers, which shift reliance away from energy-hungry natural fibers and toxic synthetics. Waterless dyeing technology and computer-controlled cutting and sewing machines also increase resource efficiency. Virtual reality (VR) and augmented reality (AR) are transforming consumer experiences with digital try-ons, thus lowering product returns and waste. All in all, technology is not merely an instrument but the driver of fashion sustainability. It closes the gap between imagination and accountability by facilitating closed-loop production, minimizing carbon footprints, and enabling responsible consumer decisions. The future of sustainable fashion comes in the form of amplifying these technologies, making them accessible and incorporating them into conventional methods to establish an overall circular and responsible fashion system.

Keywords: 3D Printing, Computer-Aided Design, Artificial Intelligence, Fashion



E-Waste Management and Digital Responsibility

Mansi Bhardwaj

Biyani Girls College, Jaipur

Abstract

In the 21st century, digital technology has become an inseparable part of human life, reshaping communication, education, business, and entertainment. However, the increasing dependence on technology has also brought with it a hidden challenge: the management of electronic waste (e-waste). As devices become out-dated at a faster pace, millions of tons of e-waste are generated each year, posing significant risks to the environment and human health. Digital citizenship, which emphasizes responsible and ethical use of technology, is incomplete without environmental responsibility. This connection highlights the urgent need to integrate sustainable practices into our digital lives. E-waste, when disposed of carelessly, releases harmful chemicals such as lead, mercury, and cadmium into the soil, air, and water. These toxic substances threaten ecosystems and can cause serious health issues for communities, especially in developing countries where e-waste dumping is common. The concept of digital responsibility therefore goes beyond online safety and ethical behaviour; it also requires individuals and societies to think critically about the life cycle of the devices they use. Recycling, reusing, and donating old devices are small yet impactful steps that every responsible digital citizen can take. Furthermore, digital platforms themselves can play a transformative role in spreading awareness. Social media campaigns, online petitions, and educational websites encourage people to adopt sustainable habits. Governments and institutions also bear the responsibility of creating strict e-waste management policies, providing safe recycling centres, and promoting green innovations in technology production. Companies, on the other hand, can embrace eco-friendly designs and support take-back programs to ensure that devices are disposed of responsibly. Ultimately, environmental sustainability must be considered a fundamental pillar of digital citizenship. Technology and the environment are deeply interconnected, and the choices we make as digital citizens will shape the future of our planet. By practicing mindful consumption, supporting recycling initiatives, and raising awareness through digital tools, individuals can bridge the gap between digital progress and ecological preservation. Thus, e-waste management is not just a technical necessity but also a moral responsibility, reminding us that true digital citizenship extends beyond the screen and into the natural world.

Keywords: Communication, Education, Business, Entertainment, E-Waste, Environmental Sustainability

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The Role of Ethics and Sustainability in the Educational System

Megha Rathore

Biyani Girls College, Jaipur

Abstract

The integration of ethics and sustainability in education is essential for nurturing responsible citizens capable of addressing the complex challenges of the modern world. Education should go beyond academic excellence to include the development of values, moral responsibility, and sustainable behavior. This study explored ethics and sustainability through three interconnected dimensions: ethical awareness, sustainability education, and community participation. Students were introduced to concepts such as honesty, empathy, fairness, digital ethics, and respect for diversity, while practical initiatives including energy conservation, plastic reduction, biodiversity protection, waste segregation, rainwater harvesting, and eco-clubs were implemented on campuses. By linking ethics with sustainability, students recognized that responsibility extends beyond personal life into collective environmental and social action. Campaigns, peer learning, and collaborative projects encouraged the adoption of ethical values alongside eco-friendly practices. The outcomes demonstrated that students became more conscious of integrity, respect, and fairness while embracing sustainable behaviors in daily life. Embedding ethics and sustainability in education not only fostered character development and critical thinking but also promoted collective accountability. The study concludes that the education system must inspire learners to live responsibly, ensuring a just and sustainable future for all.

Keywords: ethics, sustainability, education system, moral responsibility, holistic learning



Global Citizenship: Building Responsible and Sustainable Societies

Nidhi Rathore

Biyani Girls College, Jaipur

Abstract

In the 21st century, the concept of global citizenship has become essential for shaping a peaceful, sustainable, and inclusive world. Global citizenship goes beyond national identity, emphasizing a sense of belonging to a common humanity. It inspires individuals to recognize their responsibilities not only towards their own communities but also towards the global society and the planet. Global citizenship education fosters critical awareness, empathy, and respect for diversity. It equips learners with the ability to analyse world issues such as climate change, poverty, inequality, human

rights, and technological ethics. This approach enables individuals to actively engage in addressing global challenges, while also promoting social justice, sustainability, and intercultural understanding. The role of global citizenship is also linked to the United Nations Sustainable Development Goals (SDGs), which encourage cooperation across borders to achieve peace, prosperity, and environmental protection. By nurturing values of solidarity, collaboration, and ethical responsibility, global citizenship strengthens democracy and civic engagement at both local and international levels. In conclusion, global citizenship is not just a concept, but a practice of living with awareness, responsibility, and compassion. It empowers individuals to act as change-makers, ensuring that the principles of sustainability, equality, and human dignity are upheld for future generations.

Keywords: Citizenship, Humanity, Sustainable Development Goals, International, Global Citizenship



The Role of Ethics and Sustainability in the Educational system

Rakshika Sharma

Biyani Girls College, Jaipur

Abstract

The integration of ethics and sustainability into the educational system has become increasingly vital in shaping responsible global citizens. Ethics in education fosters moral values, integrity, and social responsibility, while sustainability education emphasises environmental awareness, resource conservation, and intergenerational equity. Together, they equip learners with critical thinking skills and a sense of accountability toward society and the planet. By embedding these principles in curricula, pedagogy, and institutional practices, the education system not only prepares students for professional success but also nurtures empathy, inclusivity, and ecological consciousness. This approach ensures that future generations are capable of making ethical decisions and adopting sustainable practices in both personal and professional spheres. The role of ethics in the educational system begins with instilling values such as honesty, respect, empathy, responsibility, and fairness. Schools, colleges, and universities serve as social institutions where students not only acquire subject knowledge but also develop character and a sense of civic duty. Ethical education fosters critical thinking, helps students differentiate right from wrong, and prepares them to navigate complex moral dilemmas in personal, professional, and social contexts. Furthermore, ethical frameworks are indispensable in professional fields such as medicine, law, business, and technology, where decisions can have significant human and social consequences. By embedding ethics into the curriculum, education ensures that graduates do not merely pursue personal success but also contribute to the collective good of society. Similarly, sustainability in education is vital in

addressing pressing global challenges such as climate change, biodiversity loss, environmental degradation, resource depletion, and social inequalities. The concept of Education for Sustainable Development (ESD), promoted by UNESCO, highlights the need to empower learners with the knowledge, skills, values, and attitudes required to shape a sustainable future. Incorporating sustainability into the curriculum means teaching students about environmental stewardship, responsible consumption, renewable energy, sustainable economic practices, and social equity. It also means encouraging experiential learning, community engagement, and interdisciplinary approaches that connect classroom learning with real-world problems. Sustainability education prepares learners to become proactive agents of change who can design and implement solutions that promote ecological balance and social justice. The integration of ethics and sustainability in the educational system creates a holistic framework for human development. Ethics teaches individuals to act with integrity and accountability, while sustainability broadens the vision to include intergenerational equity and global responsibility. When combined, they nurture values-based education that not only addresses intellectual growth but also fosters emotional intelligence, empathy, resilience, and a sense of purpose. This combination is essential in a globalized society where decisions in one part of the world can have far-reaching consequences across borders and generations. The responsibility for promoting ethics and sustainability in education lies not only with policymakers but also with teachers, institutions, communities, and students themselves. Policymakers must design curricula that integrate moral education and sustainable practices across disciplines. Teachers must act as role models, demonstrating ethical conduct and environmental responsibility in their actions. Institutions must create eco-friendly campuses, encourage research in sustainability, and ensure ethical governance in academic and administrative practices. Communities and families must support educational initiatives by reinforcing these values at home and in social contexts. Finally, students must actively engage with ethical learning and sustainability projects, taking ownership of their role as future leaders.

Keywords: Ethics, Sustainability, Education System, Moral Values, Environmental Awareness, Responsible Citizenship, Holistic Development.

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Art as Reflection of Local Environment Issues

Sanjana Tomar

Biyani Girls College, Jaipur, India

Abstract

Art has long served as a powerful medium for reflecting social issues, and today the environment is a pressing concern. Around the world, artists increasingly draw inspiration from their local environment, using their work to spotlight environmental damage, climate change, deforestation, pollution, and the decline of biodiversity. In many communities, especially those impacted by ecological problems, art serves as a voice for the land and its people. One notable theme is "Vanishing Landscapes," where artists show the slow disappearance of natural habitats due to city growth or climate change. Another striking theme is "Plastic Invasion," which uses recycled materials to comment on the massive amount of plastic waste in local rivers, beaches, and streets. "Toxic Beauty" examines the contradiction of industrial growth, highlighting how factories and chemical plants create wealth but also harm the environment. In rural areas, "Dying Waters" illustrates the reduction of lakes and rivers from overuse or pollution, which often impacts farming and community life. In indigenous and tribal areas, art often focuses on "Sacred Land under Threat," blending traditional designs with contemporary issues like mining or logging. These works not only increase awareness but also help preserve cultural memory. Through murals, sculptures, photography, and performances, local artists change their surroundings into a visual story, promoting discussion, education, and activism. In this way, art acts as both a reflection and a catalyst for change.

Keywords: Environment, Deforestation, Communities, Toxic Beauty.



Citizen Science as a Tool for Environmental Protection

Sanskriti Thakur

Biyani Girls College, Jaipur, India

Abstract

Citizen science is becoming one of the most meaningful ways through which ordinary people can contribute to environmental protection. In simple words, it is the participation of common citizens in scientific work—such as observing nature, collecting samples, monitoring pollution, or documenting local plants and animals. Earlier, environmental research was mainly done by experts and institutions, but today the involvement of local communities has made it more practical and

powerful. For example, when people note down the changes in weather, report illegal dumping, or take part in biodiversity surveys, they generate valuable information that can be used by scientists and policymakers. Beyond data collection, citizen science has a deeper purpose: it connects people emotionally with their surroundings. When individuals actively participate, they begin to see themselves not only as residents of a place but as caretakers of the environment. This sense of responsibility is what transforms awareness into real action. Campaigns for clean air, safe water, and sustainable living become stronger when citizens engage with them directly. In the present time of climate crisis, deforestation, and pollution, citizen science acts as a bridge between knowledge and action. It gives voice to communities, encourages civic participation, and empowers people to take ownership of their environment. It shows that protecting nature is not just the duty of scientists or governments but of every individual. In this way, citizen science is not only a tool for environmental protection but also a path towards creating a more responsible and conscious society. What makes citizen science special is not only the data it provides but also the bond it creates between people and their surroundings. When citizens participate, they begin to see themselves as caretakers of the Earth. This feeling naturally turns into responsibility, and responsibility into action. Campaigns for clean air, fresh water, and greener spaces become stronger when people join hands. Today, when our planet is facing climate challenges, citizen science is like a bridge between knowledge and awareness. It reminds us that protecting the environment is not the job of a few experts—it is the shared responsibility of all of us. By coming together as citizens and engaging in science, we can create a more conscious, sustainable, and hopeful future

Keywords: Citizen Science, Caretakers, Deforestation, Responsibility.



Digital Citizenship and Environmental Responsibility

Sonam Saini

Biyani Girls College, Jaipur, India

Abstract

New digital technologies are transforming the ways people communicate, learn, and access resources. While connectivity brings unparalleled potential for collaboration and innovation, it also significantly increases environmental footprints in terms of energy intensive infrastructures and e-waste. This paper investigates how cultivating digital citizenship can reduce ecological impacts and promote collective action toward sustainability. Digital citizenship goes beyond internet manners to include educated, ethical engagement in digital environments. By incorporating environmental values into digital social norms, users are able to make informed decisions regarding device use, information sharing, and platform interaction. This paper examines models that incorporate digital rights and responsibilities within ecological principles. Educating learners with digital and eco-literacy is instrumental for cultivating responsible behaviors. New curricula fold in practice-based

projects—like virtual resource audits and gamified sustainability challenges—to reinforce the link between online behaviors and tangible environmental effects. Case studies demonstrate how blended learning models create lasting behavioral change. Collaboration between academic and industry partners closes the loop between theory and scalable solutions. Shared efforts—are it green data centers or circular-economy hackathons—allow young people to co-design technologies that reduce carbon footprints. Policy suggestions focus on incentives for sustainable product innovation and community-owned digital platforms. Conjoining digital citizenship and environmental responsibility presents a strategic route to a sustainable future. Educating the stakeholders, building cross-sector collaborations, and enforcing green-centric digital practices allow societies to leverage technology as a force of ecological renewal. Future inquiry can research measurements for evaluating the long-term effects of digital stewardship on environmental resilience.

Keywords: Digital Citizenship, Environmental Responsibility, Sustainability Education, Industry-Academia Collaboration, Youth Engagement, Responsible Digital Practices



The Role of Ethics and Sustainability in the Educational System

Tanuja Sharma

Biyani Girls College, Jaipur

Abstract

The 21st century has brought an urgent call to reimagine education, not merely as a means of knowledge transfer but as a transformative process that shapes values, attitudes, and responsibilities. The growing environmental crisis, ethical dilemmas of technological advancement, and widening social inequalities underscore the importance of embedding sustainability and ethics in learning systems worldwide. Traditional education has largely focused on technical competence and industrial relevance; however, the absence of ethical reasoning and sustainability consciousness risks producing graduates who excel in innovation but lack accountability toward society and the planet. To shape a sustainable future, the educational system must become an active bridge that unites academic research, industrial practices, and global citizenship. This paper examines how ethics and sustainability can be strategically integrated into curricula, pedagogy, and institutional frameworks to empower learners to act with integrity, inclusivity, and responsibility. This paper adopts a qualitative and analytical approach by synthesizing literature from education policy, sustainability studies, and ethical philosophy. Case studies of universities and schools that have implemented sustainability-focused curricula are reviewed to understand practical models and challenges. Policy frameworks by UNESCO, the UN Sustainable Development Goals, and leading academic institutions are examined to highlight global benchmarks. The methodology also explores cross-disciplinary linkages, recognizing that ethics and sustainability cannot be confined to environmental sciences or humanities alone but must flow through engineering, business, medicine, and technology disciplines alike. The analysis emphasizes inclusive education practices that link

classroom learning with community engagement and industry collaboration. Findings reveal that integrating ethics and sustainability into education fosters long-term societal benefits, including the development of critical thinking, empathy, and problem-solving skills oriented toward real-world challenges. Students exposed to sustainability-centered curricula demonstrate stronger awareness of ecological systems, ethical decision-making, and social justice principles. However, the study identifies persistent challenges such as rigid curricula, lack of faculty training, and insufficient collaboration between academia and industry. Industrial stakeholders often prioritize short-term economic gains over sustainable practices, while academia can be slow to adapt its teaching models. The discussion argues that ethical literacy and sustainability must be embedded not as elective subjects but as core values across all disciplines. Furthermore, industry-academia partnerships can transform learning by offering experiential opportunities such as internships, research collaborations, and community projects that put sustainability into practice. The role of ethics and sustainability in education is not optional but essential in shaping a responsible generation capable of leading global transitions toward equity, environmental stewardship, and innovation with conscience. By restructuring curricula, empowering educators, and fostering partnerships between industry and academia, education can become a catalyst for systemic change. This integration ensures that graduates are not only skilled professionals but also ethical leaders who can respond to global crises with creativity, compassion, and accountability. A sustainable future depends on this union of knowledge and values, where every discipline contributes to the well-being of people and the planet.

Keywords: Ethics, Sustainability, Education, Industry-Academia Collaboration, Global Citizenship



Sustainable Fashion and Design

Tiya Jangid

Biyani Girls College, Jaipur

Abstract:

The international fashion business is among the biggest causes of environmental pollution, producing millions of tons of textile waste every year. Reducing waste within the fashion industry has thus become an important step towards creating a more ethical and sustainable business. It entails reducing waste throughout the life cycle of fashion, from production and design through to consumption and disposal. New approaches like zero-waste pattern cutting, recycling of fabric, and up cycling are critical to minimizing raw material consumption and landfill waste. Furthermore, taking up circular fashion practices, such as repair, resale, clothing rental, and take-back programs, promotes long garment lifecycles and decreases the occurrence of overproduction. Designers are increasingly exploring environmental-friendly materials, digital design capabilities, and on-demand production to ensure effective material use and less inventory waste. Consumer involvement is also crucial since responsible consumption and sustainable fashion behaviours play a crucial role in

reducing textile waste. By adopting waste reduction practices in both the design processes and consumer activities, the fashion sector can bring itself closer to realizing environmental accountability, efficient usage of resources, and long-term sustainability. In conclusion, waste minimization in fashion is not only a fad but a future necessity for the world and the world of fashion itself.

Keywords: Fashion, Clothing Rental, Lifecycles, Environment, Digital Design



Green Cities, Healthy Lives

Yashika Soni

Biyani Girls College, Jaipur

Abstract

Urbanization has become a key characteristic of the 21st century. It has led to rapid population growth in cities, putting immense pressure on natural resources. As cities grow, issues like air pollution, poor waste management, deforestation, and the urban heat island effect threaten both the environment and public health. The theme “Green Cities, Healthy Lives” highlights the need for eco-friendly urban planning, sustainable architecture, and community involvement to create healthier and more resilient urban areas. Green cities aim to balance human development with ecological preservation. Efforts such as promoting renewable energy, increasing green spaces, supporting sustainable transportation, and enforcing strict waste sorting rules directly improve air quality and lower carbon emissions. Additionally, green areas like urban parks, eco-parks, rooftop gardens, and vertical forests offer mental and physical health benefits to residents. Community involvement is essential; local residents should actively take part in initiatives like tree planting, water conservation efforts, and education programs about sustainable living. Working together, governments, NGOs, and citizens can make urban development environmentally sound and socially inclusive. A city's true progress depends not only on its infrastructure but also on the quality of life for its residents. By embracing the vision of “Green Cities, Healthy Lives,” we can create a future where urbanization works in harmony with nature, leading to healthier, happier, and more sustainable communities.

Keywords: Green Cities, Sustainable Urban Planning, Civic Engagement, Renewable Energy



Sustainable Fashion Design Materials and Practices

Samayra Aziz

Biyani Girls College, Jaipur, India

Abstract

Fashion has always been a medium of cultural expression and identity, yet in the 21st century it has also become a pressing environmental concern. The fast-fashion industry is linked with water wastage, micro plastic pollution, toxic dyeing processes, and mountains of textile waste that threaten ecosystems worldwide. India, with its rich legacy of khadi, handloom weaving, natural dyeing, and block printing, offers unique solutions to counter the negative impacts of globalized mass production. This paper seeks to highlight how combining traditional Indian crafts with modern sustainable design practices can create a responsible and future-ready fashion industry. The study adopts a qualitative and descriptive approach. It draws on existing research reports, sustainability audits, and examples of eco-friendly fashion initiatives. Case references include the use of organic cotton from Gujarat, bamboo fibre textiles, hemp cultivation in Uttarakhand, and recycled polyester. Field-based practices like khadi spinning, Chanderi weaving, and Ajrakh block printing are also reviewed to demonstrate their eco-friendly processes. In addition, the role of education in promoting sustainable fashion is emphasized, where students are engaged in workshops, awareness campaigns, and design challenges that integrate sustainability with creativity. The findings suggest that sustainable materials—such as hemp, bamboo, and organically grown cotton—consume far less water and energy while reducing long-term environmental footprints. Recycling and up cycling techniques lower textile waste and support a circular economy. In India, artisans involved in handloom and block printing not only provide eco-friendly alternatives but also preserve cultural heritage and support rural livelihoods. Integrating these practices into modern design curricula encourages students to think critically about fashion as both an art form and a social responsibility. Furthermore, digital campaigns led by youth help shift consumer attitudes away from fast fashion towards mindful, durable, and ethically produced clothing. The dialogue between academia and industry demonstrates that sustainability can coexist with style, profitability, and cultural pride. Sustainable fashion is not a luxury—it is a necessity for the future of both environment and society. By merging India's heritage textiles with innovative design practices, a new model of fashion can be built that is eco-friendly, culturally grounded, and globally relevant. Education plays a crucial role in this transformation by shaping responsible designers, conscious consumers, and proactive citizens. The paper concludes that sustainable fashion has the power to redefine style with responsibility, positioning Indian youth as global leaders in building a greener and more ethical world.

Keywords: Sustainable Fashion, Eco-Friendly Materials, Handloom, Up Cycling, Ethical Design



Education for Promoting Sustainable Development

Avantika Kumawat
Biyani Girls College, Jaipur

Abstract

Education is a powerful tool to achieve sustainable development by shaping knowledge, values, and skills that foster responsible behavior toward the environment, economy, and society. The United Nations' Sustainable Development Goal 4 (SDG 4) emphasizes quality education as a key driver to promote sustainability across all sectors. However, the challenge lies in integrating sustainability concepts into curricula, teaching practices, and community learning. This study adopts a qualitative and analytical approach, reviewing existing literature, case studies, and global initiatives related to Education for Sustainable Development (ESD). Data is drawn from UNESCO reports, national education policies, and practical examples of sustainability-focused educational programs. The methodology involves content analysis of policies and practices, supported by comparative evaluation of successful models. Findings highlight that education promoting sustainability increases awareness of environmental issues, encourages critical thinking, and develops problem-solving skills. Schools and higher education institutions that integrate sustainability into their curricula show greater student engagement in eco-friendly practices and community initiatives. The discussion reveals that effective ESD requires curriculum reform, teacher training, use of participatory methods, and collaboration between governments, NGOs, and local communities. Barriers include lack of resources, rigid education systems, and low awareness among educators. Education is central to promoting sustainable development, but success depends on making sustainability a cross-cutting theme in teaching and learning processes. By empowering individuals with knowledge, skills, and values, ESD can foster environmentally responsible citizens and support long-term social and economic progress. Strengthening policies, teacher capacity, and community participation is crucial for achieving the goals of sustainable development through education.

Keywords: Education for Sustainable Development (ESD), Sustainable Development Goals (SDGs), Environmental awareness, Curriculum integration, Teacher training, Community participation.

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Campaigning for Environmental Protection and Civic Engagement

Sarika Parashar

Biyani Girls College, Jaipur, India

Abstract

Environmental protection has emerged as one of the most pressing challenges of the 21st century, directly influencing human survival, public health, and sustainable development. Rapid industrialization, urbanization, deforestation, and climate change have significantly altered ecosystems, creating an urgent need for collective action. In this context, campaigning for environmental protection is not just an ecological necessity but also a civic responsibility. Civic engagement plays a central role in fostering awareness, encouraging behavioral change, and mobilizing communities to safeguard natural resources for present and future generations. Campaigns for environmental protection serve as crucial platforms to highlight the interdependence between human activities and the natural environment. They emphasize issues such as pollution control, biodiversity conservation, waste management, water security, and the adoption of renewable energy. Through rallies, workshops, media advocacy, digital platforms, and grassroots movements, campaigns translate complex environmental challenges into accessible messages for the general public. Importantly, they create a sense of shared accountability, motivating individuals to adopt sustainable practices like recycling, energy conservation, tree plantation, and reduced reliance on single-use plastics. Civic engagement is the foundation upon which successful environmental campaigns are built. It extends beyond mere participation to active involvement in decision-making processes, community initiatives, and policy advocacy. Citizens, particularly youth, play an instrumental role in demanding stricter environmental regulations, monitoring compliance, and ensuring that governmental and corporate actions align with ecological sustainability. Civic bodies, non-governmental organizations, and local communities collaborate to amplify voices, ensuring that environmental concerns are represented in both local governance and global discussions. This engagement bridges the gap between scientific knowledge and social action, making campaigns more inclusive, people-centered, and result-oriented. Furthermore, environmental campaigns foster a culture of responsibility and ethical citizenship. They encourage people to recognize the moral dimensions of environmental degradation, emphasizing the rights of future generations to a clean and healthy environment. Through education and awareness, campaigns nurture ecological consciousness, transforming individuals into active change-makers rather than passive observers. Civic engagement, in turn, empowers marginalized groups whose voices are often overlooked in mainstream policy discussions, ensuring that environmental justice is achieved alongside ecological sustainability. The effectiveness of such campaigns lies in their ability to combine advocacy with practical action. For example, clean-up drives, afforestation projects, eco-friendly product promotions, and sustainable urban planning initiatives demonstrate that small-scale civic efforts can lead to large-scale environmental transformation. When citizens engage actively, campaigns evolve into movements, fostering resilience and solidarity against global environmental crises. In conclusion, campaigning for environmental protection and civic engagement represents an inseparable partnership essential for building a sustainable future. While environmental campaigns raise awareness and provide direction, civic engagement ensures continuity, accountability, and

collective impact. Together, they inspire individuals, communities, and institutions to act responsibly towards the environment, ensuring that economic progress does not come at the cost of ecological degradation. Thus, active civic participation in environmental campaigns is not merely a choice, but a duty of every responsible citizen committed to safeguarding the planet.

Keywords: Environmental Protection, Human Survival, Public Health, Sustainable Development, Industrialization



The Role of Ethics and Sustainability in the Educational System

Mansi Shekhawat

Biyani Girls College, Jaipur

Abstract

Ethics and sustainability are fundamental pillars for shaping responsible citizens in today's globalized world. Education systems play a crucial role in instilling ethical values and promoting sustainable practices to address pressing issues such as climate change, inequality, and social justice. By integrating ethics and sustainability into curricula, students not only gain academic knowledge but also develop moral responsibility and awareness of environmental and social impacts. This study adopts a qualitative and analytical approach, drawing data from academic literature, UNESCO and UN reports, and case studies of educational institutions integrating ethics and sustainability into their programs. Content analysis is used to evaluate curriculum reforms, teaching methodologies, and institutional policies that promote ethical and sustainable practices. The findings indicate that including ethics and sustainability in education enhances critical thinking, civic responsibility, and environmental consciousness among learners. Schools and universities that embed these values show increased student engagement in community service, eco-friendly initiatives, and socially responsible projects. However, challenges include lack of trained educators, insufficient resources, and resistance to curriculum changes. The discussion emphasizes the importance of participatory teaching methods, experiential learning, and collaboration between policymakers, educators, and communities for effective integration. Ethics and sustainability are essential to building a future-ready education system that prepares students to face global challenges with responsibility and compassion. Strengthening teacher training, reforming curricula, and fostering community involvement are key steps toward embedding these principles in education. By doing so, education can contribute not only to individual growth but also to sustainable societal development.

Keywords: Ethics in education, Sustainability, Educational reform, Civic responsibility, Environmental awareness, Curriculum integration, Value-based learning.



The Role of Open Educational Practices in Building Accountable and Inclusive Governance

Abhilasha Sharma

Department of Liberal Studies and Political Science, JECRC University

Abstract

Open Educational Practices (OEP) extend beyond the use of open resources to include participatory, collaborative, and inclusive approaches to knowledge creation and dissemination. In the context of governance, OEP offers a transformative pathway to strengthen accountability, transparency, and citizen engagement. By promoting open access to information and encouraging co-creation of knowledge, OEP empowers stakeholders—students, educators, policymakers, and citizens alike—to actively participate in decision-making processes. This inclusivity fosters greater trust in institutions and enhances the responsiveness of governance structures to diverse social needs. Moreover, OEP nurtures digital literacy and critical thinking, enabling communities to question, analyze, and contribute constructively to policy development. The integration of OEP in governance frameworks not only democratizes access to knowledge but also bridges the gap between education and civic responsibility. Thus, OEP emerges as a vital tool in building accountable, transparent, and inclusive governance systems that are essential for sustainable development and social justice.

Keywords: Open Educational Practices, Good Governance, Accountability, Inclusivity, Transparency, Citizen Engagement

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Scars of Silence: Memory, Trauma, and Identity in Partition Literature

Swati Chawatt

JECRC University, Jaipur

Abstract

Partition literature serves as a powerful archive of memory, reconstructing the human cost of India's division in 1947 through voices that embody pain, displacement, and resilience. Writers such as Saadat Hasan Manto, Bhisham Sahni, Khushwant Singh, and Bapsi Sidhwa chronicle the ruptures of communal harmony and the fragmentation of identity, foregrounding both the brutality of violence and the endurance of the human spirit. These narratives reveal how Partition was not merely a political division but also a profound cultural and psychological rupture that scarred generations. Particularly, women's experiences emerge as central to Partition literature, as their bodies and lives became contested sites of honor, revenge, and survival. Through short stories, novels, and oral

histories, Partition literature interrogates themes of exile, nostalgia, memory, and the redefinition of home and belonging. By capturing silenced histories and marginalized voices, this body of work underscores literature's role in preserving collective memory and interrogating nation-making. Partition literature, thus, continues to resonate as a testimony to trauma while offering space for reconciliation, empathy, and dialogue across borders.

Keywords: Partition literature, Memory, Trauma, Identity, Displacement, Women's Narratives



Reimagining Knowledge: The Expanding Horizons of Digital Humanities

Geeta Garwa

JECRC University, Jaipur

Abstract

Digital Humanities (DH) has emerged as an interdisciplinary field that integrates computational tools with humanistic inquiry, reshaping the ways in which knowledge is produced, preserved, and disseminated. By combining literary studies, history, linguistics, and cultural analysis with digital methods such as text mining, data visualization, geographic mapping, and computational linguistics, DH expands the scope of traditional research. It enables scholars to uncover hidden patterns in texts, archive endangered cultural artifacts, and foster collaborative, open-access scholarship across borders. Beyond methodology, Digital Humanities raises critical questions about authorship, accessibility, and the politics of digital archives, challenging conventional notions of canon and authority. This research highlights how DH not only enhances humanities scholarship but also democratizes it, making knowledge more participatory and interactive. By bridging technology and humanistic values, Digital Humanities exemplifies how the digital age can enrich critical thinking, cultural memory, and interdisciplinary innovation.

Keywords: Digital Humanities, Computational Analysis, Text Mining, Data Visualization, Cultural Memory



The Mirror of the Mind: Intersections of Literature and Psychology in the Exploration of Human Experience

Vertika Srivastava

JECRC University, Jaipur

Abstract

Literature and psychology share a deep symbiotic relationship, as both disciplines engage with the complexities of human behavior, emotion, and consciousness. While psychology offers theories to analyze the workings of the human mind, literature provides a creative medium through which these inner realities are narrated, dramatized, and symbolized. From Freudian psychoanalysis in the works of modernist writers to Jungian archetypes in myth and folklore, psychological frameworks have enriched literary criticism and interpretation. Conversely, literary texts often anticipate or illuminate psychological concepts, offering nuanced portrayals of trauma, repression, identity formation, and the unconscious. This research examines how literature not only reflects psychological truths but also acts as a therapeutic space for both writers and readers, fostering empathy, catharsis, and self-reflection. By bridging the aesthetic and the analytic, literature and psychology together unravel the intricacies of human subjectivity, providing fresh insights into memory, desire, fear, and resilience. This interdisciplinary approach underscores the power of storytelling as both an artistic and psychological tool for understanding the human condition.

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From Page to Screen: Intersections of Film Studies and Literature in Narrative and Cultural Discourse

Komal Bharadwaj

JECRC University, Jaipur, India

Abstract

The dialogue between Film Studies and Literature reveals the dynamic interplay of two narrative traditions—one rooted in the written word and the other in the moving image. Literature provides the thematic, symbolic, and structural foundations that cinema often adapts, reinterprets, and visualizes. Conversely, film extends literary imagination by integrating visual, auditory, and performative elements, thereby generating fresh perspectives and meanings. The study of this intersection highlights processes of adaptation, intertextuality, and cultural transformation, illustrating how both mediums negotiate questions of authorship, ideology, and audience reception. Rather than perceiving film as subordinate to literature, contemporary scholarship positions the two as complementary art forms engaged in a dialogic exchange, enriching our understanding of narrative, representation, and cultural identity in global contexts.

Keywords: Film Studies, Literature, Adaptation, Intertextuality, Narratology, Cultural Identity, Visual Culture, Storytelling, Audience Reception, Comparative Aesthetics

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Sustainable Living and Moral Education: A Two-Pronged Strategy in Educational Institutions

Ayushi Tambi

JECRC University, Jaipur, Rajasthan, India

Abstract

The modern educational system is tasked with developing students' ethical character and encouraging sustainable activities in addition to teaching academic knowledge. In order to create responsible citizens for the future, this study examines the dual strategy of including ecological living and moral teaching into educational institutions, emphasizing their connections. Moral education, which is based on moral principles like justice, accountability, honesty, and empathy, serves as the cornerstone for both social and personal behavior. In contrast, sustainable living places a strong emphasis on social inclusion, resource conservation, environmental stewardship, and economic accountability. Education may foster not only intellectual development but also ecological and ethical consciousness by combining these two aspects. The study critically analyzes institutional procedures, pedagogical strategies, and policy frameworks that can support this integration, paying

special attention to the significance of the Sustainable Development Goals (SDGs) of the UN and the role of educators as role models. Redefining education as a transformative tool for both moral development and sustainable progress, the study concludes that integrating ethics and sustainability into curricula, campus culture, and community outreach will equip students to handle global challenges with compassion and responsibility.

Keywords: Ethics in Education, Moral Learning, Sustainable Living, Educational Institutions, Value-Based Education, Environmental Responsibility, Higher Education

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Art and Environment: Using Creative Expression to Support Youth Wellbeing

Tarika Sharma

Dept. of Psychology, School of Humanities & Social Sciences, JECRC University, Jaipur

Abstract

Environmental issues are closely linked to psychological distress among youth, creating a need for supportive interventions. This paper reviews the role of art therapy in addressing these concerns, drawing on concepts from eco-psychology, emotional regulation, and expressive therapies. Art provides a non-verbal medium for expressing fear, grief, and uncertainty, while also fostering resilience and ecological identity. Studies suggest that creative expression not only reduces distress but also motivates pro-environmental behavior. Community art projects further promote connectedness and responsibility. The review concludes that art therapy is both a psychological tool for wellbeing and a pathway to sustainable engagement.

Keywords: Art therapy, Eco-psychology, Youth, Emotional Regulation, Environmental Psychology, Expressive Therapies, Sustainability

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Policy Pathways for a Circular Economy: Digital Citizenship and Sustainable Consumption in Developing Economies

Meenakshi Yadav and Kritika Yadav

Jaipur School of Economics, JECRC University, Jaipur, Rajasthan

Abstract

Developing economies face the dual challenge of sustaining growth while mitigating environmental degradation, making circular economy (CE) adoption both urgent and complex. This paper examines policy pathways that integrate digital citizenship and sustainable consumption as levers for advancing CE models. Using comparative case studies from India's e-waste traceability systems, Kenya's digital agriculture and waste-to-value platforms, and Brazil's plastics circularity initiatives, the study analyses how technology-enabled citizen engagement can foster responsible consumption, waste reduction, and resource efficiency. Drawing on recent World Bank and UNEP datasets (2018–2023), the findings show that coordinated CE policies could reduce material intensity by 20–28% by 2030. The analysis highlights three policy pathways: first, institutionalizing CE frameworks with measurable national targets linked to SDGs 12 and 13; second, leveraging digital platforms to democratize awareness and embed behavioural nudges that encourage reuse, repair, and recycling; and third, building cross-sectoral coalitions between academia, industry, and government to design context-specific CE innovations. Yet, the research warns that weak digital inclusion risks excluding marginalized groups from CE benefits. The paper concludes that embedding digital citizenship principles into CE policies is essential for equitable transitions, and recommends integrating CE roadmaps into national development strategies while adopting digital governance tools for accountability and scale.

Keywords: Circular Economy; Digital Citizenship; Sustainable Consumption; Developing Economies; Extended Producer Responsibility (EPR); Digital inclusion; SDGs.



Beyond Flexibilities: Policy Approaches to Ensure Security and Sustainability in the Gig Economy

Kritika Yadav and Meenakshi Yadav

Jaipur School of Economics, JECRC University, Jaipur, Rajasthan

Abstract

The rapid expansion of the gig economy has transformed labor markets worldwide, offering unprecedented flexibility and innovation across industries. Yet, this model also exposes workers and institutions to structural insecurities, fragmented protections, and sustainability challenges. This

paper examines policy approaches that move beyond the rhetoric of flexibility to address systemic vulnerabilities inherent in platform-based employment. Two case studies are used for illustration. In India, where over 7.7 million gig workers (NITI Aayog, 2022) drive growth in ride-hailing, food delivery, and e-commerce, survey data show that while 83% value flexible schedules, more than 60% remain outside formal social protection systems, revealing a major policy gap. In contrast, the European Union's proposed Platform Work Directive (2021) seeks to reclassify millions of platform workers as employees rather than independent contractors, ensuring access to benefits such as paid leave and pensions. However, resistance from platform companies highlights the tension between innovation and regulation. By integrating these case studies with comparative insights from law, economics, and social policy, the study highlights mechanisms for embedding social security, environmental sustainability, and ethical governance into gig work systems. The findings emphasize the role of collaborative frameworks between governments, industries, and academia in harmonizing regulatory standards while respecting regional diversity. Uniting multidisciplinary perspectives and empirical evidence, the research proposes a roadmap that balances innovation with responsibility, securing a sustainable future of work that is both inclusive and resilient.

Keywords: Gig economy, policy approaches, sustainability, labor security, global industry–academia collaboration, future of work, EU Platform Work Directive



Abrogation of Article 370 and the Future of Governance: Legal, Social, and Educational Reflections in a Connected World

Anjali Yadav

IIS Deemed to be University Jaipur

anjaliyadav2702@gmail.com

Abstract

The abrogation of Article 370 in August 2019 stands as a watershed moment in Indian constitutional and political history, fundamentally altering the governance framework of Jammu and Kashmir (J&K). The decision not only redefined the region's relationship with the Union but also triggered wide-ranging debates on legal, social, and educational fronts. This paper undertakes a multidisciplinary exploration of the abrogation, situating it within the global discourse of governance in a digitally connected and rapidly evolving world. From a legal perspective, the study examines the constitutional mechanisms used to revoke Article 370, analyzing their implications for federalism, autonomy, and democratic processes. It explores judicial interpretations, the responses of political institutions, and the transformation of governance structures in J&K. The legal reforms are evaluated against the backdrop of digital governance, cyber law, and emerging regulatory frameworks that increasingly shape the legitimacy of state actions in a globalized context. From a social perspective, the paper highlights how the abrogation has affected communities both within

Kashmir and in the diaspora. Narratives of displaced Kashmiri Pandits and local populations reveal shifting identities, evolving civic responsibilities, and new patterns of engagement in political discourse. The role of digital platforms is critically assessed, showing how online spaces have become arenas for both constructive dialogue and the spread of polarized, sometimes misleading, narratives. This dynamic points to the growing significance of digital citizenship, cybersecurity, and responsible online engagement in shaping public opinion and civic participation. From an educational perspective, the research underscores the ethical responsibility of academia in conflict-affected regions. It examines how educational institutions can foster reconciliation by integrating narratives of conflict, displacement, and resilience into curricula that promote peace, justice, and sustainable development. By emphasizing ethics, sustainability, and inclusivity in pedagogy, the study argues that education serves as a crucial tool for long-term governance and stability in regions undergoing transformation. The paper also situates the abrogation within the broader global ripple effects, analyzing international reactions from neighboring countries, global powers, and multilateral institutions. These responses highlight how domestic legal changes can have far-reaching implications for diplomacy, security, and international law in an interconnected world. By weaving together legal, social, and educational reflections, the study argues that the abrogation of Article 370 is more than a regional constitutional reform—it is a test case of how governance, law, and education intersect in addressing the challenges of justice, security, and sustainability in the 21st century.

Keywords: Article 370, Governance, Kashmir, Digital Citizenship, Civic Engagement, Legal Reforms



Sustainability Beyond Classrooms: Ethical Perspectives on Solid Waste Management in the Educational System of JECRC University

Nidhi Sharma

Jaipur School of Economics, JECRC University, Jaipur, Rajasthan, India

Abstract

In higher education, sustainability is deeply rooted in institutional procedures and ethical duty, and it goes much beyond classroom instruction. This essay highlights how educational systems can serve as transformative agents for environmental change by examining JECRC University's solid waste management from the ethical and sustainability lens. Inadequate solid waste management presents ecological, social, and financial difficulties. The study examines the university's current waste management programs and evaluates how well they adhere to ethical and sustainable standards. It emphasizes how crucial it is to incorporate environmental ethics into pedagogy and policy in order to foster a culture of accountability among administrators, teachers, and students.

The study finds ways to incorporate ethical frameworks and circular economy principles into campus operations by examining issues like lack of awareness, behavioural gaps, and resource limitations. In the end, the study makes the case that colleges should serve as role models, demonstrating that sustainable waste management is an ethical duty rather than just a technical procedure. Through this kind of integration, the gap between knowledge and action is closed and students are guaranteed to understand and practice environmental topics. The university's role in advancing sustainability outside of the classroom is strengthened by this strategy.

Keywords: Sustainability, Ethics, Solid Waste Management, Higher Education, JECRC University, Environmental Responsibility, Circular Economy

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The Interplay between Job Satisfaction and Work-Life Conflict: A Psychological Perspective

Tapasya Sharda

Department of Psychology, School of Humanities and Social Sciences, JECRC University, Jaipur

Abstract

Job satisfaction and work–life conflict are two critical constructs in organizational and psychological research, deeply influencing both employee well-being and organizational success. Job satisfaction is understood as an individual’s overall evaluation of their work experience, encompassing emotional, cognitive, and behavioral responses. Work-life conflict, by contrast, occurs when demands from work and personal life are incompatible, leading to time-based, strain-based, or behavior-based clashes. This review paper draws on frameworks such as Role Theory, Boundary Theory, and Conservation of Resources Theory to examine their complex interplay. Evidence consistently shows that increased work–life conflict undermines job satisfaction, contributing to burnout, stress, absenteeism, and turnover intentions. However, the relationship is not entirely one-directional: higher job satisfaction often serves as a buffer, equipping employees with better coping skills, greater resilience, and a more positive outlook, which can mitigate perceptions of conflict. The paper also discusses moderating factors such as leadership style, workplace flexibility, gender roles, and cultural norms that shape the strength of this relationship. Practical implications highlight the importance of supportive organizational policies, flexible scheduling, and employee well-being initiatives. Finally, research gaps are identified, including the influence of digital work boundaries, remote work demands, generational differences, and cross-cultural variations, offering directions for future inquiry.

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Role of Resilience in Post-COVID Mental Health

Meenakshi Dadhich

Department of Psychology, School of Humanities and Social Sciences, JECRC University, Jaipur

Abstract

The COVID-19 pandemic posed unprecedented challenges to global mental health, marked by heightened stress, anxiety, grief, and social isolation. In this context, resilience emerged as a critical protective factor facilitating psychological adaptation and recovery. Resilience, conceptualised as the capacity to cope with adversity, regulate emotions, and maintain well-being, played a central role in buffering the negative impact of prolonged uncertainty and disruption. Post-pandemic studies highlight that individuals with higher resilience reported lower levels of depression, anxiety, and burnout, and demonstrated greater optimism, social connectedness, and problem-solving skills. At the community level, resilience fostered collective coping and strengthened support networks, promoting recovery and adaptation. Interventions that build resilience, through mindfulness, cognitive-behavioural strategies, positive psychology practices, and social support, are vital for enhancing mental health in the post-COVID era. Thus, resilience not only mitigates psychological distress but also fosters growth, offering a pathway toward long-term mental health recovery and well-being.

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Federal Polity in India: Dr. B. R. Ambedkar's Perspective

Susanta Kumar Naik

Dept. of Liberal Studies & Pol. Science, SHSS, JECRC University, Jaipur-303905, Rajasthan,

Email: susantank1@gmail.com

Abstract

Dr. B. R. Ambedkar's thoughts as reflected in his writings and speeches acquires significant importance in tracing the history and growth of socio-cultural and political thought in India. During the attainment of independence, the existence of two major problems of the Indian politics: first, the Hindu-Muslim communal question and second, the problem of Princely States paved the way for the emergence of a consensus to choose a federal polity for India. As the chairman of the Drafting Committee, Dr. B R Ambedkar favoured for 'federation' with 'Strong Centre' in order to protect the interest of the unity of the country. It is also noteworthy to state that Dr. Ambedkar debated extensively on the usage of the term 'federation' or a 'Union' in the Constitution while designating India. This historical decision shaped the society, political system and Indian constitution in due course of time. Given this framework, the present Indian federalisation is facing continuous challenges in terms of growing statehood demands. It is well known fact that the Indian politics has

been experiencing a paradigm shift in the nature of federal principle. Mainly, this paper would focus comprehensively on the review of literature in order to provide the nature of shift on the Indian federalisation with respect to the reorganisation of princely states to the modern Indian states.

Key Words: Federalism, Indian Constitution, Princely States, Statehood Demands



The Paradox of Online Happiness: Social Media Persona Vs. Real Mental Health among Influencers (With A Focus on Influencer Suicide)

Reena Dadhich

Department of Journalism and Mass Communication, Banasthali Vidyapeeth, Niwai, Rajasthan

Abstract

In the digital era, the paradox between the apparent happiness of social media influencers and their real mental health struggles has emerged as a critical social issue. This study focuses on cases in India where social media influencers have taken the extreme step of suicide. The objective of this study is to understand how the pressure to maintain an idealized and appealing online persona affects influencers' mental well-being, and also identify the main stressors and warning signs that may lead to suicide ideation among influencers. This research also analyses the broader impact of the issues on their followers and the wider digital community. A qualitative case study methodology was employed. The research involved an in-depth analysis of recent influencer suicide cases in India, examining their social media post, media reports, and public interactions. Additionally, interviews were conducted exclusively with psychologists to gain expert insights into the underlying mental health factors and warning signals associated with such incidents. Through content analysis, the study explored the types of posts, emotional shifts, and sudden changes in online activity that may indicate psychological distress. Recent research and available mental health data were also reviewed to strengthen the findings. The study reveals that influencers experience intense psychological pressure to always appear happy, successful, and popular, which often leads to anxiety, depression, and a sense of isolation. Key stressors include the fear of losing followers, negative comments, cyberbullying, and the constant need for validation through likes and engagement metrics. In several cases, subtle warning signs such as cryptic posts, sudden withdrawal from online activity, and expressions of hopelessness are visible before suicide. According to psychologists, this paradox between online persona and real mental health not only affects influencers themselves but also harms their followers, who may internalize unrealistic standards and experience emotional distress. In this research, we find the urgent need for greater mental health awareness, support systems, and responsible platform policies for influencers. Bridging the gap

between the online image and real well-being is essential to protect both influencers and their vast digital audiences from further harm.



Legal Tech Innovations and Managerial Strategies

Charu Mathur

Abstract

The rapid advancement of legal technology is transforming how law firms and corporate legal departments deliver services, manage risks, and create value. Innovations such as AI-powered e-discovery tools, contract analytics platforms, and blockchain-enabled records are streamlining routine processes while improving accuracy and efficiency. However, the integration of these technologies requires thoughtful managerial strategies that balance innovation with ethical, regulatory, and organizational considerations. Key challenges include addressing algorithmic bias in predictive justice tools, safeguarding confidential client data, and ensuring compliance with evolving data protection laws. Equally critical is the need for talent development—upskilling legal professionals to work effectively with digital tools and rethinking law school curricula to prepare future practitioners for a tech-driven landscape. Managerial strategies must also focus on change management, resource allocation, and fostering cross-functional collaboration between legal, IT, and compliance teams. By examining real-world case studies, this paper highlights how successful adoption of legal tech depends not only on technological capabilities but also on leadership vision, ethical frameworks, and organizational readiness. Ultimately, the convergence of legal innovation and managerial strategy holds the potential to reshape legal practice into a more agile, transparent, and client-centric domain.

Keywords: Case Studies, Ethical Considerations, Digital Transformation, Blockchain, Artificial Intelligence



Security Beyond Survival: Understanding Labour Exploitation Through the Lens of Genocidal Structures

Vaishnavi Singh

IIS (Deemed to be) University, Jaipur, India

Abstract

This paper interrogates the intersections between labour exploitation and genocidal structures, arguing that contemporary labour insecurity must be understood not only as an economic condition but also as a manifestation of systemic violence rooted in histories of exclusion and domination. By drawing on genocide studies, the analysis situates exploitative labor practices within broader frameworks of structural violence, dehumanization, and erasure. The paper examines how genocide, often conceived as the destruction of physical bodies, simultaneously reconfigures economic and social hierarchies in ways that normalize exploitation and reduce survival to its bare minimum. Survivors and marginalized groups are frequently coerced into precarious labour regimes where dignity, rights, and autonomy are denied, mirroring patterns of subjugation embedded in genocidal processes.

The study employs a comparative perspective, engaging with cases from Rwanda and Sudan alongside contemporary instances of migrant and gig labour exploitation, to reveal continuities between past atrocities and present-day economic marginalization. In doing so, it challenges conventional binaries between “conflict” and “post-conflict” or “violence” and “peace,” demonstrating that the afterlives of genocide persist in economic structures that render survival itself precarious. Ultimately, the paper argues for an expanded conception of security—beyond mere physical survival—that includes labour justice, social dignity, and protection from systemic exploitation. Such a reconceptualization highlights the urgent need for policy frameworks attentive to both the material and structural legacies of genocidal violence.

Keywords: Structural Violence, Dehumanization, Post-Conflict, Violence, Peace



Fast Fashion vs. Sustainable Fashion: A Microeconomic and Behavioral Economics Analysis of Consumer Material Choices

Radhika Shah

JECRC University, Jaipur, Rajasthan, India

Abstract

This paper investigates the tension between fast fashion and sustainable fashion through the lens of microeconomics and behavioral economics, with a particular focus on material choices and consumer behaviour. It explores how factors such as price elasticity, substitution effects, and externalities shape demand for sustainable textiles compared to low-cost synthetic alternatives. Drawing on insights from behavioral economics, the study examines how present bias, status quo bias, and perceptions shaped by greenwashing influence consumer decisions in the fashion market. The analysis also considers the willingness to pay for eco-friendly materials and the impact of nudges, social norms, and information disclosure on shifting consumption patterns. By integrating theory with case-based evidence, the paper highlights the economic and psychological drivers of consumer material choices and evaluates policy instruments—such as taxes, subsidies, and labeling schemes—that could encourage sustainable practices in fashion design and consumption. The findings underscore the importance of combining economic incentives with behavioral interventions to promote a transition from fast fashion to more sustainable material use.

Keywords: Sustainable fashion, Fast fashion, Consumer behaviour, Microeconomics, Behavioral economics, Material choice

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Education the First Step towards Sustainability

Sania Jamal

Department of Political Science, Jamila Millia Islamia, New Delhi- 110025, India

Email- sj.mapub@gmail.com

Abstract

Education is not only a word but a quest of being complete in the knowledgeable existence. It provides meaning to life, enhanced thinking between right and wrong, enables wisdom and importantly gives an understanding towards achieving a holistic future. Future depends on sustainability and sustainability is the future. Recent climatic changes have posed an extreme challenge for the human beings as well as the nature. The melting of the glaciers to the cloudburst in hilly terrains indicated the levels of selfishness and carelessness performed in all these years

towards environment and the nature. Food being a first component towards sustainability has been compromised by the artificial components leading to harmful effects in the production of food. The food security of individuals has been turmoiled and created degradation and disturbances in health and well-being. The primary need of educating oneself towards sustainability left missing. The time zone in the accomplishment of achieving Sustainable Development. This paper will highlight the importance of education and its link towards attaining a prosperous future and development. The issues and challenges will also be cited with the help of qualitative research method. The paper will also mention the case study method in the articulation of the findings.

Keywords - Education, Sustainable Development, Environment Degradation, Development



Protection from Cyber Bullying by Artificial Intelligence and Right to Privacy

Ruchika

Mahrishi Arvind University, Jaipur

Key words: Cyber- Bullying, Information Technology, Privacy, Electronic crime, International Law.

Today, the digital era in which once life is totally dependent on internet. Every age group human relies on the internet services; the personal information is totally shared on mass media. As technology is making our life easier and comfort. But there are always two sides of a coin. Same way the technology also having two faces positive and negative. One of the negative aspect of internet is cyber bullying, due to which once right to privacy on internet is violated as this right is our basic human right, right to life under international law and constitution of India. There is no specific law for cyber bullying in India, in Information Technology Act and Indian Criminal laws deals with electronic crimes. The emergence of Information and Communications Technology (ICT) use among the young generation is right platform to connect with the cyber world. Digital technology provides many benefits for compliance of their day to day activities in an effective manner. Cyberspace is providing a place with the positive environment to young adults as well as adolescents for cyber-behaviour which can promote social responsibilities.

The step of cyber-bullying varies from internet harassment to electronic bullying to cyberbullying. Though, many authors have signified different concepts for cyber-bullying and given different preventive approaches and mechanisms. The objective of systemic review reveals two categories; one is cyber-bullying mechanisms and another one is its related mechanisms. Additionally, most of the mechanism had challenges to check the reliability and validity testing and it reveals a need for investigating the validity of most of the existing mechanism and resolve the intangible and

definitional variations related to cyber-bullying. In recent era a new form of technology is introduced that is artificial intelligence. This new software is very much used by every group of society.

Privacy is a basic fundamental right of every individual, Indian constitution under Article 21 provides right to life includes right to privacy. This right is given by the landmark judgments of Apex court of our country. Today privacy on internet is a very big issue, some were in any other means many of our privacy is violated by different social medias. The term privacy is not defined as such in any aspect, but it includes integrity, personal autonomy, informational self-determination, protection from state surveillance, dignity, confidentiality, compelled speech and freedom to dissent or move or think. The concept of privacy is different from every individual, its definition is different in everyone's life and property. Article 12 of the Universal Declaration of Human Rights, 1948 and Article 17 of the International Covenant on Civil and Political Rights (ICCPR), 1966, legally protect persons against "arbitrary interference" with one's privacy, family, home, correspondence, honour and reputation.

Looking the definition of privacy according to changing time in the year 1963 in the case of *Kharak Singh vs State of UP*, the Court examined the power of police surveillance with respect to history and it ruled in favour of the police, saying that the right of privacy is not a guaranteed right under the Constitution. Again in the year of 1997 in the landmark case of *PUCL vs Union of India*, commonly known as telephone tapping cases, the Supreme Court unequivocally held that individuals had a privacy interest in the content of their telephone communications. Privacy is not absolute: The case concerned revealing the HIV status of a patient by a doctor. A division bench held the right to privacy is not absolute. A doctor may disclose a patient's HIV status to the partner.

In the most popular case of *Ram Jethmalani & Others Vs Union of India*, Popularly known as the "Black Money Case", here the Supreme Court held that revealing an individual's bank account details without establishing grounds to accuse them of wrongdoing violates their right to privacy. can't reveal bank details without valid grounds. **RIGHT TO SLEEP IS PART OF RIGHT TO PRIVACY**; The Supreme Court took suo motu cognizance of the crackdown on sleeping anticorruption protesters camping at Ramlila Maidan led by Baba Ramdev. Identifying Right to Sleep as an aspect of the Right to Dignity and Privacy, the court refused to permit "illegitimate intrusion into a person's privacy as right to privacy is implicit in the right to life and liberty".

The Information Technology Act, 2000, also speaks about the privacy of individual on internet. This is the very first law in India on electronic crimes, crimes on internet, mass-media and all. In this Act if any one violates the privacy of any person by sending mail, text message or sharing any one photo or information on social media, punish that person with fine. The Act was amended in 2008 to insert Section 43 A which made the Companies compromising sensitive personal data liable to pay compensation. Exercising its powers under Section 43A of the IT Act, 2000, the Government framed eight rules to protect privacy of an individual. These all relate to seeking permission by a company before accessing privacy data of individuals and fixing liabilities for violation of the same. As the new software artificial intelligence is introducing, every individual is using this technology in positive as well as in negative mean. As AI help in every sector for banking, business, education etc. but many of them using this technology in negative way, that is by using some one's fake identification and misusing their information.

In the landmark judgment of supreme court in the case of Justice K.S. Puttaswamy (Retd) and Another vs Union of India and Others (Writ Petition Civil No. 494 of 2012), Apex court gave views on privacy. The key points are:

1. Life and personal liberty are inalienable rights. These are rights which are inseparable from a dignified human existence. The dignity of the individual, equality between human beings and the quest for liberty are the foundational pillars of the Indian Constitution;
2. Personal choices governing a way of life are intrinsic to privacy.
3. Judicial recognition of the existence of a constitutional right of privacy is not an exercise in the nature of amending the Constitution nor is the Court embarking on a constitutional function of that nature which is entrusted to Parliament;
4. Privacy includes at its core the preservation of personal intimacies, the sanctity of family life, marriage, procreation, the home and sexual orientation. Privacy also connotes a right to be left alone.
5. Technological change has given rise to concerns which were not present seven decades ago and the rapid growth of technology may render obsolescent many notions of the present. Hence the interpretation of the Constitution must be resilient and flexible to allow future generations to adapt its content bearing in mind its basic or essential features;
6. Like other rights which form part of the fundamental freedoms protected by Part III, including the right to life and personal liberty under Article 21, privacy is not an absolute right. A law which encroaches upon privacy will have to withstand the touchstone of permissible restrictions on fundamental rights.
7. The privacy of the home must protect the family, marriage, procreation and sexual orientation which are all important aspects of dignity.

Privacy Laws in Other Countries

United States Constitution does not mention right to privacy explicitly, the Supreme Court has on various instances interpreted various amendments to state that the right does exist. In particular the 1974 Privacy Act was passed with the intention of protecting citizens from any federal agency using their records arbitrarily. Germany remains one of the strictest countries to enforce privacy laws. In the recent past in fact, the privacy law in Germany has caused much discomfort to organisations like Facebook and Google which run on the basis of the freedom of the internet. First brought into place in 1977 as part of the Canadian Human Rights Act, the privacy law in Canada has evolved over time. Initially, the law was introduced as a means of data protection. In 1983, the law was expanded to include a check on how the Government can access and disclose personal information. The last time the privacy law was redefined in 2012 when the Canada Government stated that the Common Law recognised the Right to personal privacy as a ‘tort of intrusion upon seclusion’. European Union, The Data Protection Directive adopted by the European Union in 1995 regulates the processing of personal data within the European Union. Article 8 of the European Convention on Human Rights (ECHR) provides a right to protection of one’s private and family life subject to certain restrictions.

Cyber Bullying and Right to Privacy: The digital and virtual world has taken a toll on the lives of the vast majority of the population across the globe including the children. Even though it has resulted in numerous technological advancements, entertainment and has enhanced the scope of socialising and staying connected with people from different parts of the globe. Technology have both positive and negative aspects in once life, it's on individual how he adopts it as tool of information, connectivity or as an addicted drug in his life. It has a variety of drawbacks and negative aspects which seem to dwindle the affected on individual both physically and mentally. One such adversity is the reality of cyberbullying, which millions of people who extensively use digital platforms and social media are exposed to and main source of this is artificial intelligence.

Meaning of Cyber Bullying

The word “bully” can be traced back to the 1530s which in its simplest sense refers to aggressive interaction between two people – the intimidator and the victim. Some of the researches have stipulated that the competition of survival and inner feelings of egoism adore some of the driving factors for bullying. Though bullying and cyberbullying can take similar roots from the perspective of the intention, they do have major differences too. In broader terms, with the evolution of technology bullying has taken stronger and deeper roots in society. Analyses and studies have been conducted in the field of cyberbullying and traditional bullying and it was observed that the repeated trend in negative action was majorly found in those youngsters and adults who had disturbed family structure and functioning. It was also noticed that the victims were mainly those who can't defend themselves in a strong and opposing manner. In the modern world, where the newfangled and golden agers spend a majority of their time on virtual platforms, social media and discussion forums, cyberbullying has taken a strong stand throughout and it's the need of the hour to reduce and eliminate its presence for a healthy virtual living. This chapter gives insights into the evolution and history of cyberbullying along with detailed descriptions of its trends, limitations and scope of reducing this illicit component.

Digital platforms have often been celebrated for allowing equal opportunities for public self-expression, regardless of one's identity and status. Yet, not everyone is welcome in the cyberspace. The digital arena has become a breeding ground for a range of exclusionary and violent discourses and beliefs, expressed and disseminated in a context of anonymity and impunity. Both women and men can be victims of cyber violence by mean of AI. However, evidence shows that women and girls are highly exposed to it. Not only are they more likely to be targeted by cyber violence, but they can suffer from serious consequences, resulting in physical, sexual, psychological, or economic harm and suffering. Cyber violence against women and girls is often dismissed as an insignificant and virtual phenomenon. However, this crime does not exist in a vacuum: it is an act of gender-based violence that is perpetrated through new technologies, but is deeply rooted in the inequality between women and men that still persists in our societies.

Many different forms of cyber violence against women exist. Many could be seen as online extensions of forms of violence perpetrated in the physical world (such as cyber harassment or

cyber stalking). However, the cyber sphere also leads to different and unique forms of violence (such as non-consensual intimate image abuse or doxing) and can amplify the scale of harm compared to violence perpetrated in the physical world. Cybercrime against women is perpetrated across different cyberspaces, including social media platforms, messaging apps and discussion sites. As the digital environment is constantly evolving, new technologies are bound to give rise to new and diverse manifestations of violence. Even in India many people adding every year in the cybercrimes. There are many examples which we can see on media. By AI also many cyber criminals as getting success in their crime. India has one of the highest number of internet users, more than the total population of many countries in the world. In rural India nearly half of the population have access to digital services despite connectivity boom has happened in the last decade that has impacted the life of even rural populations significantly. With it, especially for children and adolescents who contribute a significant number of users, came new challenges of online child exploitation.

There has been a noticeable rise in cyberbullying in India since the Covid-19 epidemic. Cyberbullying has increased by many folds in India with the swift adaption on the digital technology and emergence of digital communication platforms, particularly with the expansion of online learning, remote working, and social media usage. People had to stay indoors and extensively rely on digital communication networks during the lockdown measures followed after the onset of the pandemic.

Due to the AI the crime like cyber bullying, the privacy of individual is violated a lot. Photos, personal information is shared on internet without one's permission. Due to this many of the victims complain but, India legal system helps very few. The laws in India, Information Technology Act, Indian Penal Code, and many other minor Acts are not that strong in nature to curb this crime totally. Even the Information Technology Act came twenty years back and it needs many amendments. As the e-crime is growing very fast with different forms, same way there is need of new laws to vanish such e-offences. The Constitution of India, under Part-III provides fundamental rights but the new forms of crimes are violating these rights in new forms. Now from July 1st 2024 the new three major laws will be enforced in India, and these new laws Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita and Bharatiya Sakshya Adhiniyam are dealing with e-crimes and punishments for such offences, also our country need strong and separate laws related to AI also. And how the proceeding will be held by the police and courts of India also provided in the above laws. With these news laws our country also needs the strong and technology administrative system to handle the electronic offences.

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उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति का अध्ययन

कुसुम लता टाक, श्रद्धा सिंह चौहान

शिक्षा विभाग, राजस्थान विश्वविद्यालय, जयपुर (राज.)

सारांश:

प्रस्तुत शोध का उद्देश्य उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति का अध्ययन करना है। इस अध्ययन हेतु सर्वेक्षण विधि का प्रयोग किया गया है। इस अध्ययन के लिए 360 शिक्षकों का चयन न्यादर्श हेतु किया गया। शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति जानने हेतु रविंदर कौर, सरबजीत कौर (रानू) एवं सरबजीत कौर (बरार) द्वारा निर्मित “ अध्यापक व्यावसायिक प्रतिबद्धता मापनी” का प्रयोग किया गया। उपकरण से प्राप्त आंकड़ों का विश्लेषण अनोवा, मध्यमान, प्रमाप विचलन एवं टी-परीक्षण के द्वारा किया गया। अध्ययन के निष्कर्ष में यह पाया कि उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में सार्थक अंतर है। उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में सार्थक अंतर है।

मुख्यशब्द : व्यावसायिक प्रतिबद्धता, अभिवृत्ति, उच्च माध्यमिक स्तर।

प्रस्तावना:

शिक्षा का प्रमुख कार्य व्यक्ति का सर्वांगीण विकास करना होता है। सर्वांगीण विकास का अर्थ व्यक्ति के भौतिक, बौद्धिक, सामाजिक, सांस्कृतिक, नैतिक एवं आध्यात्मिक विकास से होता है। शिक्षक को शिक्षा प्रणाली की रीढ़ की हड्डी माना जाता है। शिक्षा व्यक्ति के सर्वांगीण विकास में महत्वपूर्ण भूमिका निभाती है। शिक्षा प्रणाली में प्रभावी ढंग से सुधार एवं उन्नयन के लिए शिक्षक का केवल अपने विषय का ज्ञाता होना ही आवश्यक नहीं होता है बल्कि शिक्षक की अपने व्यवसाय के प्रति प्रतिबद्धता, शैक्षिक नवाचारों का ज्ञान होने के साथ-साथ अन्य शैक्षिक योग्यताओं का होना भी आवश्यक है क्योंकि शिक्षक जितना अधिक अपने शिक्षण नवाचारों के प्रति प्रतिबद्ध होगा व नवाचारों के साथ शिक्षण कार्य करवायेगा तो इसका सीधा प्रभाव विद्यार्थियों की विषय में दक्षता तथा उनके भविष्य पर पड़ेगा। शिक्षा के गुणात्मक उन्नयन में शिक्षकों की प्रतिबद्धता की महत्वपूर्ण भूमिका होती है तथा एक प्रतिबद्ध शिक्षक ही छात्रों के लिए आदर्श एवं प्रेरणादायी स्रोत सिद्ध हो सकता है। व्यवसाय के प्रति पूर्ण समर्पण भावना एवं अपनी सम्पूर्ण ऊर्जा को व्यवसाय में समर्पित कर देने की तत्परता ही व्यवसायिक प्रतिबद्धता कहलाती है। प्राचीन काल में यह प्रतिबद्धता शिक्षकों में विद्यमान थी। शिक्षक अपने कार्य के प्रति पूर्ण रूप से

समर्पित थे। वे शिक्षण कार्य को एक व्यवसाय के रूप में ना अपनाकर समाज सेवा के रूप में देखते थे छात्र अपने गुरु के बताये हुये मार्ग पर चलते थे। परन्तु वर्तमान में हमारे देश के शिक्षकों की प्रतिबद्धता में दिन प्रतिदिन कमी आती जा रही है। शिक्षक केवल कक्षागत परिस्थितियों में ही अपने कर्तव्यों की औपचारिकताओं को पूरी करना अपना फर्ज समझते हैं। जबकि शिक्षक पर कक्षा में तथा कक्षा के बाहर दोनों ही परिस्थितियों में छात्रों के सर्वांगीण विकास की नैतिक जिम्मेदारी होती है।

शिक्षक की प्रतिबद्धता शिक्षा के समस्त पहलुओं को प्रभावित करती है अर्थात् यदि शिक्षक अपने व्यवसाय के प्रति प्रतिबद्ध होंगे तो शिक्षा की गुणवत्ता स्वयं निर्मित हो जायेगी। अतः शिक्षकों को व्यावसायिक प्रतिबद्धता स्थापित करनी होगी। परिवर्तन सृष्टि का शाश्वत नियम है परिवर्तन से सृष्टि में नवीनता आती है परिवर्तन प्रकृति तक ही सीमित नहीं है समाज में भी प्रतिक्षण परिवर्तन हो रहा है पुरानी मान्यताओं का स्थान नवीन मान्यतायें ले रही है जहां परिवर्तन नहीं होता वहां नवीनता व विकास अवरूद्ध हो जाता है।

अध्ययन का औचित्य: वर्तमान शिक्षा का स्वरूप अत्यधिक विकसित हो गया है। शिक्षा के क्षेत्र में नित नई तकनीकों का समावेश हो रहा है। इसके अनुसार शिक्षकों का सक्रिय व कार्यकुशल होना वर्तमान शिक्षा की मांग है। शिक्षकों के व्यवहार व कार्यकुशलता का प्रभाव विद्यार्थियों पर पड़ता है। शिक्षक जैसा अपने व्यवसाय के प्रति प्रतिबद्ध होगा व अपने शिक्षण कार्यों में नवाचारों का उपयोग करेगा वैसा ही प्रभाव वह विद्यार्थियों पर डालेगा। परन्तु वास्तविकता में शिक्षकों में इस आधुनिकता के अनुकूल परिवर्तन नहीं हुये हैं। उच्च माध्यमिक स्तर पर विभिन्न संकाय (कला, विज्ञान व वाणिज्य) में कार्यरत शिक्षकों की विद्यार्थियों के शिक्षण कार्यों में अहम् भूमिका होती है। क्योंकि यह शिक्षा ही विद्यार्थियों की उच्च शिक्षा व भविष्य का आधार बनती है। अतः यहां यह प्रश्न उठता है कि क्या उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में किसी प्रकार का अन्तर पाया जाता है? क्या उच्च माध्यमिक स्तर के सरकारी व गैर सरकारी विद्यालयों के विभिन्न संकाय के शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई अन्तर पाया जाता है? इन प्रश्नों के उत्तर की प्राप्ति हेतु शोधार्थी ने इस विषय पर अध्ययन किया जाना आवश्यक समझा।

अध्ययन के उद्देश्य:

- 1 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति का अध्ययन करना।
- 2 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति का अध्ययन करना।

अध्ययन की परिकल्पनाएँ:

- 1 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई सार्थक अंतर नहीं पाया जाता है।
- 2 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई सार्थक अंतर नहीं पाया जाता है।

शोध अभिकल्प: प्रस्तुत अध्ययन में सर्वेक्षण विधि का प्रयोग किया गया है। जयपुर जिले के उच्च माध्यमिक स्तर के 360 शिक्षकों का चयन न्यादर्श हेतु किया गया। शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति जानने हेतु रविंदर कौर, सरबजीत कौर (रानू) एवं सरबजीत कौर (बरार) द्वारा निर्मित “ अध्यापक व्यावसायिक प्रतिबद्धता मापनी” का प्रयोग किया गया। उपकरण से प्राप्त आंकड़ों का विश्लेषण अनोवा, मध्यमान, प्रमाप विचलन एवं टी-परीक्षण के द्वारा किया गया।

आंकड़ों का विश्लेषण

परिकल्पना 1 – उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई सार्थक अंतर नहीं पाया जाता है।

तालिका : 1

Source of Variation	SS	df	MS	F-Value	P-value
Between Groups	5519.047	2	2759.523	7.37	0.0007
Within Groups	111100.7	357	374.0766		

व्याख्या एवं विश्लेषण: उक्त तालिका में उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में सार्थक अंतर को दर्शाया गया है। सारणी में प्रदर्शित प्रदत्तों से यह स्पष्ट है कि कला संकाय के शिक्षकों का मध्यमान 183.56, वाणिज्य संकाय के शिक्षकों का मध्यमान 194.47 एवं विज्ञान संकाय के शिक्षकों का मध्यमान 205.87 है। एफ अनुपात की गणना करने पर एफ-मान 7.37 तथा पी-मान 0.0007 प्राप्त हुआ। स्वतंत्रता के अंश पर 0.05 स्तर पर सारणी में सार्थकता मान 3.09 दिया गया है। गणना द्वारा प्राप्त एफ-अनुपात का मान 7.37 है, जो कि 0.05 सार्थकता स्तर के सारणी मान से अधिक है। इस आधार पर निर्धारित शून्य परिकल्पना अस्वीकृत की जाती है।

अतः स्पष्ट है कि उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में अंतर है।

परिकल्पना 2 : उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई सार्थक अंतर नहीं पाया जाता है।

तालिका : 2

संकाय	समूह	मध्यमान	प्रमाप विचलन	टी-परीक्षण	परिणाम
कला संकाय	ग्रामीण शिक्षक	181.32	21.07	0.93	स्वीकृत
	शहरी शिक्षक	185.26	25.14		
वाणिज्य संकाय	ग्रामीण शिक्षक	192.62	25.85	0.11	स्वीकृत
	शहरी शिक्षक	193.12	25.42		
विज्ञान संकाय	ग्रामीण शिक्षक	201.26	19.29	2.46	अस्वीकृत
	शहरी शिक्षक	209.13	15.61		

$$df = (N_1 + N_2 - 2), (60 + 60 - 2) = 118$$

0.05 सार्थकता स्तर पर सारणी मान – 1.97

व्याख्या एवं विश्लेषण:

उक्त तालिका के अनुसार कला संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति के प्राप्तांकों का मध्यमान क्रमशः 181.32 व 185.26 है, तथा प्रमाप विचलन क्रमशः 21.07 और 25.14 है। मध्यमान एवं प्रमाप विचलन के द्वारा टी-परीक्षण की गणना करने के उपरांत टी-मूल्य 0.93 प्राप्त हुआ है। गणना द्वारा प्राप्त टी का मान 0.93 है, जो कि 0.05 सार्थकता स्तर के सारणी मान से कम है।

वाणिज्य संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति के प्राप्तांकों का मध्यमान क्रमशः 192.62 व 193.12 है, तथा प्रमाप विचलन क्रमशः 25.85 और 25.42 है। मध्यमान एवं प्रमाप विचलन के द्वारा टी-परीक्षण की गणना करने के उपरांत टी-मूल्य 0.11 प्राप्त हुआ है। गणना द्वारा प्राप्त टी का मान 0.11 है, जो कि 0.05 सार्थकता स्तर के सारणी मान से कम है।

विज्ञान संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति के प्राप्तांकों का मध्यमान क्रमशः 201.26 व 209.13 है, तथा प्रमाप विचलन क्रमशः 19.29 और 15.61 है। मध्यमान एवं प्रमाप विचलन के द्वारा टी-परीक्षण की गणना करने के उपरांत टी-मूल्य 2.46 है, जो कि 0.05 सार्थकता स्तर के सारणी मान से अधिक है।

46 प्राप्त हुआ है। गणना द्वारा प्राप्त टी का मान 2.46 है, जो कि 0.05 सार्थकता स्तर के सारणी मान से अधिक है।

इस आधार पर निर्धारित शून्य परिकल्पना अस्वीकृत की जाती है। अतः स्पष्ट है कि उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में कोई सार्थक अंतर है।

निष्कर्ष :

- 1 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में सार्थक अंतर पाया गया।
- 2 उच्च माध्यमिक स्तर पर विभिन्न संकाय में कार्यरत ग्रामीण एवं शहरी शिक्षकों की व्यावसायिक प्रतिबद्धता के प्रति अभिवृत्ति में सार्थक अंतर पाया गया।

सुझाव:

- शिक्षकों की व्यावसायिक प्रतिबद्धता बढ़ाने में विद्यालय की भूमिका कई तरह से हो सकती है। विद्यालय, शिक्षकों को व्यावसायिक विकास के लिए अवसर देकर और उनका समर्थन करके उनकी प्रतिबद्धता बढ़ा सकता है।
- विद्यालय में व्यावसायिक विकास के लिए प्रेरणा दी जानी चाहिए।
- विद्यालय-आधारित व्यावसायिक विकास प्रयासों का आयोजन करना चाहिए।
- शिक्षकों को तकनीकी प्रशिक्षण दिया जाना चाहिए।
- शिक्षकों में कक्षा प्रबंधन के लिए रणनीतियां विकसित करना चाहिए।
- शिक्षकों के लिए सहयोगात्मक अधिगम प्रक्रियाओं का आयोजन करना चाहिए।
- शिक्षकों को अपने अनुभवों को साझा करने के लिए प्रोत्साहित करना चाहिए।

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उच्च माध्यमिक स्तर पर ऑनलाइन शिक्षण की संभावनाओं का संकायों के संदर्भ में अध्ययन

पूनम व्यास, ग्रीष्मा शुक्ला
जयपुर नेशनल यूनिवर्सिटी, जयपुर (राज)

सारांश:

बदलते परिवेश में तकनीकी में भी काफी परिवर्तन हुए हैं और इनकी उपयोगिता भी बढ़ी है। तकनीकी के वजह से शिक्षा लेने की पद्धति में भी बहुत से परिवर्तन देखने को मिले हैं। आज ऑनलाइन शिक्षा में उपयोग होने वाली शिक्षण संबंधित सामग्री, तकनीकी के माध्यम से एक स्थान से दूसरे स्थान पर भेजी जा सकती है। विद्यार्थी लगातार अपने शिक्षकों से ऑनलाइन कक्षा से पढ़ने के नए तरीकों को सीखते हैं और पढ़ने में भी रूचि रखते हैं। प्रस्तुत शोध का उद्देश्य उच्च माध्यमिक स्तर पर विभिन्न संकायों में ऑनलाइन शिक्षण की संभावनाओं को जानना है। इस अध्ययन हेतु सर्वेक्षण विधि का प्रयोग किया गया है। तथा ऑनलाइन शिक्षण की संभावनाओं का पता लगाने हेतु स्वर्ण निर्मित उपकरण का निर्माण किया गया है। निष्कर्ष में पाया गया कि पुरुष व महिला शिक्षकों को शिक्षण विधि व शिक्षण सामग्री संबंधी समान संभावनाएं परिलक्षित हो रही है।

मुख्य शब्द- ऑनलाइन शिक्षण, तकनीकी, डिजिटल

प्रस्तावना : शिक्षा वह जीवन ज्योति है जो मानव जीवन को अज्ञान रूपी अंधकार से ज्ञान रूपी प्रकाश की ओर ले जाती है। शिक्षा हम किसी भी माध्यम के द्वारा ग्रहण कर सकते हैं, चाहे वह पारंपरिक हो या ऑनलाइन। पारंपरिक शिक्षा प्रणाली में विद्यार्थी गुरुकुल या विद्यालय में जाते हैं और उनके शिक्षक के सामने बैठकर उनका ज्ञान प्राप्त करते हैं, लेकिन ऑनलाइन शिक्षा प्रणाली में इसे शिक्षा का नवीनतम रूप माना जाता है। इसमें विद्यार्थी अपने शिक्षक से इंटरनेट सुविधा का उपयोग करते हुए लैपटॉप, कंप्यूटर या सेलफोन के माध्यम से मिलते हैं और उनसे ज्ञान प्राप्त करते हैं।

इस प्रकार आधुनिक युग तकनीकी युग है, जिसमें शिक्षा में तकनीकी का उपयोग शिक्षा की गुणवत्ता और रचनात्मकता को प्रभावी बना रहा है। आज के समय में शिक्षा के क्षेत्र में पावर पॉइंट प्रस्तुतीकरण और वेब-संवाद की महत्वपूर्ण भूमिका है, जो ऑनलाइन शिक्षा को और भी महत्वपूर्ण बना रहा है। वर्तमान समय में वैश्विक महामारी

के कारण, ऑनलाइन शिक्षा को हर क्षेत्र में बढ़ावा मिल रहा है। इसके लिए Zoom, WebX, Google Hangout, Microsoft Teams जैसे एप्लिकेशन का प्रयोग किया जा रहा है।

शोध का औचित्य : वर्तमान में ऑनलाइन शिक्षण तेजी से प्रचलित हो गया है, विशेष रूप से COVID-19 महामारी के मद्देनजर, जिसने दुनिया भर के शैक्षणिक संस्थानों में डिजिटल शिक्षण प्लेटफार्मों को अपनाने में तेजी ला दी है। हालाँकि यह परिवर्तन शिक्षा की निरंतरता के लिए आवश्यक है, इसने विशेष रूप से उच्च माध्यमिक स्तर पर असंख्य चुनौतियों और अवसरों को भी सामने लाया है। शैक्षिक समानता, शैक्षणिक अनुकूलन, तकनीकी अवसंरचना, शिक्षक प्रशिक्षण और सहायता, विद्यार्थी जुड़ाव और प्रेरणा, आकलन और मूल्यांकन व संभावनाओं की खोज आदि मुद्दों पर व्यापक रूप से शोध करना अनिवार्य है। उच्च माध्यमिक स्तर पर ऑनलाइन शिक्षण से जुड़ी संभावनाओं पर आधारित यह शोध न केवल वर्तमान समय की माँग है, बल्कि अत्यंत उपयोगी भी है। इस अध्ययन का उद्देश्य ऑनलाइन शिक्षा में मौजूद विविध पहलुओं को समझकर, नीतियों के निर्माण में सहायता करना, शैक्षणिक संस्थानों की कार्यप्रणालियों को दिशा देना और अंततः डिजिटल युग में उच्च माध्यमिक शिक्षा की गुणवत्ता तथा समावेशिता को बढ़ावा देना है।

शोध के उद्देश्य:

प्रस्तुत शोध अध्ययन के निम्नलिखित उद्देश्य निर्धारित किए गए हैं-

1. उच्च माध्यमिक स्तर में अध्यापनरत शिक्षकों के समक्ष ऑनलाइन शिक्षण की संभावनाओं का संकाय (कला, विज्ञान, वाणिज्य) संदर्भ में अध्ययन करना –

शोध प्रश्न : उच्च माध्यमिक स्तर के शिक्षकों के समक्ष ऑनलाइन शिक्षण की संभावनाओं में संकाय के आधार पर क्या भिन्नताएँ पाई जाती हैं?

शोध अभिकल्प: प्रस्तुत अध्ययन में सर्वेक्षण विधि का प्रयोग किया गया है। जयपुर जिले के उच्च माध्यमिक स्तर के 20 विद्यालयों (राजकीय व निजी) का चयन न्यादर्श हेतु किया गया। ऑनलाइन शिक्षण की संभावनाओं को जानने हेतु स्व निर्मित उपकरण का प्रयोग किया गया है। उपकरण से प्राप्त आंकड़ों का विश्लेषण प्रतिशत विधि के द्वारा किया गया।

आंकड़ों का विश्लेषण :

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की संभावनाएँ

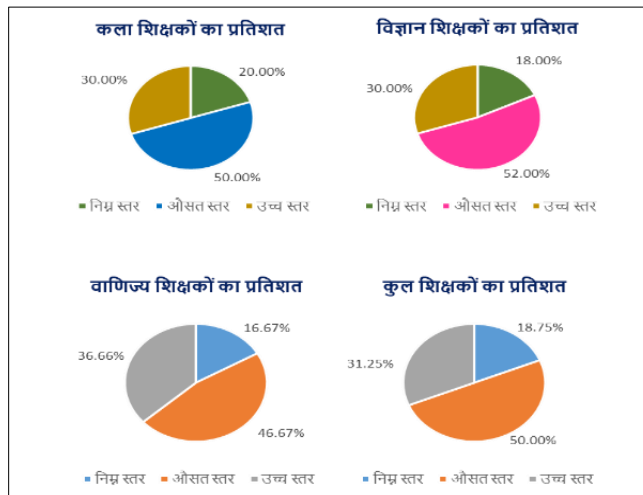
प्रस्तुत शोध में शिक्षकों के अनुसार ऑनलाइन शिक्षण की संभावनाओं को निम्न क्षेत्रों में विभक्त कर विश्लेषण किया गया ये संभावनाएँ क्षेत्र निम्न थे-

- (a) शिक्षण विधि
- (b) विद्यार्थियों का विकास
- (c) शिक्षण सामग्री और संसाधन

तालिका 4.1.2(a)

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की शिक्षण विधि संबंधी संभावनाएँ

संकाय	निम्न स्तर	औसत स्तर	उच्च स्तर	कुल
कला	16 20%	40 50%	24 30%	80 100%
विज्ञान	9 18%	26 52%	15 30%	50 100%
वाणिज्य	5 16.67%	14 46.67%	11 36.66%	30 100%
कुल शिक्षक	30 18.75%	80 50%	50 31.25%	160 100%

**आरेख 4.1.2(a)**

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की शिक्षण विधि संबंधी संभावनाएँ

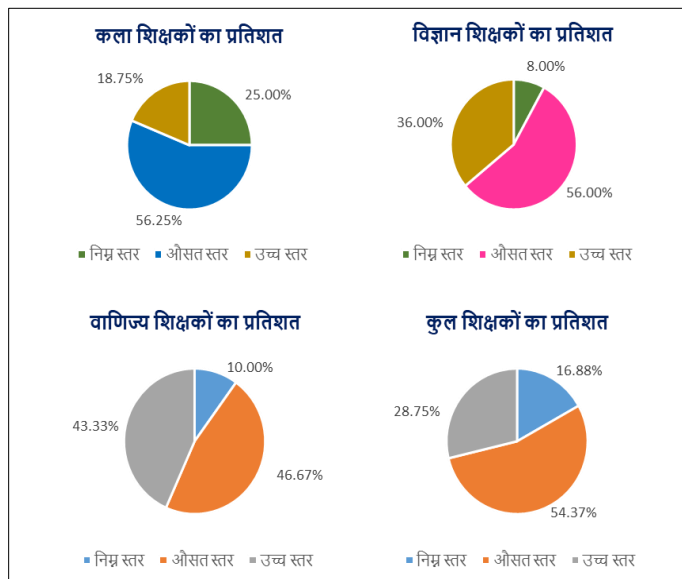
तालिका संख्या 4.1.2(a) में शिक्षकों के अनुसार ऑनलाइन शिक्षण की शिक्षण विधि संबंधी संभावनाएँ से संबंधित प्रदत्तों का विश्लेषण किया गया है। तालिका देखने से स्पष्ट होता है कि कला संकाय के शिक्षकों में (50%) और विज्ञान के शिक्षकों में (52%) वाणिज्य शिक्षकों में (46.67%) शिक्षकों के अनुसार ऑनलाइन शिक्षा के क्षेत्र में औसत स्तर की संभावनाएँ हैं। दूसरी ओर निम्न स्तर की संभावनाओं के संदर्भ में कला संकाय के शिक्षकों की संख्या (16%) व विज्ञान संकाय के शिक्षकों (9%) की तुलना में वाणिज्य शिक्षकों की संख्या (5%) कम है अतः विज्ञान व वाणिज्य संकाय की तुलना में कला संकाय में भविष्य में ऑनलाइन शिक्षा के क्षेत्र में शिक्षण विधि संबंधी निम्न स्तर की संभावनाएँ अधिक हैं। उच्च स्तर की संभावनाओं के संदर्भ में वाणिज्य संकाय के शिक्षकों की (36.66%) कला

संकाय के शिक्षकों की संख्या (30%) व विज्ञान संकाय के शिक्षकों की संख्या (30%) से अधिक परिलक्षित हो रही है जिसका तात्पर्य है कि वाणिज्य संकाय में कल वह विज्ञान संकाय की तुलना में शिक्षण विधियों संबंधी अधिक संभावनाएँ हैं। तुलनात्मक रूप से देखा जा सकता है कि भावी समय में कला विज्ञान व वाणिज्य संकाय में ऑनलाइन शिक्षा के क्षेत्र में शिक्षण विधियाँ संबंधी लगभग समान संभावनाएँ परिलक्षित हो रही है। अतः कहा जा सकता है कि कला व विज्ञान संकाय में सम्मान रूप से शिक्षण विधियाँ संबंधी उच्च स्तर की संभावनाएँ हैं तथा वाणिज्य संकाय में कान की तुलना में शिक्षण विधियाँ संबंधी उच्च स्तर की संभावनाएँ अधिक है। इसका एक कारण वाणिज्य संख्या में शिक्षण विधि व नवाचार का अधिक प्रयोग हो सकता है।

तालिका 4.1.2(a)

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की विद्यार्थी विकास संबंधी संभावनाएँ

संकाय	निम्न स्तर	औसत स्तर	उच्च स्तर	कुल
कला	20 25%	45 56.25%	15 18.75%	80 100%
विज्ञान	4 8%	28 56%	18 36%	50 100%
वाणिज्य	3 10%	14 46.67%	13 43.33%	30 100%
कुल शिक्षक	27 16.88%	87 54.37%	46 28.75%	160 100%



आरेख 4.1.2(a)

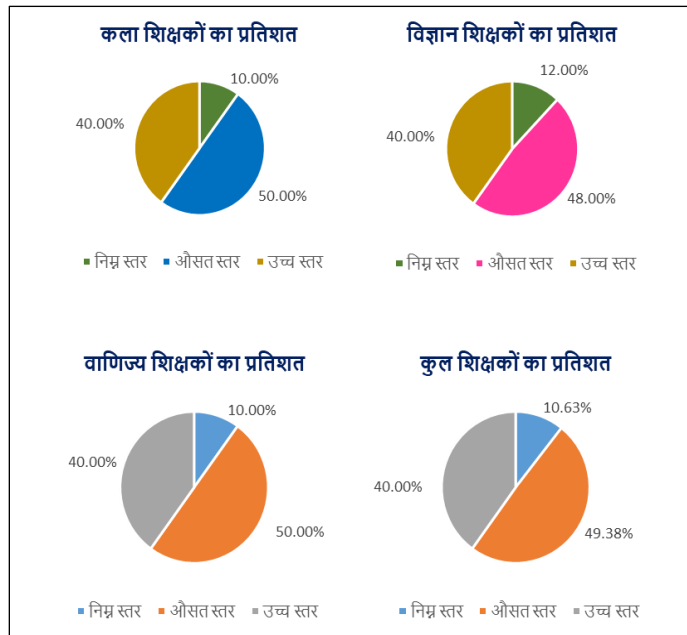
संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की विद्यार्थी विकास संबंधी संभावनाएँ

तालिका संख्या 4.1.2(a) में शिक्षकों के अनुसार ऑनलाइन शिक्षण की विद्यार्थी विकास संबंधी संभावनाएँ से संबंधित प्रदत्तों का विश्लेषण किया गया है। तालिका देखने से स्पष्ट होता है कि कला संकाय के शिक्षकों में (56.25%), विज्ञान संकाय के शिक्षकों में (56%) व वाणिज्य संकाय के शिक्षकों में (46.67%) शिक्षकों के अनुसार ऑनलाइन शिक्षा के क्षेत्र में औसत स्तर की संभावनाएँ हैं। दूसरी ओर निम्न स्तर की संभावनाओं के संदर्भ में विज्ञान संकाय के शिक्षकों की संख्या (8%) कला संकाय के शिक्षकों की संख्या (25%) वह वाणिज्य संकाय के शिक्षकों की संख्या (10%) की तुलना में कम है जो यह दर्शाता है कि भविष्य में ऑनलाइन शिक्षा के क्षेत्र में कला व वाणिज्य संकाय की अपेक्षा विज्ञान संकाय में विद्यार्थी विकास संबंधी निम्न स्तर की संभावनाएँ अधिक हैं। उच्च स्तर की संभावनाओं के संदर्भ में वाणिज्य संकाय के शिक्षकों की संख्या (43.33) कला संकाय के शिक्षकों की संख्या 18.75% व विज्ञान संकाय के शिक्षकों की संख्या 36% की अपेक्षा अधिक परिलक्षित हो रही है जिसका तात्पर्य है कि कला व विज्ञान संकायों की अपेक्षा वाणिज्य संकाय में विद्यार्थी विकास संबंधी उच्च स्तर की संभावनाएँ अधिक हैं।

तालिका 4.1.2(a)

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की शिक्षण सामग्री और संसाधन संबंधी संभावनाएँ

संकाय	निम्न स्तर	औसत स्तर	उच्च स्तर	कुल
कला	8 10%	40 50%	32 40%	80 100%
विज्ञान	6 12%	24 48%	20 40%	50 100%
वाणिज्य	3 10%	15 50%	12 40%	30 100%
कुल शिक्षक	17 10.63%	79 49.38%	64 40%	160 100%



आरेख 4.1.2(a)

संकाय के आधार पर शिक्षकों के अनुसार ऑनलाइन शिक्षण की शिक्षण सामग्री और संसाधन संबंधी संभावनाएँ

तालिका संख्या 4.1.2(a) में शिक्षकों के अनुसार ऑनलाइन शिक्षण कि कला संकाय के शिक्षकों में (50%) विज्ञान संकाय के शिक्षकों में (48%) तथा वाणिज्य संकाय के शिक्षकों में (50%) शिक्षकों के अनुसार ऑनलाइन शिक्षा के क्षेत्र में औसत स्तर की संभावनाएँ हैं। दूसरी ओर निम्न स्तर की संभावनाओं के संदर्भ में कला संकाय के शिक्षकों की संख्या (10%) वाणिज्य संकाय के शिक्षकों (10%) विज्ञान संकाय (12%) की तुलना में कम है जो यह दर्शाता है कि भविष्य में ऑनलाइन शिक्षा के क्षेत्र में कल वह वाणिज्य संकाय के शिक्षकों की अपेक्षा विज्ञान संकाय के शिक्षकों को शिक्षण सामग्री और संसाधन संबंधी निम्न स्तर की संभावनाएँ परिलक्षित हो रही हैं। उच्च स्तर की संभावनाओं के संदर्भ में कल के शिक्षकों की संख्या 40% व विज्ञान के शिक्षकों की संख्या 40% व वाणिज्य शिक्षकों की संख्या 40% है जिसका तात्पर्य है कि तीनों संख्याओं कला विज्ञान व वाणिज्य में ऑनलाइन शिक्षा के क्षेत्र में शिक्षण सामग्री और संसाधन संबंधी उच्च स्तर की संभावनाएँ परिलक्षित हो रही है। जो निश्चित ही भविष्य में शिक्षण - अधिगम प्रक्रिया में प्रभावशाली परिवर्तन ला देगा।

निष्कर्ष: उपर्युक्त शोध द्वारा निष्कर्ष में पाया गया कि वाणिज्य संकाय में विज्ञान की तुलना में शिक्षण विधियों संबंधी उच्च स्तर की संभावनाएँ अधिक है। इसका एक कारण वाणिज्य संकाय में शिक्षण विधि व नवाचार का अधिक प्रयोग हो सकता है। तथा कला व विज्ञान संकायों की अपेक्षा वाणिज्य संकाय में विद्यार्थी विकास संबंधी उच्च स्तर की संभावनाएँ अधिक है। ऑनलाइन शिक्षा के क्षेत्र में तीनों संकायों (कला विज्ञान व वाणिज्य) में शिक्षण सामग्री और संसाधन संबंधी उच्च स्तर की संभावनाएँ परिलक्षित हो रही है। जो निश्चित ही भविष्य में शिक्षण - अधिगम प्रक्रिया में प्रभावशाली परिवर्तन ला देगा।

सुझाव:

- यह शोध केवल जयपुर जिले तक सीमित था। भविष्य के अध्ययनों का विभिन्न जिलों और राज्यों में से विभिन्न सांस्कृतिक और आर्थिक परिस्थितियों में ऑनलाइन शिक्षा के प्रभाव को बेहतर ढंग से समझा जा सकेगा।
- यह शोध केवल राजकीय और निजी उच्च माध्यमिक विद्यालयों से संबंधित था। अन्य प्रकार के विद्यालयों जैसे मॉडल स्कूल आवासीय विद्यालय और विशेष शिक्षा संस्थानों में शिक्षा के विभिन्न स्वरूपों में ऑनलाइन शिक्षण की चुनौतियों और अवसरों को समझना संभव होगा।
- प्रस्तुत में ग्रामीण व शहरी क्षेत्रों को ध्यान में रखकर शोध कार्य नहीं किया गया है। आगे के शोध में ग्रामीण और शहरी क्षेत्र में ऑनलाइन शिक्षण से संबंधित समस्याओं चुनौतियों व संभावनाओं का अध्ययन करना संभव होगा।
- प्रस्तुत शोध में मानसिक स्वास्थ्य से जुड़ी चुनौतियों का गहन अध्ययन नहीं किया गया है। इन समस्याओं से जुड़ी चुनौतियों का गहन अध्ययन करना संभव हो सकेगा।
- वर्तमान अध्ययन में तात्कालिक प्रभावों पर ध्यान केंद्रित किया गया है आगामी शोध में ऑनलाइन शिक्षा के दीर्घकालिक प्रभावों का मूल्यांकन किया जा सकेगा।

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शिक्षण-प्रशिक्षणार्थियों की शैक्षिक नवाचारों की उपयोगिताओं के प्रति अभिवृत्ति का अध्ययन एवं वैश्वीकरण की दुनिया में नवीन शिक्षा पद्धति और अंतरराष्ट्रीय सहयोग के माध्यम से शैक्षिक प्रथाओं को आगे बढ़ाना

विनीता शर्मा

मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर

सारांश :

शिक्षा किसी भी समाज की आधारशिला है, और इसके माध्यम से ज्ञान, कौशल, और मूल्यों का स्थानांतरण होता है। 21वीं सदी में शिक्षा के क्षेत्र में नवाचारों की भूमिका अत्यधिक महत्वपूर्ण हो गई है। शिक्षा को केवल पठन-पाठन तक सीमित न रखते हुए, इसे आधुनिक तकनीकी युग और वैश्विक दृष्टिकोण के साथ जोड़ा गया है। यह अध्ययन शिक्षण-प्रशिक्षणार्थियों की शैक्षिक नवाचारों के प्रति अभिवृत्ति का मूल्यांकन करता है, और वैश्वीकरण के प्रभाव के तहत नवीन शिक्षा पद्धतियों और अंतरराष्ट्रीय सहयोग से शैक्षिक प्रथाओं को आगे बढ़ाने पर केंद्रित है।

शैक्षिक नवाचारों की आवश्यकता: शैक्षिक नवाचारों का मुख्य उद्देश्य पारंपरिक शिक्षा प्रणाली में सुधार करना है ताकि छात्रों की सृजनात्मकता, नवाचार क्षमता और वैश्विक प्रतिस्पर्धा के लिए तैयार किया जा सके। तकनीकी प्रगति, जैसे ई-लर्निंग प्लेटफॉर्म, आर्टिफिशियल इंटेलिजेंस, और आभासी कक्षाएं, शिक्षकों और छात्रों को एक नवीन अनुभव प्रदान कर रही हैं। इन नवाचारों की उपयोगिता शिक्षण-प्रशिक्षणार्थियों के दृष्टिकोण से महत्वपूर्ण है क्योंकि ये उन्हें नई शैक्षिक प्रथाओं के लिए सक्षम बनाते हैं।

अध्ययन का उद्देश्य: इस अध्ययन का उद्देश्य शिक्षण-प्रशिक्षणार्थियों की नवाचारों के प्रति मानसिकता, उनके प्रभाव, और इन नवाचारों के व्यावहारिक उपयोग की जांच करना है। इसके साथ ही, वैश्वीकरण के दौर में अंतरराष्ट्रीय सहयोग से उभरती शैक्षिक पद्धतियों को बढ़ावा देने के तरीकों पर भी विचार किया गया है।

वैश्वीकरण और शिक्षा का परिप्रेक्ष्य: वैश्वीकरण ने शिक्षा के क्षेत्र में नए अवसर प्रदान किए हैं। यह सीमाओं को पार कर विभिन्न देशों के शैक्षिक प्रथाओं और विचारों को साझा करने का मंच बना है। उदाहरणस्वरूप, विकसित देशों में अपनाई जाने वाली नवीनतम शिक्षण पद्धतियां, जैसे प्रॉब्लम-बेस्ड लर्निंग, को विकासशील देशों में भी लागू किया जा सकता है।

अंतरराष्ट्रीय सहयोग की भूमिका: शैक्षिक नवाचारों के प्रसार में अंतरराष्ट्रीय सहयोग एक महत्वपूर्ण भूमिका निभाता है। संयुक्त अनुसंधान परियोजनाएं, छात्र एवं शिक्षक आदान-प्रदान कार्यक्रम, और ऑनलाइन अंतरराष्ट्रीय सम्मेलनों के माध्यम से शिक्षकों और छात्रों को वैश्विक स्तर पर सोचने और सीखने का अवसर मिलता है। यह न केवल शैक्षिक गुणवत्ता में सुधार करता है, बल्कि विभिन्न सांस्कृतिक दृष्टिकोणों को समझने में भी सहायता करता है।

शिक्षण-प्रशिक्षणार्थियों की अभिवृत्ति का अध्ययन : शिक्षण-प्रशिक्षणार्थी शिक्षा प्रणाली के प्रमुख घटक हैं। उनकी मानसिकता और नवाचारों के प्रति सकारात्मक दृष्टिकोण शैक्षिक प्रथाओं के सफल कार्यान्वयन में सहायक होते हैं। इस संदर्भ में, यह अध्ययन उनकी प्राथमिकताओं, चुनौतियों और इन नवाचारों के प्रभाव को समझने पर केंद्रित है।

शैक्षिक प्रथाओं को आगे बढ़ाने की चुनौतियां: शैक्षिक नवाचारों और वैश्वीकरण के बावजूद, कई बाधाएं हैं जो इन नवाचारों को प्रभावी रूप से लागू करने में रुकावट पैदा करती हैं। इनमें वित्तीय संसाधनों की कमी, प्रशिक्षित शिक्षकों की अनुपलब्धता, और सांस्कृतिक भिन्नताएं शामिल हैं। इन चुनौतियों का समाधान करने के लिए नीति-निर्माण और प्रौद्योगिकी का उपयोग आवश्यक है।

भविष्य की दिशा : भविष्य की शिक्षा प्रणाली को समावेशी, तकनीकी-सक्षम, और वैश्विक दृष्टिकोण वाली बनाना होगा। इसके लिए शिक्षकों और छात्रों को निरंतर प्रशिक्षण और अपडेटेड तकनीकी ज्ञान प्रदान करना आवश्यक है। साथ ही, विभिन्न देशों की सरकारों और शैक्षिक संगठनों को मिलकर कार्य करना होगा।

निष्कर्ष: इस अध्ययन में यह स्पष्ट होता है कि शैक्षिक नवाचारों और वैश्वीकरण के युग में अंतरराष्ट्रीय सहयोग शिक्षा के क्षेत्र को नई ऊंचाइयों तक ले जा सकता है। शिक्षण-प्रशिक्षणार्थियों की सकारात्मक मानसिकता और शैक्षिक नवाचारों के प्रति रुझान इस प्रक्रिया को गति प्रदान कर सकते हैं। वैश्विक शिक्षा प्रणाली का एकीकृत दृष्टिकोण ही वर्तमान और भविष्य की शैक्षिक चुनौतियों का समाधान है। यह अध्ययन शैक्षिक नवाचारों और वैश्वीकरण के अंतर्गत शिक्षा प्रणाली के विकास में एक दिशा प्रदान करता है, जो न केवल शिक्षकों और छात्रों के लिए उपयोगी है, बल्कि समग्र समाज के विकास में भी सहायक है।

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स्नातक स्तर के विद्यार्थियों में PMKVY कार्यक्रम के प्रति अभिवृत्ति का अध्ययन

तुलसी सैनी, एकता पारीक

बियानी गर्ल्स बी. एड कॉलेज, जयपुर

सारांश: विकसित भारत के निर्माण की दिशा में प्रधानमंत्री कौशल विकास योजना (PMKVY) एक अनूठी पहल है। इस योजना का उद्देश्य युवाओं को सार्थक उद्योग तथा कौशल आधारित प्रशिक्षण प्रदान करना है। वास्तव में भारत की आधी से अधिक आबादी युवा है और लगभग 70 प्रतिशत आबादी ग्रामीण है जहां कौशल प्रशिक्षण का अभाव देखने को मिलता है। यह शोध आलेख इस योजना के प्रभाव एवं महत्व का संक्षिप्त अध्ययन है जिसमें यह जानने का प्रयास किया गया है कि यह योजना युवाओं के कौशल विकास में क्या योगदान कर रहा है।

मुख्य शब्द : कौशल विकास, युवा, रोजगार, प्रशिक्षण, सरकार की भूमिका।

प्रस्तावना : माननीय प्रधानमंत्री जी द्वारा इस योजना की घोषणा 15 जुलाई, 2015 को विश्व युवा कौशल दिवस पर की थी। इस योजना के अंतर्गत ऐसे युवाओं को लाभ मिलेगा जो दसवीं और बारहवीं करके पढ़ाई छोड़ चुके हैं और उनके पास आगे कोई भी रोजगार नहीं है। कुछ युवा गरीबी के कारण या किसी अन्य कारण से पढ़ाई छोड़ देते हैं, ऐसे युवाओं को यह योजना आगे लेकर आएगी ताकि ऐसे युवाओं को ट्रेनिंग दी जाए और उनको रोजगार में मदद की जाए।

ट्रेनिंग के बाद इन युवाओं को सर्टिफिकेट भी दिया जाएगा ताकि आगे रोजगार प्राप्त करने में यह उनकी सहायता करें जिससे सभी युवाओं को आगे बढ़ने का मौका मिलेगा। यही प्रधानमंत्री नरेद्र मोदी जी का लक्ष्य है ताकि हमारा देश आगे बढ़ सके। इस योजना की खास बात यह है कि जो छात्र प्रशिक्षण के दौरान अच्छा प्रदर्शन करेंगे उन्हें नगद इनाम भी दिया जाएगा जिससे वह ओर प्रेरित हो सके। इस योजना के तहत 49 प्रतिशत रोजगार दर में वृद्धि हुई है। इस योजना के तहत आवेदक को ऑनलाइन आवेदन करना है जिसके अंतर्गत वह गुणवत्तापूर्ण प्रशिक्षण प्राप्त कर पाएंगे। वह अपना खुद का बिजनेस खोल सकते हैं जिसके लिए केंद्र सरकार भी मदद करेगी।

प्रधानमंत्री कौशल विकास योजना के उद्देश्य :-

1. इस योजना का लक्ष्य 2020 तक 10 मिलियन युवाओं तक पहुंचना है, जिसका बजट 12000 करोड़ रुपये है।
2. देश के युवाओं में कई ऐसे टैलेंट भी हैं जो कारगर हैं किंतु किसी वजह से लोगों तक नहीं पहुंच पा रहे हैं। उन्हें विकसित करने के लिए सरकार कौशल विकास योजना चला रही है।
3. इस योजना में 2022 तक सभी युवाओं को रोजगार मिलना चाहिए परंतु यह तभी संभव है जब उनको कौशल के अनुसार ट्रेनिंग दी जाएगी। यह ट्रेनिंग उनको नए रोजगार की तरफ ले जाएगी।
4. सरकार इस स्कीम के जरिए कम पढ़े- लिखे या 10 वीं, 12 वीं ड्रॉपआउट (बीच में स्कूल छोड़ने वाले) युवाओं को कौशल विकास योजना के द्वारा प्रशिक्षण दिया जाता है।
इस योजना के लिए कोई फीस नहीं चुकानी पड़ती है बल्कि पुरस्कार राशि करीब ₹8000 सरकार देती है।
5. इस योजना में 3 महीने, 6 महीने और 1 साल के लिए रजिस्ट्रेशन होता है। कोर्स पूरा करने के बाद ही सर्टिफिकेट दिया जाता है। यह सर्टिफिकेट पूरे देश में मान्य होगा। जिससे उन्हें निजी अथवा सरकारी क्षेत्र में नौकरियों प्राप्त हो सकेगी।

इस योजना के तहत प्रशिक्षित होने वाले युवाओं को ट्रेनिंग के लिए सबको इंडस्ट्री में भेजा जाता है जिससे उन्हें एक्सपर्ट लोगों के साथ काम करने का मौका मिलता है। जिसके अंतर्गत उन्हें प्रैक्टिकल नॉलेज दिया जाता है और इसी के तहत वह अच्छी नॉलेज लेकर अच्छे से अच्छा जॉब हासिल कर सकता है।

कार्यप्रणाली : इस शोध में 100 प्रतिनिधि उत्तरदाताओं को सर्वेक्षण या स्व-निर्मित प्रश्नावली के डिजाइन और वितरण के माध्यम से मात्रात्मक डेटा एकत्र किया गया था, जिनमें से प्रत्येक में 30 प्रश्न थे। सांख्यिकीय विधियों का उपयोग करके मात्रात्मक डेटा का विश्लेषण करके, शोधकर्ता ने संख्यात्मक निष्कर्ष तैयार किए जो उत्तरदाताओं के बीच जागरूकता के स्तर की समग्र समझ प्रदान करते हैं।

परिणाम : इस योजना के तहत, युवाओं को उनकी पसंदीदा ट्रेड में प्रशिक्षण दिया जाता है ताकि वे अपने कार्यक्षेत्र में विशेषज्ञता प्राप्त कर सकें। यह प्रशिक्षण पूरी तरह से निशुल्क है, और

प्रशिक्षण पूरा करने के बाद युवाओं को एक प्रमाण पत्र दिया जाता है, जिससे उन्हें रोजगार ढूंढने में सहायता मिलती है।

निष्कर्ष: भारत दुनिया का दूसरा सबसे अधिक आबादी वाला देश है, और इसमें बड़ी संख्या में युवा लोग हैं जिन्हें देश के अन्दर और बाहर दोनों जगह रोजगार के अवसरों की आवश्यकता है। इस परिस्थिति के कारण, व्यक्तियों को एक सफल फर्म की भर्ती और संचालन के लिए उचित प्रशिक्षण की आवश्यकता होती है। इस तरह PMKVY बड़ी संख्या में रोजगार के अवसर में योगदान देगा। इसके साथ ही, देश की अर्थव्यवस्था सही रास्ते पर होगी, जिससे पूरी दुनिया में एक स्थिर अर्थव्यवस्था बनेगी।

सन्दर्भ:

1. Ministry of Skill Development And Entrepreneurship-annual Report 2019
2. PMKVY Guidelines (2016-2020)
3. Special Project Guideline (w.ef.january,2017)

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Education for Sustainable Development

Anupama Goyal

Professor in Botany, Jayoti Vidyapeeth Women's University, Jaipur

Corresponding Email: goyalanupama29@gmail.com

Abstract:

Education is an important tool to achieve sustainability worldwide. This is the only medium that enables people to understand the work and benefit from sustainable development... Sustainable development is a way of growing that takes care of current needs without taking away from what future generations will need. Basic theory behind Sustainable Development is a combination of economic, social and environmental conditions that are shared by all among us. Education for sustainability uses the entire education system to provide students with what they need to do to change our societies in order to achieve a sustainable future, Sustainable development should also include recognizing and respecting the good things and achievements from past generations. Education for Sustainable Development (ESD) is an active idea that shows a new way of learning. This new way of learning tries to balance people's happiness and economic success with traditions and caring for the earth's resources. It focuses on learning before making changes towards a more sustainable future. It also includes teaching about being responsible citizens, promoting peace, ensuring equal chances for everyone, respecting human rights, learning about health, population,

taking care of natural resources, and using resources in a sustainable way. Because of this, education needs to change into a helpful tool that helps students and people around the world understand important issues. ESD uses different subjects together to help people learn for a long time, encourages respect for needs that fit with using nature wisely, and builds awareness of being connected to the world. Education for Sustainable Development is now understood as learning how to make decisions that impact the economy, the environment, and the happiness of people in communities. So ESD helps keep a balance between people and the natural world.

Keywords: Development, Education, Education for Sustainable Development (ESD), People, Society, Environment, Generation, Need, World

Introduction :

Education has received a lot of support around the world for helping development, and it is seen as playing a big role in improving people's lives globally. People all over the world think that the current trends in economic development are not lasting, and they believe that public awareness, education, and training are essential for making society move toward sustainability. People have different ideas about what sustainable development means and whether it is possible. They also have different views on what sustainable societies will look like and how they will function. It is important to note that while we may have a hard time imagining a sustainable world, we are very clear about what is not sustainable in our current societies. We can quickly list many problems like water shortages, inefficient use of energy, increased pollution, overuse of private cars, misuse of human rights, and consumerism. But we should not blame ourselves for not having a clear definition of sustainability.

The aim of sustainable development is to balance economic, environmental, and social needs, ensuring prosperity for both current and future generations.. Sustainable development depends on a long-term, integrated process of building a strong community by working together on economic, environmental, and social issues, as well as avoiding the overuse of natural resources. Sustainable development cannot be managed through technical solutions, political control, or financial means alone. We need to change the way we think and act. This requires quality education and learning that supports sustainable development at every stage and from all social viewpoints.

The idea of sustainable development is an important milestone in environmental theory because it focuses on how society should be organized, not just on what environmental security needs are recognized and how they can be best carried out. Similarly, this idea is widely supported by business leaders, activists, and scholars. Of course, how much social and economic change is needed to achieve sustainability depends on how unsustainable people believe the current situation to be. Many supporters of this idea consider the present to be very unsustainable and are ready for major changes.

The main idea behind sustainable development is to create a mix of economic, social, and environmental conditions. Without a healthy ecosystem, a better society and economic development

for us and future generations are impossible. Therefore, the environmental aspect can be seen as the main factor that determines whether development is sustainable. The social aspect meets the basic needs of the entire population without exceeding the limits of the ecosystem. The economic aspect is a way to achieve goals within the limits of a socially and environmentally sustainable way of living. Education for sustainable development is meant to teach everyone, including students, the community, and businesses, about the importance and need for sustainable development in today's world. It is not just linked to the environment but also to the development of social and economic areas. Including important issues related to sustainable development in teaching and learning may involve topics like climate change, disaster risk reduction, biodiversity, poverty reduction, and the sustainable use of food and water. It also requires teaching methods that involve learners and encourage them to change their behavior and take action toward sustainable development..

ESD focuses on ideas and principles that support sustainability, such as fairness between generations, equality for all genders, acceptance of different groups, reducing poverty, and protecting and improving the environment. These ideas are included in the Rio Declaration, which has 27 principles of sustainability. These principles help governments, communities, and schools organize knowledge, values, and skills to build better education systems and change existing education to support sustainability.

Meaning and Definition :

Education for sustainable development means changing how we think and act in education, not just having a single definition.

This shows in the many different definitions that have developed around the world in recent years. The following are the main definitions of education in sustainable development that the panel will use for all its work, and they show the full range of what ESD covers.

In the year 1998, the Sustainable Development Education Panel (SDEP) stated:

"Education for sustainable development is about the learning needed to maintain and improve our quality of life and the quality of life for future generations is the main focus. It's about helping people, communities, groups, businesses, and governments live and behave in a sustainable way. It also involves teaching them about environmental, social, and economic problems. It's about getting ready for the world we will live in next century and making sure we are ready for it.

Methodology:

This study uses a qualitative approach, or a mixed-methods approach if needed, to look into how education helps promote sustainable development.

A case study approach, or another method like comparative, ethnographic, or phenomenological, was used to get detailed insights into how Education for Sustainable Development (ESD) is implemented, how people see it, and what impact it has in certain schools and universities.

A thorough review of existing research was done to build a strong foundation for understanding ESD. This included looking at academic articles, UNESCO reports, policy papers, and real-life examples.

Objectives of Environmental Education :

The most important result from Tbilisi was defining the goals of environmental education, which include awareness, knowledge, attitudes, skills, and participation.

Most environmental educators around the world use these goals. Here's a simple explanation of each:

Awareness: To help people and groups learn about and care about the whole environment and the problems it faces.

Knowledge: To help people and groups gain experience and understand the environment and its issues.

Attitudes: To help people and groups develop values and feelings about the environment, and the desire to take action to improve and protect it.

Skills: To help people and groups learn how to find and solve environmental problems.

Results and Discussions:

Four Major Thrusts of ESD

1. Improving access and keeping people in good quality basic education
2. Changing existing educational programs to focus on sustainability
3. Increasing public knowledge and awareness about sustainability
4. Providing training to make sustainability better in all areas

Seven Strategies for ESD

1. Creating a vision and promoting ESD
2. Consulting and making people feel ownership of ESD
3. Building partnerships and networks
4. Building skills and providing training
5. Doing research and encouraging innovation
6. Using Information and Communication Technology (ICT)
7. Checking progress and measuring results

Conclusion : Education for sustainable development is a new way of looking at education that helps people of all ages take responsibility for creating and enjoying a sustainable future.

More and more people around the world are recognizing ESD as an important part of good education and a key step towards sustainable development. Sustainable development is one of the main goals of environmental education and is now a big part of education at every level. We all need to take care of our environment and protect it. When we talk about development, it must be sustainable and fair. The path to ESD is important, and countries that follow it carefully can use it to benefit their people now and give their future generations a better environment. This environment will help them meet their needs and dreams by balancing the economy and the environment. If we don't do this, the results could be really bad. As the Indian economist and scholar Amartya Sen says, "a polluted environment where future generations can't breathe fresh air will still be polluted even if they are very rich."

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लैंगिक समानता और सतत विकास हेतु शिक्षा

कल्पना शर्मा, मनीष सैनी एवं सीता खण्डेलवाल

बियानी गर्ल्स बी.एड कॉलेज, जयपुर

पृष्ठभूमि:

लैंगिक समानता सतत विकास का केंद्रीय आधार है। शिक्षा न केवल सामाजिक न्याय और समान अवसर प्रदान करती है, बल्कि यह महिलाओं एवं पुरुषों दोनों को सामाजिक, आर्थिक और राजनितिक निर्णय-प्रक्रिया में सक्रिय भागीदारी हेतु सशक्त बनाती हैं। अध्ययन से यह स्पष्ट हुआ कि जहाँ शिक्षा में लैंगिक समानता के प्रयासों ने लड़कियों की भागीदारी और नामांकन दर में वृद्धि की है, वहीं ग्रामीण क्षेत्रों, आदिवासी समाज और अल्पसंख्यक वर्ग में अभी भी असमानता बनी हुई है। भारत में 'बेटी बचाओ, बेटी पढ़ाओ' और 'समान अवसर नीति' जैसे कार्यक्रम सकारात्मक दिशा में योगदान कर रहे हैं।

लैंगिक समानता पर आधारित शिक्षा से:

- महिलाओं की रोजगार सहभागिता बढ़ती है।
- बाल विवाह और भेदभाव में कमी आती है।
- पर्यावरण-संवेदनशील और न्यायपूर्ण समाज का निर्माण होता है।

भारत ने सतत विकास लक्ष्य (SDG-4, एवं SDG-5) की दिशा में प्रगति की है। उच्च शिक्षा में महिला नामांकन दर 49 प्रतिशत पहुँच चुकी है। फिर भी STEM क्षेत्रों और नेतृत्व भूमिकाओं में लड़कियों की उपस्थिति सीमित है।

चुनौतियाँ:

- ग्रामीण और भाहरी क्षेत्रों के बीच असमानता
- पितृसत्तात्मक सोच और सांस्कृतिक पूर्वाग्रह
- डिजिटल विभाजन और संसाधनों की कमी
- महिला शिक्षकों एवं मॉडल की न्यूनता

की वर्ड : लैंगिक समानता, सतत विकास, शिक्षा, सशक्तिकरण, SDG भारत, चुनौतियाँ



Psychological Perspectives on Education, Ethics, and Sustainability

Deep Kanwar

Department of Psychology, Shri Bhawani Niketan Girls P.G. College, Jaipur

Abstract:

Sustainable development today requires more than policies and technology—it calls for a transformation in human attitudes, values, and behaviors. Psychology, as the scientific study of human behavior and mental processes, provides essential insights into how individuals learn, adapt, and adopt sustainable practices in their personal, professional, and digital lives. This paper emphasizes the role of psychology in advancing sustainable development through three interrelated domains:

1. **Education for Sustainability**—integrating psychological principles such as reinforcement, modeling, and critical thinking to foster eco-friendly values and lifelong sustainable habits;
2. **Digital Citizenship and Environmental Responsibility**—applying cyberpsychology and social psychology to encourage responsible online behavior, ethical digital interactions, and pro-environmental awareness; and
3. **Ethics and Sustainability in Education**—drawing upon psychological theories of moral development (Piaget, Kohlberg) and positive psychology to instill empathy, compassion, and ethical decision-making in future professionals.

By embedding psychological perspectives into education systems, teacher training, and policy reforms, psychology bridges the gap between awareness and action. It nurtures learners who are not only academically competent but also ethically responsible, environmentally conscious, and digitally aware. Thus, psychology plays a vital role in preparing responsible global citizens capable of addressing the ethical, environmental, and technological challenges of the 21st century.

Keywords: Psychology, Education, Sustainable Development, Ethics, Digital Citizenship, Environmental Responsibility



Art as Reflection of Local Environmental Issues

Devakshi Pareek, Vipula Mathur

Apex University, Jaipur

Background: The dissertation explores how contemporary English literature serves as mirrors and mediators of local ecological crises and examines the site where place-based ecological concerns meet art representation in English literature. Using an ecocritical approach, the research assesses how writers based in different geographical locations use literary strategies to record, critique, and react to particular environmental degradation of their local environments, transmuting local ecological anxieties into global narratives of environmental awareness.

Methodology: Art as long served as a mirror of societal concerns and in recent decades, it has increasingly become a powerful medium for reflecting and responding to local environmental issues. By drawing on cultural traditions, community experiences and ecological realities, artists are not only documenting environmental degradation but also inspiring awareness and activism. The work fills a necessary lacuna in ecocritical research through its focused attention on the localized aspect of environmental representation within literature, extending beyond general environmental concerns to explore how particular geographical, cultural, and ecological contexts inform artistic creation. This research contends that literature is not just a passive mirror of environmental concerns but an active tool in creating environmental consciousness and community involvement with local ecological problems. Categories from Lawrence Buell's ecocritical approach, Rob Nixon's "slow violence," and Yi-Fu Tuan's theories of topophilia in order to explore how artists convert environmental observation into aesthetic and political declaration. Major conclusions show that fiction discussing local environmental problems has specific features such as increased sensitivity to sensory particulars, blurring of scientific conversation with poetic expression, and use of witness testimony as narrative approach, uncovering how writers employ innovative narrative methods like fragmented chronology, multi-species vision, and hybrid genre genres in order to depict the intricate temporal and spatial aspects of environmental damage. The dissertation makes an original contribution to environmental humanities research by developing a theoretical framework for the study of place-based environmental literature, providing a methodology for exploring how place-based ecological knowledge is made integral to art, and carrying implications for understanding the role of literature in environmental advocacy and proposing new paths for the synthesis of literary scholarship with environmental science and policy practice. The research finds that art is both archive and alarm system of local environmental change, holding ecological memory while at the same time organizing communities toward environmental action, shedding light on the central role of place-based artistic practice in cultivating environmental awareness and resilience in the face of ecological crisis through the translation of local environmental observation into effective artistic expression bridging individual experience with public environmental responsibility.

Conclusion: Art serves as a powerful lens through which local environmental issues are observed, understood, and communicated. By weaving cultural traditions, community experiences, and

ecological realities into creative expressions, artists transform abstract environmental challenges into tangible narratives that resonate with people at an emotional and intellectual level. Local art not only documents the environmental transformations of a region but also inspires dialogue, awareness, and action toward sustainability. Whether through murals, installations, or performances, these artistic interventions become catalysts for social change, bridging the gap between scientific knowledge and public engagement. Ultimately, art reinforces the interconnectedness of humanity and nature, emphasizing the urgent need for collective responsibility and environmental stewardship.

Keywords: Environmental art, Eco-art, Sustainability, ecological awareness, local Identity, Pollution, Social changes, Climate change.

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‘शैक्षिक प्रणाली में नैतिकता और स्थिरता की भूमिका’

अर्जुन सिंह

सहायक आचार्य, हिंदी विभाग, राजस्थान विश्वविद्यालय, जयपुर

वर्तमान वैश्वीकरण एवं तकनीकी विकास के युग में शैक्षिक प्रणाली केवल ज्ञान हस्तांतरण का माध्यम बनकर नहीं रह गई, बल्कि यह व्यक्तित्व निर्माण, सामाजिक उत्तरदायित्व और नैतिक मूल्यों की स्थापना का एक महत्वपूर्ण साधन बन गई है। इसका उद्देश्य शैक्षिक प्रणाली में नैतिकता और स्थिरता की भूमिका को विश्लेषित करता है। नैतिक शिक्षा विद्यार्थियों में ईमानदारी, समर्पण, सहयोग, सामाजिक उत्तरदायित्व की भावना जैसे गुण विकसित करती है। वही स्थिरता की अवधारणा उन्हें पर्यावरणीय जागरूकता संसाधनों का विवेकपूर्ण उपयोग तथा भविष्य में अपने उत्तरदायित्व का बोध कराती है। सारांश यह है कि यदि शैक्षिक पाठ्यक्रम में नैतिक और स्थायी विकास के सिद्धांतों को सम्मिलित किया जाए, तो समझ में एक संतुलित, सहिष्णु और पर्यावरण संवेदनशील पीढ़ी का निर्माण संभव है। इसका प्रमुख उद्देश्य नैतिकता और स्थिरता को शिक्षा के सभी स्तरों पर एकीकृत करना न केवल व्यक्तिगत विकास को प्रोत्साहित करता है, बल्कि यह सामाजिक और वैश्विक समस्याओं के समाधान की दिशा में भी अपनी महत्वपूर्ण भूमिका निभाता है।

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Art as Reflection of Local Environment issues

Patricia D'silva¹, Madubala Sharma²

¹Biyani Girls B.Ed. College, ²Principal, Jaipur College of Education and Science

Abstract

Art has always played a very crucial role in the lives of the people. By the means of art people can convey their beliefs, sentiments, and apprehensions. It serves as a powerful facilitator for disclosing and analytically engaging with the intricacies of local environmental issues. Through its capacity to translate ecological concerns into culturally resonant visual narratives, it not only mirrors the environmental realities of specific communities but also stimulates deeper emotional engagement and critical reflection on our relationship with the environment.

In the present era, creativity is being used by many artists to showcase the environmental problems like Global Warming Loss of Biodiversity, Soil Degradation, and Water Pollution. Researchers found that when climate activists targeted Western artworks in 2022, public attention to climate issues measurably increased. Analyses of Google Trends data showed a notable rise in queries related to climate action following the protests. In another study analyzing audience responses to artworks at ART COP21 in Paris (2015–2016), 883 individuals across 37 artworks were surveyed. Though primarily measuring perceptions, this illustrates the scale at which audiences engage with climate-themed visual art.

Through artworks, murals, effigies, and demonstrations, they reveal what issues affect their local environment and drive others to care and make a difference. This piece investigates how art serves as a reflection of ecological issues, speaking up for nature and inspiring its protection. It suggests that art isn't limited to beauty – It's also an impactful medium to influence society through awareness and action.

Keywords : Environmental Art, Ecological Awareness, Art and Environment, Visual Narratives, Local Environment, Cultural Expression, Cultural Reflection, Global Warming, Soil Degradation, Community Engagement, Artistic Expression, Sustainable Art Practices.



“Sudha Murthy’s Children’s Literature: A Pedagogical Lens on Ethics and Sustainability in Education

Heera Lal Chopra

English Department, Apex University, Jaipur

Email: heerlalchopra9226@gmail.com

Abstract

Sudha Murthy is a well-known Indian writer. She has written many books for children. Her stories are simple, clear, and full of meaning. They are easy for young readers to understand. At the same time, they carry deep lessons for life. Sudha Murthy’s children’s literature is very beneficial in education. Her stories teach values like honesty, kindness, and respect. She shows the importance of family and relationships. Her books highlight Indian culture and traditions. She also talks about modern problems in society. Children learn moral lessons in an enjoyable way. Her style is simple and direct. She uses everyday situations to explain big ideas. Children can relate to her characters easily. They see themselves in her stories. This helps them connect better with the message. Education is not only about textbooks. It is also about character building. Sudha Murthy’s books help in character building. They teach children to make good choices. They encourage empathy and compassion. Children learn how to face challenges with courage. Her stories also promote creativity. She often writes about imagination and curiosity. This helps children think in new ways. It improves their creative and critical thinking. It also helps them become better problem-solvers. Her books are full of cultural knowledge. Children learn about Indian festivals, customs, and values. This creates pride in their heritage. At the same time, her books are universal. Children from any place can enjoy them.

Her stories highlight kindness, equality, and justice, which are global values. In classrooms, her books can be used as tools. Teachers can use them to explain moral lessons. Stories can be discussed in groups. Students can learn through storytelling and activities. This makes learning more interactive and joyful. It reduces the pressure of formal study. Her literature also supports emotional development. Children learn how to handle sadness, anger, and fear. They learn to respect differences among people. They understand that kindness is more important than wealth. This emotional learning is very important for education. Sudha Murthy writes with compassion and wisdom. Her children’s books are not only entertaining. They are also educational. They prepare children for real life. They make children aware of social issues. They teach them to be sensitive human beings. In conclusion, Sudha Murthy’s children’s literature is a treasure for education. It combines fun with learning. It makes children better readers, thinkers, and human beings. It teaches moral, cultural, and emotional values. It supports both academic and life education. Her stories will continue to guide young minds. They will inspire children to live with love and responsibility.

Children’s literature has always been a powerful medium for shaping values, morals, and critical thinking among young learners. In India, Sudha Murthy has emerged as a prominent figure whose

writings for children are deeply rooted in ethics, simplicity, and life lessons that encourage sustainable living. Her narratives not only entertain but also instill moral courage, empathy, honesty, and environmental awareness. At the same time, the present educational system faces the pressing challenge of integrating ethics and sustainability into formal learning frameworks to foster responsible global citizens.

This paper examines how Sudha Murthy's works for children act as effective pedagogical tools that align with the objectives of sustainable education. By analyzing her stories such as *How I Taught My Grandmother to Read*, *The Magic Drum* and *Other Favorite Stories*, and *Grandma's Bag of Stories*, the research highlights how literature provides a natural bridge to teach values of kindness, truth, integrity, and ecological sensitivity.

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Art as Reflection of Local Environmental Issues with Adolescent Emotional Maturity

Jai Ram

Department of Education, Mohan Lal Sukhadiya University, Udaipur, Rajasthan, India

Introduction: Art has always been a mirror of society, capturing human emotions, cultural practices, and environmental concerns. Adolescence, as a transformative stage, requires emotional maturity to understand and respond to pressing social and ecological challenges. Exploring art as a medium of environmental reflection provides both creative expression and psychological growth for adolescents.

Objectives:

- To analyze how local environmental issues can be expressed through art.
- To examine the role of art in enhancing emotional maturity among adolescents.
- To explore the integration of ecological awareness with creative practices in education.

Methodology: A qualitative-interpretative approach is employed, including analysis of artworks created by adolescents on local environmental themes. Interviews and reflective discussions were conducted to understand emotional responses and maturity levels. Content analysis was used to interpret visual and verbal expressions.

Findings:

- Artworks depicted significant concerns such as pollution, deforestation, water scarcity, and waste management.
- Adolescents demonstrated empathy, responsibility, and awareness through creative expression.
- Art fostered emotional regulation, reflective thinking, and ecological sensitivity.

Conclusion: Art serves as both a reflective and transformative medium that connects environmental issues with adolescent emotional development. By integrating artistic expression into environmental education, adolescents not only become aware of ecological challenges but also develop maturity, empathy, and responsibility essential for sustainable living.

Keywords: Adolescents, Emotional Maturity, Environmental Issues, Education, Sustainability



Education for Promoting Sustainable Development

Neetu

Govt. Arts College, Sikar

Education is increasingly recognized as one of the most effective tools for promoting sustainable development, as it provides individuals and societies with the capacity to respond to global challenges and build a future that is socially inclusive, economically viable, and environmentally responsible. Sustainable development requires not only technological and policy innovations but also a transformation in the way people think, act, and interact with their environment and communities. Education for Sustainable Development (ESD) addresses this need by embedding sustainability principles into curricula, teaching methodologies, and lifelong learning opportunities, thereby empowering learners to critically engage with pressing issues such as climate change, biodiversity loss, poverty, gender inequality, and resource depletion.

At its core, ESD goes beyond the transmission of knowledge. It seeks to nurture values, attitudes, and skills that foster responsible citizenship, creative problem-solving, and collaborative decision-making. By emphasizing interdisciplinary approaches, it encourages learners to see connections between environmental, social, and economic systems rather than treating them in isolation. For instance, students are encouraged to explore how energy use impacts climate, how consumption patterns affect ecosystems, and how policies can reduce inequality while promoting innovation and growth.

Moreover, education serves as a driver of empowerment, particularly in marginalized communities, by enabling people to access opportunities, advocate for their rights, and participate actively in

democratic and sustainable governance. Formal education systems, non-formal community programs, and informal channels such as media and digital platforms all contribute to spreading sustainable practices and shaping public attitudes. Teachers play a pivotal role as change agents by creating participatory and experiential learning environments that connect classroom concepts with real-world applications.

In alignment with the United Nations' 2030 Agenda for Sustainable Development, particularly Goal 4 (Quality Education), ESD is not only about learning about sustainability but also about learning for and through sustainability. This means equipping learners with critical thinking, systems thinking, adaptability, and ethical reasoning. It also involves promoting values such as equity, inclusiveness, respect for cultural diversity, and stewardship of natural resources. Through experiential learning—such as community projects, environmental conservation initiatives, or social innovation labs—education encourages learners to move from awareness to action.

The transformative power of education in advancing sustainable development lies in its ability to reach across generations and sectors. When integrated effectively, it shapes responsible consumers, innovative entrepreneurs, and engaged citizens who can collectively drive sustainable economic models, equitable social structures, and regenerative environmental practices. Thus, education is not only a goal in itself but also a means of achieving all other Sustainable Development Goals.

In conclusion, education for promoting sustainable development is both a moral and practical necessity in today's interconnected world. It equips societies to face complex challenges with resilience and creativity, ensures that development processes are inclusive and fair, and safeguards the planet for future generations. By making education more transformative, participatory, and sustainability-oriented, we lay the foundation for a more sustainable and equitable future.



सतत् विकासोन्मुख शिक्षा में विद्यार्थियों की शैक्षिक चिंता, आकांक्षा स्तर एवं मानसिक स्वास्थ्य की भूमिका

कमलेश मीना

शिक्षा विभाग मोहनलाल सुखाड़िया वि.वि., उदयपुर

वर्तमान शैक्षिक परिवेश में छात्रों की शैक्षिक उपलब्धि को प्रभावित करने वाले विभिन्न कारकों का अध्ययन करना बहुत आवश्यक हो जाता है। विशेषतः जब शिक्षा को सतत् विकास के प्रमुख उपकरण के रूप में देखा जा रहा हो। शोध लेख विद्यार्थियों की शैक्षिक चिंता, आकांक्षा के स्तर और मानसिक स्वास्थ्य के शैक्षिक उपलब्धि का मूल्यांकन करता है। इन सभी तत्वों को सतत् विकास के उद्देश्यों से जोड़ने का प्रयास किया गया है। अत्यधिक शैक्षिक चिंता छात्रों के मानसिक स्वास्थ्य को नकारात्मक रूप से प्रभावित करती है, जिससे छात्रों की शैक्षिक उपलब्धि में गिरावट

देखने को मिलती है। वहीं उच्च आकांक्षा स्तर और संतुलित मानसिक स्वास्थ्य शैक्षिक प्रदर्शन में सकारात्मक योगदान देती है। शिक्षा न केवल ज्ञान अर्जन का माध्यम है, बल्कि सामाजिक, मानसिक और भावनात्मक विकास को भी प्रोत्साहित करती है। सतत् विकास के लक्ष्य जैसी समावेशी और समान गुणवत्तापूर्ण शिक्षा तथा विद्यार्थियों को जीवन भर सीखने के अवसर की दिशा में अपनी महत्वपूर्ण भूमिका निभाती है।

अतः आवश्यक है कि सतत् विकासोन्मुखी शैक्षिक नीतियों में मानसिक स्वास्थ्य शैक्षिक चिंता और आकांक्षा संवर्धन को प्राथमिकता दी जाए, जिससे न केवल छात्रों की शैक्षिक सफलता सुनिश्चित हो सके, बल्कि व्यापक सामाजिक विकास भी संभव हो सके।

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Jeffrey–Hamel Flow of Casson Fluid under the Influence of Magnetic Field with Heat Source Effects

Manoj Kumar Nahlia

Research Scholar, Department of Mathematics, University of Rajasthan, Jaipur, India

Email- manojkumarnahlia@gmail.com

The work explores the Jeffrey–Hamel flow of a Casson fluid under the combined influence of a magnetic field and a volumetric heat source. The governing equations, derived from the Navier–Stokes, energy conservation principle, and modified to incorporate the non-Newtonian behavior of the Casson fluid along with magnetohydrodynamic effects. These coupled nonlinear equations are addressed using the Differential Transformation Method, an efficient semi-analytical technique well-suited for nonlinear fluid flow, heat, and mass transfer problems. A detailed parametric study is carried out to assess how variations in the Casson parameter and magnetic field strength influence velocity and temperature fields.

Methodology: We use the Differential Transformation Method to solve coupled ordinary differential equations.

Result and Discussion: Results indicate that increasing the Casson parameter reduces fluid velocity in the divergent channel while enhancing it in the convergent channel. Meanwhile, stronger magnetic fields and internal heat generation significantly raise the temperature of the fluid.

Conclusion: Comparisons with available numerical data confirm the accuracy of the method. These findings offer valuable insight into the behavior of non-Newtonian fluids in MHD environments, relevant to various engineering and industrial applications.

Keywords: MHD, Casson fluid, Jeffrey-Hamel flow, DTM.

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Study role of mental health in shaping sustainable future

Mahesh Kumar Sharma

Education Department, MLSU, Udaipur

Abstract:

The pursuit of a sustainable future requires not only technological innovation and policy reform but also the cultivation of resilient, healthy, and adaptive human minds. Mental health plays a pivotal role in shaping sustainable development by influencing individual decision-making, community engagement, and societal well-being. This study explores the critical intersection between mental health and sustainability, emphasizing how psychological well-being fosters creativity, empathy, and responsible behavior—qualities essential for addressing global challenges such as climate change, social inequity, and resource management. A sound state of mental health empowers individuals to adopt eco-friendly practices, strengthens collective resilience against crises, and enhances the capacity of societies to envision long-term goals beyond immediate self-interest. Furthermore, educational initiatives and community-based interventions that integrate mental health awareness are shown to amplify sustainability efforts by nurturing mindful consumption, cooperation, and inclusivity. The seminar highlights that without addressing mental health concerns, the vision of a sustainable future remains incomplete, as individuals burdened with stress, anxiety, or social alienation may lack the motivation and energy to contribute effectively. Thus, mental health is not merely a personal concern but a global imperative—an underlying foundation for shaping a balanced, equitable, and sustainable world.

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Education for Promoting Sustainable Development

Mohini Rathore

Department of Education, Faculty of Humanities and Arts, University of Technology, Vatika, Jaipur

Abstract : Education has emerged as a central pillar in advancing the global agenda of sustainable development, as it empowers individuals and societies with the knowledge, competencies, values, and ethical perspectives required to foster a balanced relationship between humans and nature. *Education for Sustainable Development (ESD)* goes beyond conventional teaching and learning by integrating environmental, social, cultural, and economic dimensions into the educational process. It emphasizes experiential and participatory approaches that cultivate critical thinking, creativity, and problem-solving skills, enabling learners to respond effectively to pressing challenges such as climate change, resource depletion, poverty, gender inequality, and biodiversity loss.

At the same time, ESD nurtures a sense of global citizenship by encouraging responsibility, empathy, and collaboration across communities and generations. By aligning educational practices with the United Nations Sustainable Development Goals (SDGs), particularly Goal 4.7, it ensures that learners acquire the capabilities to make informed decisions and adopt sustainable lifestyles. Moreover, ESD plays a transformative role in bridging traditional wisdom with scientific innovation, thereby promoting intergenerational equity and long-term resilience.

In this way, education is not merely a process of academic enrichment but a powerful instrument for reshaping values, attitudes, and behaviors toward sustainability. It equips present and future generations to act as change agents who can contribute to environmental conservation, social justice, cultural preservation, and economic stability. Hence, promoting sustainable development through education is both a moral imperative and a strategic pathway for achieving inclusive growth and ensuring the survival of humanity and the planet.

Keywords: Education, Sustainable Development, ESD, SDGs, Environmental Awareness, Global Citizenship, Intergenerational Equity, Inclusive Growth



21वीं सदी के लिए शिक्षा में नवाचार: नो बैग डे, आनंददायी शिक्षण और सतत अधिगम की संभावनाएँ (NEP-2020 के संदर्भ में)

Neetu Kumari Sharma

Department of Education, MLSU, Udaipur

21वीं सदी की शिक्षा व्यवस्था निरंतर परिवर्तनशील वैश्विक चुनौतियों, तकनीकी नवाचारों और मानव-केंद्रित दृष्टिकोण की अपेक्षाओं के अनुरूप नए स्वरूप ग्रहण कर रही है। भारत में राष्ट्रीय शिक्षा नीति 2020, इस दिशा में एक महत्वपूर्ण पहल है, जो शिक्षा को केवल ज्ञानार्जन तक सीमित न रखकर उसे जीवनोपयोगी, आनंददायी और सतत बनाने पर बल देती है। इसी परिप्रेक्ष्य में “नो बैग डे” जैसी पहल छात्रों के लिए शिक्षण को बोझमुक्त और आनंदमय बनाने का एक सशक्त माध्यम है। नो बैग डे का उद्देश्य विद्यार्थियों को पारंपरिक कक्षाकक्षीय पठन-पाठन से बाहर निकालकर व्यावहारिक अनुभव, गतिविधि-आधारित अधिगम, खेल, कला, संगीत, स्थानीय संस्कृति और जीवन कौशल से जोड़ना है। यह पहल न केवल शैक्षिक परिणामों को बेहतर बनाती है, बल्कि बच्चों की रचनात्मकता, आलोचनात्मक सोच और आत्मविश्वास को भी प्रोत्साहित करती है।

आनंददायी शिक्षा की अवधारणा शिक्षा को भयमुक्त और सहयोगात्मक बनाकर विद्यार्थियों के भीतर स्व-प्रेरणा और उत्साह को बढ़ाती है। यह दृष्टिकोण सतत शिक्षा के लक्ष्य को भी आगे बढ़ाता है, जिसमें जीवनभर सीखने की प्रवृत्ति, पर्यावरणीय चेतना, सामाजिक जिम्मेदारी और मानवीय मूल्यों का समावेश होता है। नो बैग डे को नियमित रूप से लागू करने से विद्यालय का वातावरण केवल परीक्षा-केंद्रित न रहकर कौशल आधारित और अनुभवपरक बन सकता है।

इस शोध पत्र में नो बैग डे, आनंददायी शिक्षा और सतत अधिगम की परस्पर संबद्धता का गहन विश्लेषण प्रस्तुत किया जाएगा। साथ ही, NEP-2020 द्वारा सुझाए गए अनुभवात्मक शिक्षा, समावेशिता, लचीले पाठ्यक्रम, और बहुआयामी अधिगम के सिद्धांतों को केंद्र में रखते हुए यह अध्ययन यह दर्शाएगा कि कैसे विद्यालयी स्तर पर इन पहलों के माध्यम से 21वीं सदी की शिक्षा अधिक सशक्त और व्यावहारिक बन सकती है। शोध का मुख्य तर्क यह है कि यदि विद्यालय शिक्षा में नो बैग डे और आनंददायी शिक्षण जैसी नवाचारी पहलें व्यवस्थित रूप से लागू की जाएँ, तो विद्यार्थी न केवल शैक्षिक रूप से प्रगति करेंगे, बल्कि वे सतत विकास के दायित्वपूर्ण नागरिक भी बन सकेंगे।

प्रमुख शब्द : नो बैग डे, आनंददायी शिक्षा, सतत अधिगम, राष्ट्रीय शिक्षा नीति 2020, अनुभवात्मक शिक्षण, जीवन कौशल, नवाचार, 21वीं सदी की शिक्षा



Digital Citizenship and Environmental Responsibilities: Shaping a Sustainable Future

Priyanka Sharma, Vipula Mathur

Apex University, Jaipur

Background: The 21st century has witnessed a rapid integration of digital technologies into every aspect of human life, reshaping the very idea of citizenship. Digital citizenship now extends beyond conventional social and political responsibilities to include ethical participation in the online world, with a focus on respect, inclusivity, and accountability. At the same time, the environmental implications of digital expansion have emerged as a global challenge. These dual realities make it essential to unite digital literacy with environmental awareness in order to shape a sustainable future.

Methodology: This study follows a qualitative, analytical, and descriptive approach. A thematic review of scholarly articles, international policy documents, and case studies was undertaken to explore the intersection of digital citizenship and environmental sustainability. The methodology includes comparative analysis of best practices from global industry initiatives, such as the adoption

of green technologies and circular economy models, alongside academic programs that embed sustainability principles into curricula. This cross-sectional analysis enables a comprehensive understanding of how global industry and academia can collaborate to foster sustainable digital practices.

Result and Discussion: The study reveals that digital citizenship, when aligned with environmental responsibility, can significantly contribute to building a sustainable digital society. Academic institutions play a central role by embedding sustainability concepts into curricula, thereby cultivating eco-conscious digital citizens. For example, integrating modules on energy-efficient digital practices and e-waste recycling in higher education has shown positive behavioral outcomes among students. Simultaneously, industry leaders are increasingly adopting carbon-neutral policies, investing in renewable energy, and promoting eco-friendly product designs. These initiatives demonstrate the potential of collaborative strategies. Bridging these gaps requires stronger partnerships between academia and industry, reinforced by policy support at the national and global levels.

Conclusion: The findings underscore that the future of sustainability lies in reimagining digital citizenship as both a social and environmental responsibility. By uniting global industry and academia, digital literacy can be transformed into a tool for promoting ecological consciousness and sustainable practices. The collective responsibility of individuals, institutions, and industries is crucial in reducing the carbon footprint of digitalization, managing e-waste effectively, and promoting eco-friendly digital usage. Thus, the synergy between digital citizenship and environmental responsibility can pave the way for a sustainable future, ensuring that technology-driven progress aligns with ecological preservation.

Keywords: Digital Citizenship; Environmental Responsibility; Sustainability; E-waste Management; Industry–Academia Collaboration



शेखावाटी के प्रमुख तीर्थ स्थलों का सांस्कृतिक व ऐतिहासिक अध्ययन

राजेन्द्र कुमार, सुनिता फौजदार

मानविकी व कला विभाग, अपेक्स विश्वविद्यालय, जयपुर

शेखावाटी क्षेत्र राजस्थान का एक महत्वपूर्ण सांस्कृतिक एवं ऐतिहासिक परिक्षेत्र है, जो अपनी स्थापत्य कला, भित्तिचित्रों तथा धार्मिक एवं आध्यात्मिक परम्पराओं के लिए विख्यात है। इस क्षेत्र में स्थित धार्मिक व लोक तीर्थस्थल न केवल आस्था के केन्द्र हैं बल्कि लोक जीवन, सामाजिक एकता तथा सांस्कृतिक धरोहर के संदेशवाहक भी हैं। सीकर, झुन्झुनूं तथा चूरु जिलों में फैले इन

तीर्थस्थलों में प्राचीन मंदिर, बावडियाँ, दरगाहें तथा लोक आस्थाओं से जुड़े स्थल शामिल हैं, जो क्षेत्र की धार्मिक और लोक विश्वासों की गहन झलक प्रस्तुत करते हैं।

इस शोध पत्र में शेखावाटी के प्रमुख धार्मिक स्थल खाटूश्यामजी मंदिर, सालासर बालाजी, लोहागर्ल तीर्थ, गणेश्वर तीर्थ, गोगाजी, नरहड दरगाह, लोक देवताओं के स्थान एवं ऐतिहासिक धार्मिक धरोहरें जन मानस की आस्था, संस्कृति और सामाजिक संरचना का प्रतिबिम्ब प्रस्तुत करते हैं। अध्ययन से स्पष्ट होता है कि ये स्थल न केवल आस्था के प्रतीक हैं, बल्कि क्षेत्र की सांस्कृतिक अस्मिता और सामुदायिक जीवन धारा को भी सशक्त बनाते हैं। अतः इन स्थलों का संरक्षण और गहन अध्ययन केवल धार्मिक दृष्टि से ही नहीं, बल्कि सांस्कृतिक, समाजशास्त्रीय और आर्थिक दृष्टिकोण से भी अनिवार्य है।

मुख्य बिन्दु: शेखावाटी, तीर्थस्थल, कला एवं स्थापत्य, सांस्कृतिक चेतना, ऐतिहासिक परिपेक्ष्य, भित्तिचित्र।

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The Role of Teachers as Facilitators of Emotional and Spiritual Intelligence

Savitri Wakale* and Neha Pandey

Manipur International University, Manipur

Abstract: In contemporary education, the role of teachers extends beyond the delivery of knowledge to fostering holistic development among learners. Emotional intelligence (EI) and spiritual intelligence (SI) have emerged as essential dimensions of human growth, enabling individuals to understand themselves, build meaningful relationships, and pursue life with purpose and resilience. Teachers, as facilitators, play a critical role in nurturing these intelligences within the classroom environment. This paper explores how educators can integrate emotional and spiritual intelligence into teaching practices, emphasizing empathy, compassion, values, and reflective learning. The discussion highlights practical approaches, challenges, and the long-term impact of cultivating emotionally and spiritually intelligent learners who can contribute positively to society.

Methodology: The study adopts a conceptual and descriptive approach, drawing upon contemporary literature, theoretical frameworks, and case studies in the field of education and psychology. Various models of emotional intelligence (e.g., Goleman's framework) and spiritual intelligence (e.g., Zohar & Marshall, Emmons) are reviewed to understand their educational applications. The methodology involves:

Literature Review: Critical analysis of books, journal articles, and research studies on the role of teachers in developing EI and SI.

Theoretical Framework: Application of psychological and pedagogical theories to examine the teacher's role as a facilitator.

Discussion of Practices: Identifying classroom strategies such as mindfulness activities, reflective dialogue, value-based education, and experiential learning.

This qualitative approach provides insights into how teachers can design an inclusive and nurturing learning environment.

Results and Discussion: Findings from existing research suggest that teachers who consciously integrate emotional and spiritual dimensions in education significantly influence students' personal and academic growth. Teachers act as role models by demonstrating empathy, patience, and ethical conduct, which inspires students to develop similar qualities. By creating safe spaces for dialogue, encouraging self-reflection, and respecting diversity, teachers help learners cultivate both inner awareness and interpersonal skills.

Practical approaches include:

Emotional Intelligence: Encouraging students to recognize and regulate their emotions, fostering empathy through group discussions, and developing conflict resolution skills.

Spiritual Intelligence: Promoting value-based learning, mindfulness practices, meditation, and opportunities for moral reasoning and self-inquiry.

Holistic Development: Teachers integrate EI and SI into curricular and co-curricular activities, balancing academic excellence with character formation.

Challenges remain, such as limited training for teachers, curriculum overload, and societal emphasis on examination-oriented outcomes. Nevertheless, educators who prioritize these intelligences prepare learners to lead meaningful, resilient, and socially responsible lives.

Conclusion: Teachers, as facilitators of emotional and spiritual intelligence, play a transformative role in shaping the future of learners. Beyond imparting academic knowledge, they nurture empathy, values, inner strength, and a sense of connectedness. By adopting reflective practices and integrating holistic methods into education, teachers can contribute to the development of emotionally balanced and spiritually aware individuals. This integration not only enhances learning outcomes but also equips students to meet the challenges of a rapidly changing world with wisdom and compassion.

Keywords: Teachers, Emotional Intelligence, Spiritual Intelligence, Holistic Education, Facilitation



The role of ethics and sustainable development in education

Shiv Kumar

Department of Education, MLSU, Udaipur

Abstract: The integration of ethics and sustainable development into education is essential for cultivating responsible, aware, and engaged global citizens. Ethics in education promotes moral values such as integrity, fairness, and respect, fostering the personal and social development of learners. Simultaneously, education for sustainable development (ESD) equips students with the knowledge, skills, attitudes, and values necessary to shape a sustainable future. By aligning educational practices with the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), institutions can encourage critical thinking, environmental stewardship, and global citizenship. The combination of ethical principles and sustainability literacy within curricula supports transformative learning, intergenerational equity, and inclusive development. Ultimately, embedding ethics and sustainable development in education empowers learners to make informed, responsible decisions that positively impact their communities and the planet.

Keywords : Ethics, Sustainable Development, Education, Moral Values, Environmental Education, SDGs, Global Citizenship, Education for Sustainable Development (ESD), Critical Thinking, Intergenerational Equity



The Role of Rajyoga Meditation in Enhancing Happiness among College Students

Sreenivas Peddi* and Neha Pandey

Manipur International University, Manipur

Abstract: In contemporary academic life, college students face heightened levels of stress, anxiety, and emotional instability due to academic competition, social pressures, and uncertain career prospects. Happiness, as an indicator of psychological well-being, is crucial during this transitional stage of life. Raj yoga meditation, rooted in ancient Indian wisdom, provides a holistic method of self-realization and inner peace by harmonizing thoughts, emotions, and actions. This paper explores the role of Raj yoga meditation in enhancing happiness among college students. Evidence from psychological research and yogic philosophy indicates that regular practice of Raj yoga develops positive thinking, emotional resilience, and a sense of purpose, which significantly contribute to overall happiness.

Methodology: The study employed a descriptive and analytical approach. A sample of college students aged 18–24 years was selected through convenience sampling. A structured questionnaire consisting of demographic details, a Happiness Scale (measuring domains such as emotional well-being, social connectedness, and personal growth), and a Raj yoga Practice Scale (measuring frequency and intensity of meditation practice) was administered. Both qualitative and quantitative data were collected. Reliability was ensured through Cronbach's Alpha, while correlation and regression analyses were applied using SPSS to examine the relationship between Raj yoga meditation and happiness. Focus group discussions and student feedback further enriched the interpretation of data.

Results and Discussion: Findings revealed a positive and significant correlation between the practice of Raj yoga meditation and levels of happiness among college students. Students who practiced Raj yoga daily reported higher scores in self-confidence, emotional stability, and interpersonal relationships compared to those who did not. Raj yoga provided a constructive way of coping with academic stress, reducing negative emotions, and fostering clarity of thought. Regression analysis further indicated that the intensity and frequency of meditation practice predicted happiness outcomes.

These results resonate with prior studies highlighting the effectiveness of meditation in improving psychological well-being. Raj yoga, unlike other meditative practices, emphasizes the awareness of self as a soul and connection with the Supreme, which strengthens inner resilience and promotes values such as peace, purity, and positivity. For college students, this spiritual orientation not only enhances their happiness but also cultivates discipline, concentration, and self-management—key qualities for academic success and personal development.

Conclusion: Raj yoga meditation plays a transformative role in enhancing happiness among college students. By offering a spiritual and psychological framework for managing stress, developing positive attitudes, and experiencing inner joy, Raj yoga equips students to navigate academic challenges with balance and optimism. Educational institutions may consider integrating Raj yoga meditation sessions into wellness programs to promote holistic development and mental well-being.

Keywords: Raj yoga Meditation; Happiness; College Students; Stress Management; Well-Being



The Role of Ethics and Sustainability in Educational system

Subhita Kumari¹ and Aditi Soni²

¹L. K. L. B. Mahila TT College, ²Biyani Girls B.Ed College, Jaipur

Abstract: In an era marked by global crises—from climate emergencies to social inequities—the educational system's role in nurturing both ethical reasoning and sustainable awareness is critical. UNESCO's Sustainable Development Goal (SDG) Target 4.7 focuses on making sure all students learn the knowledge and skills they need to support a sustainable future by including Education for Sustainable Development (ESD) in school programs around the world.. Moreover, by 2025, approximately 60% of educational institutions globally have begun integrating sustainability into their curriculum, and over 75% of universities are adopting institutional sustainability strategies. These statistics reflect a growing trend among educational institutions to align with ethical and ecological imperatives. Recent data underscores the widespread institutional commitment to sustainability: 45% of schools have waste-reduction programs, 10% of universities are already carbon-neutral, and 55% of teachers have received training on sustainability integration. Educational policy surveys further reveal that 88% of educators affirm that sustainability education fosters values like responsibility, stewardship, and resilience; 61% report cross-curricular integration, though 45% note coverage remains inadequate in practice.

Ethics and sustainability must be regarded not as add-ons but as foundational to educational systems aiming to produce morally aware, environmentally responsible citizens. The rapid global adoption of sustainability principles in curricula, teacher training, and institutional strategies signals a favorable shift. However, achieving full integration requires addressing infrastructural challenges, equipping educators with resources and training, and embedding sustainability across disciplines.

Keywords: Ethics, Sustainability, Educational System, Curriculum, SDG4, Pedagogical Practices, Education for Sustainable Development (ESD)



Role of Rajyoga Meditation in Reducing Stress among Middle-Aged Adults

Sudhendu Mishara* and Neha Pandey

Manipur International University, Manipur

Abstract: Stress has become one of the most common psychological and physiological challenges faced by middle-aged adults, affecting their personal well-being, family relationships, and work performance. Rajyoga meditation, rooted in ancient Indian spiritual traditions, offers a holistic method for stress management by cultivating awareness, inner peace, and emotional stability. This study explores the role of Rajyoga meditation in reducing stress among middle-aged adults aged 35–55. Data was collected using a structured questionnaire and stress scale administered to a purposive sample of participants who practiced Rajyoga meditation for a minimum of six months. Findings indicate that consistent practice of Rajyoga significantly lowers perceived stress levels, enhances coping strategies, and promotes psychological resilience. The study highlights the relevance of integrating spiritual practices like Rajyoga into modern lifestyle interventions for stress management.

Methodology: The study adopted a descriptive and quantitative research design. A total of 200 middle-aged adults (both male and female) between the ages of 35 and 55 years were selected through convenience sampling from urban centers where Brahma Kumaris Rajyoga meditation centers operate. A structured questionnaire was used, consisting of two sections: demographic details and a standardized Perceived Stress Scale (PSS-10). The intervention group comprised individuals who had practiced Rajyoga meditation for at least 20 minutes daily over the past six months, while a comparison group included non-meditators. Data was analyzed using SPSS software, applying descriptive statistics (mean, standard deviation), Pearson correlation to explore associations, and independent t-test to compare stress levels between meditators and non-meditators.

Results and Discussion: The results revealed a statistically significant reduction in stress levels among Rajyoga meditators compared to non-meditators ($p < 0.05$). Participants who engaged in regular practice reported improved emotional regulation, reduced anxiety, and greater clarity in decision-making. The correlation analysis indicated a negative relationship between duration of meditation practice and stress scores, suggesting that longer engagement in Rajyoga was associated with lower stress.

Discussion of findings suggests that Rajyoga meditation operates at both cognitive and emotional levels. By focusing attention inward and cultivating positive affirmations, meditators experience a shift from stressful thought patterns toward a sense of inner calm. This aligns with earlier studies highlighting the benefits of meditation on the autonomic nervous system, reduction of cortisol levels, and overall psychological well-being. Importantly, Rajyoga does not require rituals or physical postures, making it accessible and adaptable for middle-aged adults managing multiple

responsibilities. The findings further support integrating Rajyoga practices into community health programs, workplace wellness initiatives, and personal stress management strategies.

Conclusion: The study concludes that Rajyoga meditation plays a significant role in reducing stress among middle-aged adults. Regular practice not only decreases perceived stress levels but also enhances resilience, emotional balance, and subjective well-being. As stress continues to be a major challenge in midlife, incorporating Rajyoga meditation into daily routine can serve as an effective, low-cost, and sustainable method for achieving psychological health. Future research may expand the scope by including larger samples, longitudinal designs, and comparative analysis with other meditation practices to strengthen the evidence base.

Keywords: Rajyoga Meditation; Stress Reduction; Middle-Aged Adults; Emotional Well-being; Spiritual Practices



Digital Infrastructure: A Necessity for Sustainable Development in the 21st Century

Suman Rathore* and Sapna Sharma

Banasthali Vidyapith University, Newai (Rajasthan)

Abstract: The 21st century is marked by rapid globalization and technological advancement, where digital infrastructure has become the backbone of modern societies. The growing reliance on digital technologies has transformed how individuals, organizations, and governments function, making digital infrastructure as essential as physical infrastructure like roads, electricity, and water supply. The COVID-19 pandemic further accelerated this transformation by demonstrating that technology is no longer optional but a critical necessity for education, healthcare, business, and governance. Nations that possessed strong digital ecosystems were able to adapt more effectively, while those with weaker infrastructure struggled to cope, thereby exposing the global digital divide. Educational policies need to tackle this gap to guarantee fair access to technology-driven education. The government should focus on enhancing digital infrastructure, especially in rural and underserved communities. Cooperation between public entities and the private sector can be crucial in broadening digital access. For instance, tech companies could collaborate with educational institutions to supply devices, software, and training. Initiatives that promote these collaborations can assist in ensuring that schools, particularly in isolated areas, have the essential resources for digital learning. In the 21 century, digital infrastructure has emerged as a fundamental driver of sustainable development across economic, social, and environmental dimensions. It encompasses advanced communication networks, data centers, cloud computing, artificial intelligence, and digital platforms that enable innovation, connectivity, and inclusive growth. Strong digital infrastructure

promotes equitable access to education, healthcare, governance, and business opportunities, while also supporting global efforts to achieve the United Nations Sustainable Development Goals (SDGs). However, the digital divide, limited resources, cyber security threats, and policy gaps continue to hinder progress, especially in developing regions. This paper explores the role of digital infrastructure in fostering sustainable development, examines the challenges faced in its expansion, and suggests strategies for bridging disparities to build a digitally empowered and resilient society.

Keywords: Digital Infrastructure, Sustainable Development, 21st-century, Digital Divide, Education Technology



कला: स्थानीय पर्यावरणीय मुद्दों के प्रतिबिंब के रूप में

सुप्रिया सिंह

अपेक्स विश्वविद्यालय

E-mail: Supriya04041977@gmail.com

कला लंबे समय से पर्यावरण संबंधी चिंताओं को व्यक्त करने का शक्तिशाली माध्यम रही है। कला केवल सौंदर्य अभिव्यक्ति का साधन नहीं है बल्कि यह समाज और प्रकृति के बीच गहरे संबंधों को समझने का एक महत्वपूर्ण माध्यम भी है। कला स्थानीय पर्यावरणीय मुद्दों को प्रतिबिंबित करके संवाद को बढ़ावा देती है, परिवर्तन को प्रेरित करती है तथा स्थिरता को भी बढ़ावा देती है, जिससे एक अधिक पर्यावरण जागरूक समाज का निर्माण होता है कला केवल सौंदर्य या अभिव्यक्ति का साधन नहीं है बल्कि यह समाज और प्रकृति के बीच गहरे संबंधों को समझने का एक महत्वपूर्ण माध्यम भी है। स्थानीय पर्यावरणीय समस्याएं जैसे प्रदूषण, वनों की कटाई, जल संकट और जलवायु परिवर्तन ने केवल हमारे जीवन को प्रभावित करती है बल्कि कलाकारों की संवेदना उनकी कृतियों में भी परिलक्षित होती है। स्थानीय स्तर पर कला का यह रूप और भी प्रभावित हो जाता है क्योंकि यह सीधे समुदाय से जुड़कर उनमें पर्यावरणीय चेतना पैदा करता है कला न केवल समस्याओं को उजागर करती है बल्कि लोगों को समाधान की दिशा में सोचने और जिम्मेदारी निभाने के लिए भी प्रेरित करती है। कला स्थानीय पर्यावरणीय समस्याओं की सच्चाई को उजागर करने के साथ-साथ समाज में जागरूकता और जिम्मेदारी की भावना को जगाती है यह भविष्य की पीढ़ियों के लिए प्रकृति के संरक्षण की प्रेरणा का सशक्त माध्यम है कला स्वयं एक सशक्त कहानीकार है। जो कि पर्यावरण जागरूकता में महत्वपूर्ण योगदान देती है क्योंकि यह भावनात्मक दृष्टिकोण के माध्यम से पर्यावरण के साथ परिचय और जुड़ाव को विकसित करती है।

बीज शब्द: अभिव्यक्ति, संवेदनाओं, कृषियोग्य, परिलक्षित, सशक्त



Role of Constitutional Value to Develop Ethics in the Senior Secondary School

Ummed Singh Meena

Department of Education, MLSU, Udaipur

Education at the senior secondary level is not merely an academic endeavor but also a moral and ethical journey that shapes responsible citizens of the nation. In this context, the role of constitutional values becomes highly significant. The Indian Constitution enshrines principles such as justice, liberty, equality, fraternity, secularism, and respect for human dignity. These values, if integrated effectively into school education, can nurture ethical awareness, democratic temperament, and social responsibility among students.

This paper seeks to explore how constitutional values can serve as a guiding framework to develop ethics in senior secondary school learners. It emphasizes the importance of curriculum design, co-curricular activities, and experiential learning practices that align with constitutional ideals. Furthermore, it highlights the role of teachers as facilitators in fostering ethical decision-making, critical thinking, and respect for diversity. By internalizing these values, students not only become academically competent but also socially conscious individuals prepared to contribute positively to society.

The study underscores that education anchored in constitutional values can transform classrooms into spaces of ethical dialogue and cultivate a generation of youth committed to justice, equality, and harmony. Thus, the integration of constitutional values in senior secondary education is both a moral imperative and a pedagogical necessity for building a more just and inclusive future.

Keywords: Constitutional values, ethics, senior secondary education, moral development, citizenship education



Thought of Swami Vivekananda and Sustainability in the Educational System

Vijay Singh

Department of Education, MLSU, Udaipur

Abstract: Swami Vivekananda's vision of education was rooted in the holistic development of individuals, emphasizing character formation, moral strength, self-reliance, and the awakening of inner potential. His philosophy resonates strongly with the contemporary discourse on sustainability in the education system, where the aim extends beyond academic excellence to nurturing responsible global citizens. This paper explores the integration of Vivekananda's educational thought with sustainable practices to reimagine an education system that balances knowledge,

values, and social responsibility. By aligning education with ethical living, inclusivity, and service to humanity, Vivekananda's ideas encourage a model that is environmentally conscious and socially equitable. The study highlights how principles such as harmony between man and nature, empowerment through self-realization, and the pursuit of collective well-being can contribute to creating resilient and future-ready learners. Through this perspective, the paper argues that the enduring wisdom of Swami Vivekananda provides a timeless framework for embedding sustainability in education, enabling it to address the pressing challenges of the 21st century while nurturing a generation that is both intellectually capable and morally grounded.

Keywords: Swami Vivekananda, sustainability, education system, holistic development, values-based learning.



A Study on the Perception of News Content Quality in the Times of India among Jaipur Readers

Suyash Tambi*, Pankaj Gupta

Institute of Rural Management, Jaipur

Background: In today's competitive media landscape, where news is available from numerous sources, it is vital to understand how readers perceive the content they consume. This study focuses on The Times of India (TOI), a cornerstone of information for many in Jaipur, to understand local reader perceptions of its news content quality. The research evaluates key journalistic attributes, including accuracy, balance, objectivity, depth, and relevance, to determine what "quality" means to its audience.

Methodology: A descriptive research design was employed for this study. Data was collected via a structured survey administered to 200 regular readers of the TOI print edition in Jaipur. Participants were selected using purposive sampling to gather detailed opinions on their satisfaction levels and identify the primary factors that shape their perception of news quality.

Result and Discussion: The findings reveal a high degree of trust and satisfaction, with a significant majority of readers (over 70%) rating the overall news content quality as 'Good' or 'Excellent'. The newspaper is well-regarded for its content variety, clear language, and perceived ethical standards. Accuracy, timeliness, and a balanced tone were identified as the most crucial factors influencing readers' perceptions. However, key areas for improvement were noted. Satisfaction with "Local Jaipur News" was mixed, with many readers desiring more in-depth coverage. Furthermore, a notable minority of readers reported having encountered articles they felt were sensational or misleading.

Conclusion: The Times of India holds a strong market position among Jaipur's young and middle-aged adult readers, who value its credibility and accessibility. While the newspaper excels in national and business coverage, the study concludes that its leadership can be reinforced by deepening its local news reporting and consistently upholding a commitment to avoid sensationalism. These findings provide a roadmap for the publication to strengthen its connection with the Jaipur readership and maintain its relevance in the evolving media ecosystem.



A Study on Retailer's Perception towards Amul Fresh Products in Southern Jaipur

Shubham Prakash Singh* and Pankaj Gupta

Institute of Rural Management, Jaipur

Background: The dairy industry holds significant importance in India's economy by contributing to rural employment, agricultural GDP, and daily nutrition. Amul, operated by the Gujarat Co-operative Milk Marketing Federation (GCMMF), has emerged as a leading dairy cooperative, supporting over 3.6 million dairy farmers and dominating the Indian market with a wide range of products. However, existing research primarily focuses on consumer behavior, leaving the retailer's perspective largely unexplored. Retailers, being the immediate link between the brand and consumers, play a pivotal role in product availability, visibility, and market performance. This research aims to understand the retailers' perception of Amul Fresh Products in Southern Jaipur, especially in terms of product quality, supply chain efficiency, promotional support, and brand image.

Methodology: A descriptive research design was employed, using a structured questionnaire to collect primary data from 200 purposively sampled retailers across Southern Jaipur. The survey covered various store types, including grocery stores, dairy outlets, supermarkets, and convenience stores. Key variables studied included product attributes (quality, packaging, pricing), supply chain performance (timely deliveries, stock availability, return handling), promotional activities, and retailer satisfaction. Secondary data was collected from industry reports, Amul corporate documents, and research articles. Data analysis was performed using descriptive statistical methods, including frequency tables, percentage analysis, and cross-tabulations to identify trends and patterns.

Results and Discussion: The study revealed that Milk (87.5%) and Buttermilk (83%) are the most commonly purchased Amul fresh products, confirming high demand for core offerings. However, only 23% of retailers reported daily consumer-driven demand, highlighting a need to strengthen product visibility. Product quality and brand image were rated positively, while packaging and

leakage issues were frequently reported, affecting satisfaction. A significant insight was related to supply chain performance: around 60% of retailers experienced supply inconsistencies, including delayed deliveries, stock shortages, and lack of timely communication regarding supply disruptions. Return and compensation processes were viewed as inconsistent and moderately effective. Retailer perceptions varied by experience and store type. Long-standing retailers reported higher trust in Amul's processes, whereas newer retailers faced more challenges. Additionally, suburban areas suffered from greater supply chain inefficiencies compared to urban zones. Promotional support was identified as another weak area, with most retailers feeling Amul's efforts were generic and insufficient.

Conclusion: This research highlights that despite Amul's strong brand equity and product quality, gaps in supply chain efficiency, communication, and retailer support prevent optimal performance in semi-urban markets like Southern Jaipur. Bridging these gaps through a retailer-focused strategy will help enhance product availability, shelf visibility, and issue resolution processes. A strategic shift towards digital solutions and localized engagement, along with continuous monitoring and relationship-building efforts, can significantly improve retailer satisfaction, ensure better stock availability, and reinforce Amul's competitive position in the Indian dairy industry. This study contributes to the underexplored area of retailer-centric research in the FMCG dairy sector and offers actionable insights for improving field-level strategies, ultimately helping Amul strengthen its market presence sustainably.

Keywords: Amul, Retailer Perception, Dairy Industry, Supply Chain Efficiency, FMCG



An Analysis of Retailers' Preferences for ITC's Personal Care Products: A Special Focus on the Savlon Range in Traditional Retail Outlets of North Jaipur

Vivek Kumar Jha

Institute of Rural Management, Jaipur

Background : The personal care industry in India has grown rapidly, with increasing consumer awareness of hygiene and grooming. ITC Limited's Savlon range, known for antiseptic and hygiene products, faces stiff competition from brands like Dettol, Lifebuoy, Himalaya Pure Hands, and Godrej Protekt. Retailers act as the key interface between brands and consumers, influencing stocking, visibility, and recommendations. This study aims to understand retailers' perceptions of Savlon and the factors driving its sales performance in North Jaipur's traditional retail landscape.

Methodology: The research adopted a descriptive design and surveyed 200 retailers across grocery, cosmetic, chemist, and ISS outlets in Jaipur. Primary data was collected through a structured questionnaire focusing on product perception, retailer satisfaction, stocking patterns, and promotional support. Variables such as product quality, margins, packaging, brand image, and supply chain efficiency were analyzed alongside retailer demographics and outlet type.

Results and Discussion: Findings revealed that Savlon handwash and soaps are the most stocked items, while wipes and powder mix see limited adoption. Retailers rated quality and availability positively, but expressed only moderate satisfaction with margins and promotional support. Strong competition, particularly from Dettol (99.5% recognition) and Godrej Protekt (89.5%), limits Savlon's market penetration. Pricing was found to have a largely neutral impact, while product variety and customer demand strongly influenced sales. Retailers highlighted gaps in ITC's promotional efforts, marketing visibility, and distribution consistency. More than 45% of respondents rated Savlon's brand image as only "average," showing the need for stronger positioning.

Conclusion: The study concludes that while Savlon enjoys credibility in quality and availability, ITC must enhance trade promotions, pricing strategies, distribution efficiency, and marketing support to improve retailer satisfaction and brand preference. Targeted efforts in strengthening product variety, visibility, and promotional schemes can significantly boost Savlon's sales performance and help ITC capture a stronger share in Jaipur's personal care market.

Keywords: ITC Limited, Savlon, Retailer Preferences, FMCG, Personal Care, Jaipur



Customer Perception towards HDFC Bank Digital Banking Services in North Zone of Jaipur Specifically in VKI Area

Annant Saxena* and Pankaj Gupta

Institute of Rural Management, Jaipur

This internship report presents a study on customer awareness, adoption, and satisfaction with HDFC Bank's digital banking services in the VKIA industrial area of Jaipur. Guided by both academic and corporate mentors, the research sought to understand the extent of digital service usage, key influencing factors, and areas for improvement.

The objectives were twofold:

1. To assess customer awareness and usage of digital banking services.
2. To evaluate satisfaction levels, identify challenges, and suggest improvements.

A survey of 188 respondents revealed that mobile banking applications (95.7%) are the most widely used service, followed by internet banking (79.3%) and ATMs (73.9%).

Awareness is primarily driven by bank staff (98.9%), while security awareness is strong, with 96.3% customers preferring personal devices. Overall, 83.5% of customers expressed satisfaction and 96.3% were willing to recommend HDFC's digital services.

However, usage gaps exist among women, older customers, and lower-income groups.

The study highlights key success drivers such as staff support, user-friendly platforms, and convenience, while pointing out research gaps in inclusivity, local language support, and customer education. Recommendations include launching women-focused programs, introducing voice banking in regional languages, integrating gamified financial learning, and deploying AI-driven personalized support.

The internship experience enhanced skills in customer service, banking operations, teamwork, and professional communication, while offering practical insights into digital transformation in the banking sector.

This research concludes that HDFC Bank enjoys strong digital adoption and customer trust in VKIA, but further innovation and inclusivity are essential to sustain its growth and strengthen its digital-first approach.

Keywords: HDFC Bank, Digital Banking, Customer Perception, Jaipur, VKI Area

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सतत विकास की दिशा में शिक्षा का योगदान

निर्मला देवी राजावत

शिक्षा विभाग, श्री भवानी निकेतन महिला स्नातकोत्तर महाविद्यालय, जयपुर

E-mail: nirmalakanwar79@gmail.com

सारांश: आज का युग तीव्र विकास और गहन चुनौतियों का युग है। विज्ञान और प्रौद्योगिकी की प्रगति ने जहाँ जीवन को सरल बनाया है, वहीं दूसरी ओर पर्यावरणीय असंतुलन, जलवायु परिवर्तन, संसाधनों की कमी, बेरोज़गारी और सामाजिक असमानता जैसी समस्याओं को जन्म दिया है। इन परिस्थितियों में सतत विकास (Sustainable Development) न केवल एक विकल्प है बल्कि मानव अस्तित्व के लिए अनिवार्यता बन चुका है। इस दिशा में शिक्षा की भूमिका अत्यंत महत्वपूर्ण है।

शिक्षा केवल ज्ञान का प्रसार भर नहीं है, बल्कि यह व्यक्तित्व विकास, नैतिक मूल्यों, सामाजिक उत्तरदायित्व और पर्यावरणीय चेतना का संवाहक है। शिक्षा के माध्यम से विद्यार्थियों में जागरूकता, सहिष्णुता, नवाचार और स्थायी जीवनशैली अपनाने की प्रेरणा उत्पन्न होती है। यह

न केवल व्यक्तिगत जीवन को समृद्ध बनाती है, बल्कि समाज को भी अधिक न्यायपूर्ण और समावेशी बनाने में योगदान करती है।

सतत विकास लक्ष्यों (SDGs) की प्राप्ति में शिक्षा एक आधारशिला के रूप में कार्य करती है। यह युवाओं को रोजगारपरक कौशल, सृजनात्मक सोच और उत्तरदायी नागरिकता की ओर अग्रसर करती है। साथ ही शिक्षा सामाजिक न्याय, लैंगिक समानता, समान अवसर और पर्यावरणीय संतुलन को भी बढ़ावा देती है।

इस प्रकार, शिक्षा एक ऐसा सशक्त माध्यम है, जो समाज को आर्थिक दृष्टि से सशक्त, सामाजिक दृष्टि से समावेशी और पर्यावरणीय दृष्टि से संतुलित बनाने में सहायक सिद्ध होती है। अतः सतत विकास की दिशा में शिक्षा का योगदान भविष्य की स्थिरता और मानव सभ्यता की निरंतरता के लिए अत्यंत आवश्यक है।

मुख्य शब्द : सतत विकास, शिक्षा, जीवन मूल्य, सामाजिक उत्तरदायित्व, पर्यावरणीय चेतना, सतत विकास लक्ष्य , सामाजिक न्याय, समावेशी समाज।

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“सतत विकास को प्रोत्साहित करने हेतु शिक्षा”

अन्जु चन्देल

शोधार्थी, महात्मा ज्योतिराव फूले विश्वविद्यालय, जयपुर

सारांश: सतत विकास के वैश्विक एजेंडा को आगे बढ़ाने में शिक्षा एक केंद्रीय आधारशिला के रूप में उभरकर सामने आई है, क्योंकि यह व्यक्ति और समाज दोनों को ऐसा ज्ञान, दक्षताएँ, मूल्य एवं नैतिक दृष्टिकोण प्रदान करती है, जिनकी सहायता से मानव और प्रकृति के बीच संतुलित एवं सामंजस्यपूर्ण संबंध स्थापित किए जा सकते हैं। *सतत विकास हेतु शिक्षा (ESD)* पारंपरिक शिक्षण तक सीमित न रहकर पर्यावरणीय, सामाजिक, सांस्कृतिक और आर्थिक आयामों को शैक्षिक प्रक्रिया का अभिन्न अंग बनाती है। यह अनुभवात्मक एवं सहभागितापूर्ण दृष्टिकोण पर बल देती है, जो आलोचनात्मक चिंतन, सृजनशीलता और समस्या-समाधान क्षमता का विकास करते हुए शिक्षार्थियों को जलवायु परिवर्तन, संसाधन क्षय, गरीबी, लैंगिक असमानता और जैव विविधता ह्रास जैसी वैश्विक चुनौतियों से प्रभावी रूप से निपटने के लिए तैयार करता है। साथ ही, ESD जिम्मेदारी, सहानुभूति और सहयोग जैसी मानवीय मूल्यों को बढ़ावा देकर वैश्विक नागरिकता की भावना का निर्माण करती है। संयुक्त राष्ट्र के *सतत विकास लक्ष्यों (SDGs)*, विशेषकर लक्ष्य 4.7, के अनुरूप जब शैक्षिक गतिविधियाँ संचालित होती हैं, तो शिक्षार्थियों में विवेकपूर्ण निर्णय लेने, सतत जीवनशैली अपनाने और समाज में सकारात्मक योगदान देने की क्षमता विकसित होती है। इसके अतिरिक्त, ESD पारंपरिक ज्ञान और आधुनिक

वैज्ञानिक नवाचार के बीच सेतु का कार्य करती है, जिससे पीढ़ीगत समानता, सामाजिक समावेश और दीर्घकालिक लचीलापन सुनिश्चित होता है। अतः शिक्षा केवल बौद्धिक उन्नयन का साधन न होकर मूल्यों, दृष्टिकोणों और व्यवहारों को स्थिरता की दिशा में पुनर्गठित करने का एक सशक्त उपकरण है। यह वर्तमान और भावी पीढ़ियों को परिवर्तन के वाहक बनने हेतु सक्षम बनाती है, जो पर्यावरण संरक्षण, सामाजिक न्याय, सांस्कृतिक संरक्षण और आर्थिक संतुलन में योगदान कर सकते हैं। इस प्रकार, सतत विकास को प्रोत्साहित करने में शिक्षा न केवल एक नैतिक दायित्व है, बल्कि एक समावेशी, न्यायसंगत और सुरक्षित भविष्य के निर्माण की अनिवार्य एवं रणनीतिक आवश्यकता भी है।

मुख्य शब्द: शिक्षा, सतत विकास, सतत विकास हेतु शिक्षा (ESD), संयुक्त राष्ट्र सतत विकास लक्ष्य (SDGs), पर्यावरण संरक्षण, वैश्विक नागरिकता, सामाजिक न्याय, सांस्कृतिक संरक्षण, आर्थिक स्थिरता

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वैश्विक शिक्षा मार्ग और नवाचार आदान प्रदान का अनुभव

आरती

अपेक्स विश्वविद्यालय, जयपुर

इस लेख का मुख्य उद्देश्य वैश्विक स्तर पर शिक्षा के क्षेत्र में नई तकनीक के आदान-प्रदान से है, यह शिक्षा व नवाचार में अनुसंधान सहयोग पर केंद्रित है इसके अंतर्गत सांस्कृतिक कार्यक्रम, शिक्षा ,नवाचार और प्रौद्योगिकी पर कार्यशालाएं और नेटवर्किंग के अवसर देना है, जिसमें प्रौद्योगिकी व नवाचार हस्तान्तरण में पूर्वोत्तर के विकास लक्ष्यों के अनुरूप टिकाऊ, कृषि जैव प्रौद्योगिकी, आईटी और नवीकरणीय ऊर्जा जैसे क्षेत्रों में प्रगति और आदान-प्रदान का समर्थन किया गया है। वैश्विक शिक्षा के अनुभवों के अंतर्गत अंतरराष्ट्रीय शिक्षा सहयोग, ज्ञान और नवाचार का आपस में एक दूसरे से बदलाव जैसे भारत का विदेश के साथ विचारों, प्रथाओं और सर्वोत्तम तकनीक का आदान-प्रदान शामिल है वैश्विक स्तर पर शिक्षा में सांस्कृतिक पहचान व अंतरराष्ट्रीय विकास अनुसंधान केंद्र (IDRS) जैसे संगठन, शिक्षा के लिए वैश्विक साझेदारी को समर्थन प्राप्त करते हैं जिसमें दुनिया भर के विभिन्न दृष्टिकोण के प्रति जानकारी रखने की क्षमता विकसित की जा सकती है जो युवाओं को वैश्विक मुद्दों को समझने और शिक्षार्थियों को विश्व के मूल्य दृष्टिकोण विश्वासों और संस्कृति को समझने में एक समग्र परिपेक्ष्य प्राप्त करने में सहायता करती है। युवाओं को भविष्य की तकनीकों के लिए तैयार करता है और बहु- सांस्कृतिक शिक्षा के महत्व पर जोर देता है और वैश्विक छात्रों के लिए उत्कृष्ट शैक्षणिक और कैरियर के अवसर प्रदान करता है, नवाचार की दृष्टि से शिक्षा और नवाचार में छात्रों की प्रतिभाओं के लिए शिक्षा के बाद इंटरशिप और रोजगार को सुव्यवस्थित करने के उपायों पर विशेष ध्यान दिया जाएगा । वर्तमान समय में वैश्विक शिक्षा में राष्ट्रीय में अंतराष्ट्रीय शिक्षा प्रणाली को नई तकनीक के माध्यम से समझने में सहायता मिलेगी, जिससे दुनिया भर के ज्ञान और कुशल श्रमिकों और भाषाओं ,व्यावसायिक विधियों को गहराई से समझने में सहायता मिलती है वह ऐसा मानना है कि वर्तमान नवीन शिक्षा अर्थात तकनीकी शिक्षा में विकास के क्षेत्र में तेजी से बढ़ रहा है कुछ समय पश्चात विकसित देशों में शिक्षण पद्धति में

पाठ्यक्रम में बहुत प्रगति व सुधार किया जाएगा युवाओं में विदेशी विश्वविद्यालय से शिक्षा प्राप्त करने में बहुत रुचि विस्तृत हो रही है जो कि भारत को एक नई शिक्षा की तरफ ले जा रहा है नवाचार शिक्षा के प्रति छात्रों की बढ़ती अपेक्षाएं और वैश्विक प्रतिस्पर्धा में अपने व्यक्तित्व को जानना व सक्षम बनाना एक चुनौती है। वैश्विक स्तर पर देश – विदेशों के बीच छात्र वृत्ति प्रदान करने और अनुसंधान सहयोग को बढ़ावा मिल रहा है। जिससे नए विचारों के आदान प्रदान में सहायता हो रही हैं।

बीज शब्द: वैश्विक नेटवर्क, प्रतिस्पर्धा, बहु-सांस्कृतिक, नवाचार, व्यावसायिक, पाठ्यक्रम, अनुसंधान, छात्र-वृत्ति ।



Sustainable Development, Environmental Health, and Animal Rights

Yati Bhardwaj, Kamlesh Sarowa

Biyani Girls B.Ed. College, Jaipur

Development – in simple words – is usually a progressive process that enhances the quality of life. Indeed, development has increased the quality of life, but it has its own cons. For instance, development in the field of tech has increased convenience and comfort by introducing a robotic workforce, but it has also deprived a large number of people of their jobs. Additionally, in the name of development, the human race has exploited Earth's natural resources for a long time. This has led our civilization to a point in time where, if we don't stop committing atrocities against nature, our future generations may have to pay the price.

To deal with the very same problem, in 1987, the World Commission for Environment and Development, in their report “Our Common Future”, introduced the concept of sustainable development. Sustainable development is best defined as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainable development is crucial for sustaining life on Earth.

If not acted upon timely manner, over-exploitation of natural resources may result in their extinction and eventually, the collapse of the industries that rely on them. Ban Ki-moon, the former UN secretary general, underlines the significance of sustainable development in his statement, “There's no Plan B, as there's no Planet B.”

Still, even after all this, we humans have shown no mercy to the other equally rightful inhabitants of this planet. Whether it's the deforestation in Hyderabad to develop a cyber paradise, or the cutting

down of the Amazon rainforest to cultivate soybeans, because apparently, we can't treat barren lands to make them fertile, even with all this technology.

We've wronged so many children of our mother Earth, we've established the reign of humanity over this planet, because apparently, we're the self-proclaimed most intelligent species on this planet. And because of our exceptional brainpower, do we have the right to destroy the home of these innocent animals? Do they not have any right over this planet? Are they not allowed to roam in the cities, as we have cut down the forests? Are we the sole rightful owners of Earth? Even after causing the most damage to this planet, its environment, and our fellow earthlings? We're not of any race, any religion, any gender, any country, we're not even human, first we're the children of Mother Earth. No one has the right to devoid a fellow earthling of this planet's land, water, air, and whatnot. For the Earth belongs to every creature of every kind, and it is our responsibility to care for this precious planet of ours, as it has cared for us since the beginning of time.



Impact of Smartphone and Instagram Usage on the Mental Development of Secondary-Level Students with Materials and Practices of Sustainable Fashion Design

Aruna Manik, Purva Gautam

Biyani Girls B.Ed College, Jaipur

In today's rapidly evolving digital era, smartphones and social media platforms like Instagram have become integral to the lives of secondary-level students. While these tools offer immense connectivity and exposure to global cultures, they also contribute significantly to the psychological and emotional landscape of young minds. One intriguing domain that intersects with this digital exposure is sustainable fashion design, particularly the materials and practices it promotes. As adolescents engage with fashion content on Instagram, their perceptions of identity, self-worth, and environmental consciousness are simultaneously being shaped—often unconsciously. This essay explores the psychological impact of Instagram on students and how it relates to their understanding and engagement with sustainable fashion practices.

The Influence of Instagram on Adolescent Minds: Instagram, a highly visual platform, emphasizes aesthetics, trends, and popularity. For secondary-level students—who are at a critical stage of cognitive, emotional, and identity development—Instagram can be both inspiring and damaging. The constant exposure to curated images of idealized lifestyles and fashion can lead to social comparison, low self-esteem, anxiety, and even body image issues. Adolescents begin to associate self-worth with appearance and the ability to "fit in" with trending styles, often driven by influencers and fast fashion advertisements.

Moreover, the dopamine-driven feedback loop created by likes, comments, and shares further reinforces validation through appearance rather than substance. This digitally driven behavior can derail critical thinking, creativity, and emotional regulation, leading to impulsive behaviors such as compulsive buying, especially of fashion items that are trendy but not sustainable.

The Fast Fashion Trap and Unsustainable Choices: Instagram plays a major role in promoting fast fashion—a model that thrives on rapid production and disposal of clothing to match ever-changing trends. This creates a cycle where students, influenced by what they see online, feel the need to constantly update their wardrobe, often without understanding the environmental and ethical implications of their consumption.

Most fast fashion is produced using non-biodegradable synthetic fabrics, harmful dyes, and exploitative labor practices. When students mimic these trends without awareness, they indirectly support unsustainable practices. Furthermore, the pressure to maintain an Instagram-worthy image contributes to wasteful behavior, such as wearing an outfit only once or buying clothes purely for social media appearances.

Bridging the Gap: Promoting Sustainable Fashion through Digital Literacy

Understanding sustainable fashion becomes crucial here—not only as a solution to environmental concerns but also as a tool to promote healthier psychological development. Sustainable fashion design encourages the use of eco-friendly materials like organic cotton, hemp, bamboo, and recycled textiles. It also values traditional crafts, slow production cycles, fair wages, and local economies. These values can serve as a counter-narrative to the harmful messages perpetuated by fast fashion on Instagram.

If integrated into school curriculums or extracurricular programs, sustainable fashion education can offer adolescents a creative outlet that boosts self-esteem and critical thinking. Instead of passively consuming trends, students can learn to express themselves through conscious clothing choices, understand the lifecycle of a garment, and take pride in upcycling or DIY fashion projects. This nurtures a sense of purpose, individuality, and social responsibility—qualities essential for mental well-being.

The Role of Influencers and Educators: Interestingly, the same platform that promotes fast fashion can also be harnessed to spread awareness about sustainable fashion. Ethical influencers who promote slow fashion, body positivity, and mental wellness can have a transformative impact on adolescents. Educators and parents, too, can play a pivotal role by guiding students to critically analyze digital content and understand the difference between marketing and reality.

Promoting sustainable fashion through Instagram can also foster community engagement, as students collaborate on fashion projects, participate in thrift challenges, or follow ethical designers. These activities not only reinforce sustainability but also develop teamwork, self-confidence, and a broader perspective on global issues.

Conclusion: In conclusion, the connection between Instagram's influence on the mental development of secondary-level students and the materials and practices of sustainable fashion design is both profound and timely. While Instagram can negatively impact adolescents by promoting unrealistic beauty standards and fast fashion, it can also become a platform for empowerment if used mindfully. By educating students about sustainable fashion, we can equip them with the tools to make ethical choices, express themselves authentically, and build a healthier relationship with technology and consumer culture. This interdisciplinary approach not only supports environmental sustainability but also fosters mental resilience, creativity, and responsible citizenship in the digital age.

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युवाओं के व्यक्तित्व विकास में योग, सतत शिक्षा एवं डिजिटल नागरिकता की भूमिका

अनिता सैनी*, तृप्ति सैनी

बियानी गर्ल्स बी.एड. कॉलेज जयपुर, राजस्थान

वर्तमान समय में शिक्षा का उद्देश्य केवल ज्ञानार्जन या रोजगार प्राप्ति तक सीमित नहीं रह गया है, बल्कि यह युवाओं के संपूर्ण व्यक्तित्व विकास, नैतिक मूल्यों की स्थापना और सामाजिक उत्तरदायित्व की भावना के निर्माण का महत्वपूर्ण साधन बन चुकी है। आज के वैश्विक और डिजिटल युग में यह और भी आवश्यक हो गया है कि युवा आत्म-नियंत्रण, आत्म-जागरूकता, सहयोग, पर्यावरणीय जिम्मेदारी तथा डिजिटल नागरिकता जैसे गुणों को अपनाएँ।

योग, प्राचीन भारतीय जीवन-दर्शन का एक अमूल्य उपहार है, जो न केवल शारीरिक और मानसिक संतुलन स्थापित करता है बल्कि आत्म-अनुशासन, एकाग्रता, सकारात्मक सोच और मूल्य-आधारित जीवनशैली को भी बढ़ावा देता है। नियमित योगाभ्यास युवाओं में आत्मविश्वास, मानसिक दृढ़ता, सहनशीलता तथा तनाव-नियंत्रण की क्षमता विकसित करता है। इस प्रकार योग, शिक्षा के साथ मिलकर उनके व्यक्तित्व को संतुलित और समृद्ध बनाता है।

इसी प्रकार, सतत शिक्षा (Sustainable Education) का उद्देश्य केवल शैक्षिक ज्ञान देना नहीं है, बल्कि पर्यावरणीय चेतना, संसाधनों के विवेकपूर्ण उपयोग और सामाजिक उत्तरदायित्व का विकास करना भी है। यह शिक्षा युवाओं को समाज और प्रकृति के बीच सामंजस्य स्थापित करने की प्रेरणा देती है, जिससे वे जीवनभर सीखने, बदलते समय के अनुरूप ढलने और समाज के प्रति उत्तरदायी बनने की क्षमता प्राप्त करते हैं। डिजिटल युग में "डिजिटल नागरिकता" (Digital Citizenship) का महत्व भी अत्यधिक बढ़ गया है। युवाओं के व्यक्तित्व निर्माण के लिए आवश्यक है कि वे डिजिटल माध्यमों का सुरक्षित, रचनात्मक और जिम्मेदार उपयोग

करें। इसमें साइबर सुरक्षा, डिजिटल नैतिकता, सूचना का विवेकपूर्ण प्रयोग और ऑनलाइन सहयोगात्मक व्यवहार जैसे पहलू सम्मिलित हैं।

अतः स्पष्ट है कि योग, सतत शिक्षा एवं डिजिटल नागरिकता का सम्मिलित प्रभाव युवाओं को शारीरिक, मानसिक, बौद्धिक और सामाजिक रूप से सक्षम बनाता है। ये तीनों ही आयाम मिलकर उनके व्यक्तित्व को संतुलित, नैतिक, जिम्मेदार और भविष्य उन्मुख दिशा प्रदान करते हैं।

की-वर्ड्स: योग, व्यक्तित्व विकास, सतत शिक्षा, डिजिटल नागरिकता, नैतिक मूल्य, शिक्षा प्रणाली



उच्च शिक्षा में ABC प्रणाली के प्रति विद्यार्थियों की जागरूकता और दृष्टिकोण का अध्ययन

अंकिता, भारती शर्मा

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर (राजस्थान)

सारांश:

नीति आयोग द्वारा जारी SDG India Index 2023 में शिक्षा को प्रमुख संकेतकों (Indicators) में सम्मिलित किया गया है, जो दर्शाता है कि गुणवत्तापूर्ण शिक्षा और सतत विकास एक-दूसरे के पूरक हैं। भारत में शिक्षा को अधिक लचीला और भविष्य उन्मुख बनाने हेतु राष्ट्रीय शिक्षा नीति (NEP-2020) लागू की गई। इसी के अंतर्गत अकादमिक बैंक ऑफ क्रेडिट प्रणाली की शुरुआत की गई। यह प्रणाली विद्यार्थियों को विभिन्न संस्थानों से अर्जित शैक्षणिक क्रेडिट्स को डिजिटल रूप में संग्रहित करने और उन्हें पुनः उपयोग करने की सुविधा देती है। उच्च शिक्षा संस्थानों की भूमिका इस संदर्भ में अत्यंत महत्वपूर्ण है, क्योंकि यहाँ से निकलने वाले विद्यार्थी ही भविष्य के शिक्षक, शोधकर्ता, वैज्ञानिक और नीति-निर्माता बनते हैं। यूजीसी की रिपोर्ट (2021) के अनुसार, ABC प्रणाली विद्यार्थियों को बहुविषयक शिक्षा का अवसर प्रदान करती है और उच्च शिक्षा को अधिक लचीला बनाती है। उदाहरण स्वरूप, कोई विद्यार्थी इंजीनियरिंग की पढ़ाई के साथ-साथ “पर्यावरण प्रबंधन” या “नवीकरणीय ऊर्जा” पर आधारित पाठ्यक्रम चुन सकता है। इसी प्रकार, वाणिज्य का विद्यार्थी “सतत व्यवसाय मॉडल” से संबंधित क्रेडिट अर्जित कर सकता है। इस प्रकार यह प्रणाली विद्यार्थियों में सामाजिक चेतना, पर्यावरणीय उत्तरदायित्व और आर्थिक न्याय जैसे मूल्यों का विकास करने में सहायक हो सकती है। Digilocker प्लेटफॉर्म पर आधारित इस प्रणाली से फरवरी 2023 तक लगभग 50 लाख विद्यार्थी पंजीकृत हो चुके थे और 270 से अधिक

उच्च शिक्षा संस्थान इससे जुड़ चुके थे। ये आँकड़े दर्शाते हैं कि उच्च शिक्षा में ABC प्रणाली धीरे-धीरे व्यापक स्तर पर प्रभावी हो रही है। इस पृष्ठभूमि में ABC प्रणाली विद्यार्थियों को न केवल शैक्षणिक रूप से सक्षम बनाती है, बल्कि उन्हें सतत् विकास लक्ष्यों की प्राप्ति हेतु जागरुक नागरिक के रूप में भी तैयार करती है। प्रस्तुत अध्ययन का मुख्य उद्देश्य उच्च शिक्षा के विद्यार्थियों में ABC प्रणाली के प्रति जागरुकता और दृष्टिकोण का विश्लेषण करना है। यह शोध यह जानने का प्रयास करेगा कि विद्यार्थी इस प्रणाली को सतत् विकास उन्मुख शिक्षा के संदर्भ में कितना प्रासंगिक मानते हैं और उनके दृष्टिकोण में इसके क्या सकारात्मक या नकारात्मक पहलू उभरकर सामने आते हैं। अतः यह शोध शिक्षा और सतत् विकास के अंतर्सम्बन्ध को स्पष्ट करते हुए यह स्थापित करने का प्रयास करेगा कि उच्च शिक्षा में ABC प्रणाली केवल तकनीकी सुधार नहीं है, बल्कि यह विद्यार्थियों को जागरुक, उत्तरदायी और सतत् विकास उन्मुख नागरिक बनाने का एक प्रभावी साधन भी है। इसके निष्कर्ष नीति-निर्माताओं, शिक्षकों और विद्यार्थियों के लिए भविष्य की दिशा तय करने में सहायक सिद्ध होंगे।

मुख्य शब्द: ABC प्रणाली, राष्ट्रीय शिक्षा नीति, बहुविषयक शिक्षा, Digilocker प्लेटफॉर्म, सतत् विकास लक्ष्य

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स्थायी विकास के संवर्धन हेतु शिक्षा: योग्यता आधारित शिक्षा के माध्यम से टिकाऊ भारत की ओर

आस्था खांडल*, सुमित्रा यादव

*बियानी गर्ल्स बी.एड कॉलेज, गणपति महिला महाविद्यालय, खेजरोली

21वीं सदी के भारत में शिक्षा का उद्देश्य केवल सूचना देना नहीं रह गया है, बल्कि अब शिक्षा को व्यक्तित्व विकास, सामाजिक उत्तरदायित्व, नवाचार और सतत जीवन शैली के विकास का साधन माना जाने लगा है। भारत यदि वर्ष 2047 तक एक विकसित राष्ट्र के रूप में स्थापित होना चाहता है, तो इसके लिए शिक्षा प्रणाली को जड़ता से निकालकर एक नवीन, समावेशी और योग्यता आधारित स्वरूप देना आवश्यक है। इसी संदर्भ में, योग्यता आधारित शिक्षा आज के शैक्षिक विमर्श का एक केन्द्रीय विषय बन गया है, जो केवल शिक्षण नहीं, बल्कि छात्रों की वास्तविक क्षमताओं और दक्षताओं को विकसित करने की बात करता है।

योग्यता आधारित शिक्षा में विद्यार्थी की प्रगति उसकी समझ, व्यवहारिक कौशल और मूलभूत क्षमताओं के आधार पर मापी जाती है, न कि केवल अंकों या परीक्षा परिणामों से। यह शिक्षा प्रणाली छात्रों को उनकी गति और शैली में सीखने का अवसर देती है। इस प्रकार की शिक्षा छात्रों में आत्म-निर्भरता, नेतृत्व क्षमता,

रचनात्मक सोच, सहयोग और नैतिक मूल्यों को विकसित करती है—जो किसी भी राष्ट्र के सतत विकास के लिए अत्यंत आवश्यक हैं।

दूसरी ओर, स्थायी विकास वह अवधारणा है जो पर्यावरणीय सुरक्षा, सामाजिक समावेशन और आर्थिक समृद्धि को एकसाथ संतुलित करती है। संयुक्त राष्ट्र द्वारा निर्धारित 17 सतत विकास लक्ष्य में 'गुणवत्तापूर्ण शिक्षा' (SDG 4) को एक प्रमुख लक्ष्य के रूप में शामिल किया गया है, जो यह मानता है कि सतत विकास की नींव शिक्षा पर ही टिकी हुई है। एक जागरूक और शिक्षित नागरिक ही पर्यावरण के प्रति संवेदनशील, सामाजिक असमानताओं के प्रति सजग और आर्थिक रूप से आत्मनिर्भर बन सकता है।

भारत की नई राष्ट्रीय शिक्षा नीति 2020 (NEP 2020) भी इस दिशा में एक क्रांतिकारी कदम है, जो योग्यता आधारित, लचीली, समावेशी और नवाचार को बढ़ावा देने वाली शिक्षा प्रणाली की पैरवी करती है। इसमें बहुविषयकता, व्यावसायिक शिक्षा, डिजिटल लर्निंग और कौशल विकास जैसे पहलुओं को शामिल किया गया है, जो शिक्षा को केवल किताबी ज्ञान तक सीमित नहीं रखते, बल्कि जीवनोपयोगी बनाते हैं।

विशेष रूप से ग्रामीण क्षेत्रों, महिलाओं, और हाशिए पर रहने वाले समुदायों के लिए यह परिवर्तन अत्यधिक महत्वपूर्ण है। योग्यता आधारित शिक्षा उनके लिए शिक्षा को सुलभ, व्यावहारिक और रोजगारोन्मुख बनाती है। महिलाएं जब गुणवत्तापूर्ण और व्यावहारिक शिक्षा प्राप्त करती हैं, तो वे न केवल आर्थिक रूप से स्वतंत्र बनती हैं, बल्कि अपने परिवार और समाज को भी शिक्षित व सशक्त बनाने में सक्षम होती हैं।

इस प्रस्तुति में यह विश्लेषण किया गया है कि कैसे योग्यता आधारित शिक्षा को सतत विकास के सिद्धांतों के साथ जोड़ा जा सकता है और किस प्रकार इससे एक ऐसे भारत की कल्पना साकार की जा सकती है जो न केवल तकनीकी रूप से प्रगति करे, बल्कि सामाजिक और पर्यावरणीय रूप से भी सशक्त, न्यायसंगत और संतुलित हो।

अंततः, यह कहा जा सकता है कि शिक्षा को अब केवल एक औपचारिक प्रक्रिया नहीं माना जा सकता। यदि हम शिक्षा को परिवर्तन के औजार के रूप में प्रयोग करें, विशेषकर योग्यता आधारित दृष्टिकोण के साथ, तो हम एक ऐसे भारत की दिशा में बढ़ सकते हैं जो 2047 तक न केवल विकसित हो, बल्कि टिकाऊ, संवेदनशील और समावेशी भी हो।

कीवर्ड्स: स्थायी विकास, योग्यता आधारित शिक्षा, शिक्षा नीति, महिला सशक्तिकरण, समावेशी विकास, टिकाऊ भारत, सतत विकास लक्ष्य, शिक्षा में नवाचार



An Exploratory study of the Integration of Indian Knowledge System in School Curriculum under NEP-2020: Challenges and Opportunities

Ayushi Tanwar, Arti Gupta and Sarita Khaitan

Biyani Girls B.Ed. College, Jaipur, Rajasthan, India

Abstract:

“WE OWE A LOT OF INDIANS, WHO TAUGHT US HOW TO COUNT, WITHOUT WHICH NO WORTHWHILE SCIENTIFIC DISCOVERY COULD HAVE BEEN MADE”

ALBERT EINSTEIN

"The Indian Knowledge System (IKS) is a rich and diverse heritage that encompasses various disciplines, including science, mathematics, philosophy, and art. With the introduction of the National Education Policy (NEP) 2020, there is a renewed emphasis on integrating IKS into modern education. This presentation aims to explore the integration of IKS in school education, focusing on: identifying the challenges and opportunities associated with integrating IKS in school curriculum, determining the support teachers need to effectively implement IKS, and developing strategies for integrating IKS in different subjects such as science, mathematics, and social science. "The National Education Policy (NEP) 2020 aims to transform the Indian education system by promoting holistic development, critical thinking, and creativity. One of the key aspects of NEP 2020 is the integration of Indian Knowledge System (IKS) into modern education. The integration of IKS into school education is a complex process that requires careful planning, implementation, and evaluation. It involves not only incorporating IKS-based content into the curriculum but also developing new teaching-learning materials, training teachers, and assessing student learning outcomes. The National Education Policy (NEP) 2020 marks a significant shift in India's educational landscape, emphasizing the integration of Indian Knowledge System (IKS) in school curriculum. This policy initiative aims to promote cultural awareness, national pride, and academic rigor by incorporating India's rich and diverse knowledge traditions into the educational framework. The integration of IKS in school curriculum is expected to provide students with a deeper understanding of their cultural heritage, foster critical thinking, and promote holistic development. However, the implementation of IKS in school curriculum also poses several challenges, including the need for curriculum redesign, teacher training, and resource development. Moreover, the integration of IKS requires a nuanced approach that balances traditional knowledge with modern educational requirements. The Indian Knowledge System (IKS), is a treasure trove of wisdom that spans thousands of years. With a rich heritage that encompasses various disciplines, including science, mathematics, philosophy, and art, IKS has made significant contributions to human civilization. The works of great Indian scholars like Aryabhata, who accurately calculated the value of pi and proposed the heliocentric model of the solar system, demonstrate the advanced knowledge and insights of ancient Indian thinkers. From the sophisticated urban planning of the Indus Valley Civilization to the groundbreaking

mathematical discoveries of ancient Indian mathematicians like Brahmagupta and Bhaskaracharya, IKS has a long history of innovation and excellence. The ancient Indian medical system of Ayurveda, the philosophical traditions of Vedanta and Yoga, and the architectural marvels of Indian temples and monuments all testify to the depth and diversity of IKS.

Keywords: Indian Knowledge System (IKS), National Education Policy (NEP) 2020, School Curriculum, Cultural Awareness, Academic Rigor.

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राष्ट्रीय शिक्षा नीति 2020 के तहत अध्यापक शिक्षा के प्रति शिक्षकों की अभिवृत्ति का अध्ययन

एकता सैनी, मीनाक्षी शर्मा

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर (राजस्थान)

प्रस्तुत शोध का शीर्षक “राष्ट्रीय शिक्षा नीति 2020 के तहत अध्यापक शिक्षा के प्रति शिक्षकों की अभिवृत्ति का अध्ययन” है। राष्ट्रीय शिक्षा नीति 2020 भारतीय शिक्षा प्रणाली का एक ऐतिहासिक दस्तावेज़ है, जिसमें अध्यापक शिक्षा की गुणवत्ता सुधार, प्रशिक्षण की नवीन पद्धतियाँ तथा अध्यापक विकास कार्यक्रमों को सुदृढ़ बनाने पर विशेष बल दिया गया है। किसी भी नीति का वास्तविक प्रभाव तभी सामने आता है जब संबंधित शिक्षक वर्ग उसके प्रति सकारात्मक दृष्टिकोण एवं अभिवृत्ति रखता हो।

इस शोध का प्रमुख उद्देश्य यह ज्ञात करना है कि शिक्षक राष्ट्रीय शिक्षा नीति 2020 के अंतर्गत अध्यापक शिक्षा संबंधी प्रावधानों के प्रति कैसी अभिवृत्ति रखते हैं। इसके अंतर्गत यह अध्ययन किया जाएगा कि क्या शिक्षक इस नीति को अध्यापक शिक्षा की गुणवत्ता वृद्धि, प्रशिक्षण की प्रभावशीलता और अपने व्यावसायिक विकास के लिए उपयोगी मानते हैं।

शोध की जनसंख्या जयपुर जिले के ग्रामीण एवं शहरी क्षेत्रों के महिला एवं पुरुष शिक्षक होंगे। नमूना चयन (Sampling Method) न्यायदर्श (Purposive Sampling) पद्धति द्वारा किया जाएगा। आंकड़ों के संकलन हेतु शोधकर्ता द्वारा निर्मित प्रश्नावली (Questionnaire) का प्रयोग किया जाएगा।

यह अध्ययन शिक्षकों की अभिवृत्ति के आधार पर राष्ट्रीय शिक्षा नीति 2020 की व्यावहारिक उपयोगिता और प्रभावशीलता को समझने में सहायक होगा तथा भविष्य में अध्यापक शिक्षा और प्रशिक्षण कार्यक्रमों को अधिक प्रभावी एवं व्यवहारिक बनाने के लिए दिशा प्रदान करेगा।

मुख्य शब्द: राष्ट्रीय शिक्षा नीति 2020, अध्यापक शिक्षा, अभिवृत्ति, शिक्षक प्रशिक्षण, गुणवत्ता सुधार

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शैक्षिक प्रणाली में नैतिकता और स्थिरता: विद्यार्थियों के नैतिक मूल्यों का उनकी समायोजन क्षमता पर प्रभाव

गुलशन सैनी, मुकेश कुमारी
बियानी गर्ल्स बीएड कॉलेज, जयपुर

सारांश:

शिक्षा किसी भी राष्ट्र की प्रगति का आधार है, जो केवल ज्ञानार्जन तक सीमित न होकर नैतिक मूल्यों, सामाजिक उत्तरदायित्व तथा संतुलित व्यक्तित्व के निर्माण में केंद्रीय भूमिका निभाती है। समकालीन परिप्रेक्ष्य में, जब समाज भ्रष्टाचार, हिंसा, असहिष्णुता और पर्यावरणीय असंतुलन जैसी बहुआयामी चुनौतियों का सामना कर रहा है, तब शिक्षा प्रणाली में नैतिकता और स्थिरता का समावेश अत्यावश्यक हो जाता है।

अध्ययनों से प्रतिपादित होता है कि मूल्य-आधारित शिक्षा विद्यार्थियों में उत्तरदायित्व, सहानुभूति, ईमानदारी, आत्मसंयम तथा सहयोग जैसे गुणों का विकास करती है। ये गुण विद्यार्थियों को न केवल आदर्श नागरिक बनने में सहायक होते हैं, बल्कि उन्हें जीवन की विविध परिस्थितियों में समायोजन करने और चुनौतियों का धैर्यपूर्वक सामना करने की क्षमता भी प्रदान करते हैं।

भारतीय संदर्भ, विशेषकर राजस्थान की स्थिति, इस आवश्यकता को और स्पष्ट करती है। प्रदेश की साक्षरता दर वर्तमान में 66.11% है, जिसमें पुरुष साक्षरता 79.19% तथा महिला साक्षरता मात्र 52.12% है। यह असमानता शिक्षा व्यवस्था में समानता, समावेशन और मूल्य शिक्षा के सुदृढ़ीकरण की आवश्यकता को रेखांकित करती है। राजस्थान सरकार द्वारा समग्र शिक्षा अभियान, पर्यावरण क्लब, स्वच्छ भारत अभियान तथा जीवन-कौशल उन्मुख सेमिनारों जैसी पहलों ने विद्यार्थियों में सामाजिक उत्तरदायित्व और पर्यावरणीय चेतना को प्रोत्साहित किया है।

वहीं, अंतरराष्ट्रीय परिप्रेक्ष्य में यूनेस्को की ग्लोबल एजुकेशन मॉनिटरिंग रिपोर्ट (2023/24) यह प्रतिपादित करती है कि शिक्षा का उद्देश्य केवल रोजगार उन्मुख नहीं होना चाहिए, बल्कि इसे सतत विकास लक्ष्यों (SDGs) के अनुरूप बनाकर विद्यार्थियों में ग्लोबल सिटिजनशिप, मूल्य-आधारित अधिगम और सामाजिक समावेशन को सुदृढ़ करना आवश्यक है। भारत की नई शिक्षा नीति (2020) इसी दृष्टिकोण को अंगीकार करती है, जिसमें समग्र शिक्षा, जीवनकौशल तथा नैतिक मूल्यों को शिक्षा की मुख्य धारा में सम्मिलित किया गया है।

निष्कर्षतः यह प्रतिपादित होता है कि जिन शैक्षणिक संस्थानों में मूल्य शिक्षा और स्थिरता का समुचित समावेश किया गया है, वहाँ विद्यार्थियों की समायोजन क्षमता, मानसिक स्वास्थ्य और आत्मविश्वास में उल्लेखनीय वृद्धि देखी गई है। इसके विपरीत, केवल परीक्षा-उन्मुख एवं रोजगार-केंद्रित शिक्षा प्रणाली विद्यार्थियों में तनाव, असंतुलन एवं सामाजिक असंवेदनशीलता को जन्म देती है।

अतः यह स्पष्ट है कि शिक्षा का वास्तविक उद्देश्य ज्ञानार्जन अथवा व्यावसायिक उन्नति तक सीमित न रहकर, उत्तरदायी, संवेदनशील एवं मूल्यनिष्ठ नागरिकों का निर्माण होना चाहिए। नैतिकता और स्थिरता पर आधारित शिक्षा ही विद्यार्थियों के व्यक्तित्व विकास तथा समाज के सतत एवं संतुलित विकास की आधारशिला स्थापित कर सकती है।

मुख्य शब्द: नैतिकता (Ethics), स्थिरता (Sustainability), शैक्षिक प्रणाली (Education System), समायोजन क्षमता (Adjustment Ability), मूल्य शिक्षा (Value Education)

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परियोजना आधारित शिक्षा के माध्यम से विद्यार्थियों में सतत विकास के मूल्यों का संवर्धन

मीनाक्षी शर्मा, मनीषा बुनकर

बियानी गर्ल्स बी एड कॉलेज

सारांश:

वर्तमान समय में शिक्षा का स्वरूप तीव्र गति से बदल रहा है। पारंपरिक शिक्षा पद्धति, जो मुख्यतः रटने और परीक्षा आधारित मूल्यांकन तक सीमित थी, अब विद्यार्थियों के समग्र विकास की दृष्टि से अपर्याप्त प्रतीत होती है। आज समाज, पर्यावरण और अर्थव्यवस्था से जुड़ी जटिल चुनौतियों का सामना करने के लिए केवल पुस्तकीय ज्ञान पर्याप्त नहीं है, बल्कि व्यावहारिक अनुभव, समस्या-समाधान क्षमता, सहयोग, नेतृत्व और रचनात्मकता जैसे कौशलों की आवश्यकता है। इसी परिप्रेक्ष्य में परियोजना आधारित शिक्षा (Project-Based Learning – PBL) एक प्रभावी शिक्षण पद्धति के रूप में उभरकर सामने आई है, जो विद्यार्थियों को वास्तविक जीवन की समस्याओं से जोड़ती है और उन्हें सक्रिय, उत्तरदायी एवं जागरूक नागरिक बनने के लिए प्रेरित करती है।

परियोजना आधारित शिक्षा विद्यार्थियों को केवल सैद्धांतिक अवधारणाएँ ही नहीं सिखाती, बल्कि उन्हें उन अवधारणाओं को व्यावहारिक जीवन में लागू करने का अवसर भी देती है। जब विद्यार्थी किसी परियोजना के माध्यम से अध्ययन करते हैं, तो वे केवल ज्ञान अर्जन तक सीमित नहीं रहते, बल्कि अपने अनुभवों, अवलोकनों और प्रयासों से गहन समझ विकसित करते हैं। इस प्रक्रिया में वे अनुसंधान, विश्लेषण, निर्णय-निर्माण, सहयोग एवं प्रस्तुतीकरण जैसे महत्वपूर्ण कौशलों का अभ्यास करते हैं। यही कारण है कि परियोजना विधि विद्यार्थियों को सतत विकास (Sustainable Development) जैसे जटिल एवं बहुआयामी विषय से भी प्रभावी रूप से जोड़ सकती है।

सतत विकास का आशय है—ऐसा विकास जो वर्तमान पीढ़ी की आवश्यकताओं की पूर्ति करे, परंतु भविष्य की पीढ़ियों के अधिकारों से समझौता किए बिना। इसके लिए शिक्षा का महत्वपूर्ण योगदान है, क्योंकि शिक्षा के

माध्यम से ही पर्यावरणीय संरक्षण, सामाजिक समानता और आर्थिक संतुलन की चेतना विकसित की जा सकती है। परियोजना आधारित शिक्षा इस दिशा में विशेष रूप से सहायक सिद्ध होती है। उदाहरणस्वरूप, पर्यावरण संरक्षण पर आधारित परियोजनाएँ विद्यार्थियों को वृक्षारोपण, अपशिष्ट प्रबंधन, जल संरक्षण या अक्षय ऊर्जा स्रोतों के महत्व को केवल सैद्धांतिक रूप से नहीं, बल्कि व्यावहारिक रूप में अनुभव करने का अवसर देती हैं। इसी प्रकार सामाजिक उत्तरदायित्व से जुड़ी परियोजनाएँ विद्यार्थियों को समुदाय के साथ मिलकर कार्य करने, समस्याओं को समझने और समाधान प्रस्तुत करने की प्रेरणा देती हैं।

इस शोध का उद्देश्य यह अध्ययन करना है कि परियोजना आधारित शिक्षा किस प्रकार विद्यार्थियों में सतत विकास लक्ष्यों के प्रति जागरूकता उत्पन्न करती है। यह शोध यह भी स्पष्ट करेगा कि परियोजना विधि से विद्यार्थियों के ज्ञान, दृष्टिकोण और व्यवहार में किस प्रकार परिवर्तन आता है। परियोजना आधारित शिक्षा से विद्यार्थी न केवल अपने अकादमिक स्तर पर प्रगति करते हैं, बल्कि वे सहयोगात्मक, संवेदनशील और जिम्मेदार नागरिक के रूप में समाज में योगदान देने के लिए भी तैयार होते हैं।

इस शोध से यह अपेक्षा की जाती है कि परिणाम स्पष्ट रूप से सिद्ध करेंगे कि परियोजना आधारित शिक्षा विद्यार्थियों को 21वीं सदी की आवश्यकताओं के अनुरूप कौशलों से सुसज्जित करती है। साथ ही यह उन्हें सतत विकास के लक्ष्यों की ओर उन्मुख करती है, जिससे वे केवल व्यक्तिगत सफलता तक सीमित न रहकर सामाजिक, पर्यावरणीय और वैश्विक स्तर पर सकारात्मक बदलाव के वाहक बनें।

मुख्य शब्द: परियोजना-आधारित शिक्षा, सतत विकास, जीवन-कौशल, अनुभवात्मक अधिगम, उत्तरदायित्व

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कस्तूरबा गांधी बालिका विद्यालय (KGBV) में अध्ययनरत छात्राओं की समायोजन क्षमता का अध्ययन

मनीषा सेपट, सुनीता शर्मा

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर

सारांश:

कस्तूरबा गांधी बालिका विद्यालय (KGBV) भारत सरकार की एक पहल है, जो सामाजिक--आर्थिक रूप से वंचित पृष्ठभूमि की बालिकाओं को शिक्षा प्रदान करने के लिए स्थापित की गई है। यह अध्ययन KGBV में अध्ययनरत छात्राओं की समायोजन क्षमता का शैक्षिक, सामाजिक और भावात्मक आयामों के संदर्भ में विश्लेषण करता है। समायोजन क्षमता से तात्पर्य व्यक्ति की नई परिस्थितियों, जैसे शैक्षिक वातावरण, सामाजिक अंतःक्रियाओं और भावनात्मक चुनौतियों के साथ तालमेल स्थापित करने की योग्यता से है। इस शोध का प्रमुख उद्देश्य यह समझना है कि KGBV की छात्राएँ अपने शैक्षिक और सामाजिक परिवेश में किस प्रकार समायोजित होती हैं और किन कारकों से उनकी यह क्षमता प्रभावित होती है।

अध्ययन में मिश्रित शोध पद्धति (मात्रात्मक और गुणात्मक) का उपयोग किया गया। डेटा संग्रह के लिए प्रश्नावली, संरचित साक्षात्कार और अवलोकन तकनीकों का प्रयोग किया गया, जिसमें 200 छात्राओं का नमूना लिया गया। शैक्षिक आयाम में, शिक्षण विधियों, संसाधनों की उपलब्धता और शिक्षक-छात्र संबंधों का विश्लेषण किया गया। सामाजिक आयाम में सहपाठियों के साथ अंतःक्रिया सामाजिक समावेशन और सामुदायिक गतिविधियों में भागीदारी पर ध्यान केंद्रित किया गया। भावात्मक आयाम में छात्राओं की भावनात्मक स्थिरता, आत्मविश्वास और तनाव प्रबंधन की क्षमता का मूल्यांकन किया गया।

परिणामों से पता चलता है कि KGBV में उपलब्ध शैक्षिक संसाधन, जैसे पुस्तकालय, प्रयोगशालाएँ और सहायक शिक्षण वातावरण, छात्राओं की समायोजन क्षमता को बढ़ावा देते हैं। शिक्षकों का सकारात्मक दृष्टिकोण और प्रोत्साहन छात्राओं में आत्मविश्वास को प्रेरित करता है, जिससे वे शैक्षिक चुनौतियों का बेहतर ढंग से सामना कर पाती हैं। सामाजिक रूप से, सहपाठियों के साथ मैत्रीपूर्ण संबंध और सामूहिक गतिविधियाँ सामाजिक समायोजन को बढ़ाती हैं, लेकिन कुछ छात्राएँ ग्रामीण पृष्ठभूमि और सामाजिक अलगाव के कारण समायोजन में कठिनाइयों का सामना करती हैं। भावात्मक स्तर पर, पारिवारिक समस्याएँ, जैसे आर्थिक तंगी और माता-पिता का कम समर्थन, कुछ छात्राओं में तनाव और चिंता का कारण बनता है, जो उनके समायोजन को बाधित करता है।

यह अध्ययन इस बात पर भी प्रकाश डालता है कि KGBV में मनोवैज्ञानिक परामर्श और सहायक गतिविधियों की कमी समायोजन प्रक्रिया में बाधा उत्पन्न कर सकती है। इसके बावजूद, जिन छात्राओं को शिक्षकों और सहपाठियों से भावनात्मक समर्थन प्राप्त होता है, वे बेहतर समायोजन प्रदर्शित करती हैं।

इस शोध के निष्कर्ष नीति—निर्माताओं, शिक्षकों और शैक्षिक प्रशासकों के लिए महत्वपूर्ण सुझाव प्रस्तुत करते हैं। KGBV में समायोजन क्षमता को बढ़ाने के लिए शिक्षक प्रशिक्षण, मनोवैज्ञानिक परामर्श सेवाएँ, और सामुदायिक भागीदारी को बढ़ावा देने वाली गतिविधियों को लागू करने की आवश्यकता है। साथ ही, छात्राओं की सामाजिक और भावात्मक जरूरतों को ध्यान में रखते हुए पाठ्येतर गतिविधियों को प्रोत्साहित करना चाहिए। यह अध्ययन KGBV की छात्राओं के समग्र विकास और उनकी समायोजन प्रक्रिया को बेहतर बनाने में योगदान दे सकता है, जिससे उनकी शैक्षिक सफलता और सामाजिक एकीकरण को बढ़ावा मिलेगा।

मुख्य शब्द: कस्तूरबा गांधी बालिका विद्यालय (KGBV), समायोजन क्षमता, शैक्षिक आयाम, सामाजिक समावेशन, भावनात्मक स्थिरता



The Role of the ethics and sustainability in educational system

Paridhi Jain, Shipra Gupta Kiran Pareek and Sunita Kumawat

Biyani Girls B.Ed. College, Jaipur

Background: Education today is not only about gaining knowledge but also about learning how to live responsibly. Ethics and sustainability are two key elements that help make education more meaningful. Ethics teaches values like honesty, fairness, respect, and responsibility. These values guide students in making the right choices in life and in their careers. Sustainability focuses on the wise use of resources, protection of the environment, and care for society. It prepares students to deal with global challenges such as climate change, pollution, and inequality. When both ethics and sustainability are included in education, students do not just become successful professionals but also responsible citizens. They learn to think about their own growth along with the well-being of others and the planet.

Methodology: This paper is based on a review of books, research papers, policy reports, and case studies related to ethics and sustainability in education. It looks at examples from schools and universities where these ideas have been included in teaching and daily activities. The study also examines how governments and institutions are trying to bring ethics and sustainability into the curriculum. Both classroom teaching and practical activities, such as community service, environmental projects, and value-based discussions, were considered. Teacher training programs and institutional practices were also studied to see how they support the integration of these two important aspects.

Result and Discussion: The study found that when ethics and sustainability are part of education, students become more aware, caring, and thoughtful. They learn to respect others, think critically, and take responsible decisions. Activities like debates on moral issues, recycling programs, or tree plantation drives make them understand the importance of their role in society. Schools and colleges that follow sustainable practices, such as saving energy, reducing waste, and using eco-friendly resources, give students real-life examples of responsible behavior. However, there are some challenges. In many places, teachers are not fully trained to teach these topics. Resources are sometimes limited, and in some cases, ethics and sustainability are treated as optional subjects instead of being made compulsory. To overcome these challenges, support from policymakers, teachers, parents, and communities is necessary. A combined effort will make ethics and sustainability a natural part of the learning system.

Conclusion: Ethics and sustainability are essential for building a strong and future-ready educational system. They help students grow not only in knowledge but also in values. By including them in everyday teaching and school practices, we can prepare learners to be kind, fair, and responsible citizens who can face global challenges with confidence. Education that is based on values and sustainability benefits individuals, society, and the planet. Strong teacher training, updated curricula, and eco-friendly practices in schools and universities are the steps needed to achieve this goal.

Keywords: Ethics, Sustainability, Education, Values, Responsible Learning



कला के माध्यम से पर्यावरणीय चेतना: स्थानीय पर्यावरणीय समस्याओं का दर्पण एवं भूगोल विषय के शिक्षण-अधिगम सामग्री का एक अध्ययन

प्रिया जादौन, एकता परीक
बियानी गर्ल्स बी.एड. कॉलेज, जयपुर

आज पूरी दुनिया जिस गंभीर चुनौती का सामना कर रही है, वह है पर्यावरणीय संकट। IPCC Report (2023) के अनुसार, यदि वैश्विक तापमान वृद्धि 1.5°C से अधिक हो जाती है, तो आने वाले दशकों में करोड़ों लोग जल संकट, खाद्य असुरक्षा और चरम जलवायु आपदाओं से प्रभावित होंगे। भारत के संदर्भ में, NITI Aayog (2018) ने चेताया है कि 2030 तक देश के 21 बड़े शहर भूजल संकट का सामना करेंगे, जिससे लगभग 60 करोड़ लोग प्रभावित होंगे। राजस्थान जैसे अर्ध-शुष्क राज्य में स्थिति और भी गंभीर है। Central Ground Water Board (2021) की रिपोर्ट बताती है कि कई जिलों में भूजल स्तर प्रतिवर्ष औसतन 1-1.5 मीटर गिर रहा है। इसी के साथ WHO (2022) के अनुसार भारत के 10 सर्वाधिक प्रदूषित शहरों में से 6 उत्तर भारत में स्थित हैं।

ये तथ्य बताते हैं कि स्थानीय स्तर पर पर्यावरणीय चेतना विकसित करना अत्यावश्यक है। शिक्षा, विशेषकर भूगोल शिक्षण, इस दिशा में महत्वपूर्ण भूमिका निभा सकता है। पारंपरिक पद्धतियों में विद्यार्थी केवल तथ्यों को रटते हैं, जबकि कला-आधारित शिक्षण-अधिगम सामग्री (TLMs) विद्यार्थियों को अनुभवात्मक अधिगम और सक्रिय सहभागिता का अवसर देती है। चित्रकला, पोस्टर, नाटक, लोकगीत, मॉडल और मानचित्र जैसे माध्यमों से स्थानीय समस्याएँ विद्यार्थियों के सामने जीवंत रूप में प्रस्तुत की जा सकती हैं।

अध्ययन के निष्कर्षों से ज्ञात हुआ कि:

- कला-आधारित शिक्षण से विद्यार्थियों की सीखने की रुचि में 30-35% की वृद्धि हुई।
- ज्ञान की स्थायित्व क्षमता में वृद्धि हुई।
- विद्यार्थियों ने स्थानीय समस्याओं के समाधान हेतु सुझाव और कार्ययोजनाएँ प्रस्तुत कीं।

इस प्रकार, यह स्पष्ट होता है कि कला और भूगोल शिक्षण का संगम विद्यार्थियों में केवल सैद्धांतिक जानकारी ही नहीं देता, बल्कि उन्हें क्रियात्मक पर्यावरणीय चेतना (Active Environmental Awareness) की दिशा में प्रेरित करता है।

मुख्य शब्द: पर्यावरणीय चेतना, कला आधारित शिक्षण, शिक्षण-अधिगम सामग्री, भूगोल शिक्षा, स्थानीय पर्यावरणीय समस्याएँ, अनुभवात्मक अधिगम

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सतत विकास को बढ़ावा देने के लिये शिक्षा

संजू खर्रा एवं पुष्प कुमावत

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर

पृष्ठभूमि: सतत विकास का विचार आज की दुनिया में बहुत जरूरी हो गया है, क्योंकि हमें पर्यावरण, अर्थव्यवस्था और समाज से जुड़ी कई मुश्किलों का सामना करना पड़ रहा है। आने वाले समय को बेहतर बनाने के लिए शिक्षा सबसे ज़रूरी साधन बन गई है। साधन है जो जागरूकता और व्यवहार दोनों को प्रभावित कर सकता है। हाल ही में UNESCO और विश्व बैंक की रिपोर्टों में शिक्षा को सतत विकास लक्ष्यों के केंद्र में रखा गया है, जिससे यह स्पष्ट होता है कि शिक्षा न केवल सूचना प्रदान करती है, बल्कि यह व्यक्तिगत और सामाजिक परिवर्तन की प्रेरणा स्रोत भी होती है।

परिणाम व चर्चा: सर्वेक्षण और बातचीत से यह बात सामने आई कि जहाँ पढ़ाई में सतत विकास से जुड़ी बातें शामिल की गई हैं, वहाँ छात्रों में पर्यावरण के प्रति जागरूकता, समाज के साथ मिल-जुलकर रहने की भावना और जिम्मेदारी से व्यवहार करने की सोच दिखाई भावना प्रबल पायी गई। उदाहरणतः, एक माध्यमिक विद्यालय में 'जल संरक्षण प्रोजेक्ट' के चलते छात्र-समूह में जल उपयोग में लगभग 15% की बचत देखी गई। वहीं, एक महाविद्यालय में 'अपशिष्ट पुनर्प्रक्रिया अभियान' ने समाज में हानिकारक कचरे के निपटान में 20% सुधार दर्ज किया। परिणामों का विश्लेषण दर्शाता है कि पाठ्य-क्रमीय सुधार, सक्रिय शिक्षण विधियाँ (जैसे प्रोजेक्ट-आधारित शिक्षण), और समुदाय सहभागिता मिलकर सतत विकास की दिशा में महत्वपूर्ण कदम साबित हो सकते हैं।

निष्कर्ष : शिक्षा सतत विकास को बढ़ावा देने में एक प्रभावी उपकरण है-बशर्ते उसमें विषय-संबंधी ज्ञान, व्यवहारिक कौशल, और सामाजिक संदर्भ का संतुलन हो। डेटा के अनुसार, यदि पाठ्यक्रमों को स्थानीय और वैश्विक सतत विकास मुद्दों के अनुरूप ढाला जाए, सक्रिय शिक्षण अपनाया जाए, और समुदाय को शिक्षा प्रक्रिया में जोड़ा जाए, तो छात्र वास्तव में सतत प्रभाव पैदा कर सकते हैं। सरकारी और शैक्षणिक संस्थाओं को नीति-निर्माण से लेकर कार्यान्वयन तक ऐसे पहलुओं पर ध्यान केंद्रित करना चाहिए।

कीवर्ड्स: सतत विकास, शिक्षा, पाठ्यक्रमीय सुधार, व्यवहारिक सीख, पर्यावरण-सर्वेदनशीलता, समुदाय सहभागिता

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A Study on Political Interest and Leadership Qualities among College Students: A Strategic Pathway to Viksit Bharat @47 and Shaping a Sustainable Future through Industry–Academia Collaboration

Suman Choudhary, Sita Khandelwal, Sarita Agarwal and Shipra Gupta

Biyani Girls B.Ed College, Jaipur

The youth of India, especially college students, play a decisive role in shaping the nation's democratic and developmental trajectory. Their **political interest and leadership qualities** determine the extent to which they can contribute as active citizens and visionary leaders. This study explores how nurturing political awareness and leadership capacity among students can foster responsible participation in governance and nation-building, thereby aligning with the vision of *Viksit Bharat @47*.

At the same time, achieving sustainable development in a globalized world requires **collaboration between industry and academia**. When students are empowered with political consciousness, ethical leadership, and exposure to real-world problem-solving through industry–academia partnerships, they evolve into socially responsible and innovation-driven leaders. Such integration promotes democratic values, economic resilience, and sustainable growth.

This presentation emphasizes the interconnection between youth leadership, democratic engagement, and sustainability. It argues that preparing college students with political interest and leadership skills, while connecting them with industry and academic networks, will accelerate India's transformation into a developed, inclusive, and globally competitive nation by 2047.

Keywords: Political interest, leadership qualities, Viksit Bharat @47, youth empowerment, industry–academia collaboration



भारतीय स्कूलों में संविधान शिक्षा का प्रभाव एवं चुनौतियाँ : छात्रों एवं शिक्षकों के दृष्टिकोण का अध्ययन

सुनिता सोनगरा, नलनी शर्मा, पल्लवी टांक

बियानी गर्ल्स बी. एड. कॉलेज, जयपुर

सारांश:

संविधान शिक्षा भारतीय लोकतंत्र की आधारशिला को सुदृढ़ बनाने में अत्यंत महत्वपूर्ण भूमिका निभाती है। यह केवल संवैधानिक प्रावधानों की जानकारी तक सीमित नहीं है, बल्कि छात्रों में लोकतांत्रिक मूल्यों, नागरिक उत्तरदायित्व एवं जागरूकतात्मक सहभागिता की भावना विकसित करने का माध्यम भी है। प्रस्तुत शोध पत्र में भारतीय स्कूलों में संविधान शिक्षा की वर्तमान स्थिति, इसके प्रभाव एवं व्यवस्थाणाम से जुड़े चुनौतियों का अध्ययन किया गया है। इसके अंतर्गत 50 छात्रों एवं 20 शिक्षकों के दृष्टिकोण का विश्लेषण किया गया, जो स्पष्ट करता है कि यद्यपि संविधान शिक्षा को लाभदायक माना जाता है, परन्तु इसके प्रभावी क्रियान्वयन में शिक्षण पद्धतियों की सीमाओं, उचित संसाधन की कमी एवं व्यावहारिक गतिविधियों का अभाव मुख्य बाधाएं हैं। शोध निष्कर्ष इंगित करता है कि यदि शिक्षण विधियों में नवाचार, संसाधन की उपलब्धता एवं अनुभववृत्तरी शिक्षण गतिविधियों को प्रोत्साहित किया जाये, तो संविधान शिक्षा की गुणता एवं प्रभाविकता में उदाहरणवत् वृद्धि हो सकती है। यह अध्ययन भविष्य की शिक्षा नीति एवं स्कूल स्तर पर सुधार अत्यन्ता को लिये उपयोगी मार्गदर्श है।

मुख्य शब्द: संविधान शिक्षा, भारता संविधान, नागरिकता, लोकतांत्रिक मूल्य, छात्र दृष्टिकोण, शिक्षक दृष्टिकोण, शिक्षा सुधार।

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Unleashing the Power of Women through Beti Bachao Beti Padhao Movement: A Strategic Path towards Viksit Bharat @47 and Shaping a Sustainable Future through Industry–Academia Collaboration

Tanu Kanwar Chauhan, Pinki Sharma, Neeraj Nathawat and Shipra Gupta

Biyani Girls B.Ed College, Jaipur

Abstract

The vision of Viksit Bharat @2047—a developed India by the centenary of independence—demands inclusive and sustainable growth where women are at the center of change. The Beti Bachao Beti Padhao (BBBP) movement, launched in 2015, has played a vital role in promoting the survival, protection, and education of the girl child. As a result, the Sex Ratio at Birth (SRB) improved from 918 in 2014–15 to 930 in 2023–24. The Gross Enrollment Ratio (GER) of girls in secondary education increased from 75.5% to 78%. Institutional deliveries rose from 61% to 97.3%, showing a significant shift in health and education indicators (Government of India, PIB 2024).

Yet, challenges remain. Reports highlight that 56 to 79% of BBBP funds were previously spent on publicity rather than grassroots interventions. Regional disparities in female literacy and employment still exist. Moreover, India's female labor force participation rate is only 32.8% in 2023, much lower than the global average of 47%. This points to a significant underuse of women's potential.

At the same time, building a sustainable future requires collaboration between industry and academia to connect women's education with skills, innovation, and job opportunities. Positive examples already exist. The Skill Impact Bond (2021) trained over 23,700 youth, 72% of whom were women. Of those, 75% found jobs in sectors like electronics, textiles, and healthcare. In Belagavi (2024), more than 311 rural women students were placed in companies such as Tata Electronics and Foxconn. This showcases how educational institutions and industries together can help women move into mainstream careers.

This presentation argues that the real power of BBBP lies in linking women's education with job readiness and leadership opportunities through industry–academia partnerships. By doing this, India can achieve social equity, economic resilience, and environmental responsibility—the three pillars of sustainability. Empowered women are not just beneficiaries; they are leaders in shaping a knowledge-driven, inclusive, and future-ready India.

Keywords: Women empowerment, Beti Bachao Beti Padhao, Viksit Bharat @47, sustainability, industry–academia collaboration



सतत विकास को बढ़ावा देने हेतु शिक्षा: निपुण भारत मिशन के माध्यम से बुनियादी साक्षरता एवं संख्यानात्मकता का सशक्तिकरण

विनीता कंवर, आरती गुप्ता

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर, राजस्थान

सारांश :

भारत के भविष्य की सशक्त नींव की शुरुआत बच्चों की प्रारंभिक शिक्षा से होती है। यदि कक्षा 3 तक बच्चे बुनियादी साक्षरता और संख्यानात्मकता (FLN) में दक्ष हो जाते हैं, तो उनके लिए भविष्य की चुनौतियों का सामना करना अपेक्षाकृत सरल हो जाता है। इस संदर्भ में, निपुण भारत मिशन (2021) ने यह सुनिश्चित करने का लक्ष्य रखा है कि 2026-27 तक प्रत्येक बच्चा FLN में सक्षम हो।

ASER 2024 की रिपोर्ट बताती है कि सरकारी विद्यालयों में श्रेणी 3 के छात्रों में कक्षा 2 स्तर का पाठ पढ़ने की क्षमता 2022 में 16.3% से बढ़कर 2024 में 23.4% हो गई है, जबकि निजी विद्यालयों में यह आँकड़ा 33.1% से बढ़कर 35.5% हुआ है। गणित में subtraction की क्षमता भी सरकारी विद्यालयों में सुधरी है—2022 के 27% से बढ़कर 2024 में 30.7% तक पहुँच गई।

Central Square Foundation के अनुसार, निपुण भारत मिशन अब तक लगभग 5 करोड़ बच्चों, 17 लाख शिक्षकों और 6 लाख से अधिक विद्यालयों तक पहुँच चुका है। 2022-2024 के दौरान ग्रामीण क्षेत्रों में पठन और गणना कौशल में औसतन 7 प्रतिशत अंक सुधार हुआ है, जिसमें उत्तर प्रदेश सर्वाधिक प्रगति वाला राज्य रहा—पठन में 12 अंक और subtraction में 14 अंक की बढ़ोतरी।

इसके अलावा, PLFS 2023-24 रिपोर्ट बताती है कि भारत में 7 वर्ष और उससे ऊपर की आयु का साक्षरता स्तर 80.9% तक पहुँच गया है। इसमें शहरी साक्षरता 88.9% और ग्रामीण साक्षरता 77.5% दर्ज की गई। महिला साक्षरता 74.6% तक पहुँची है, परन्तु अब भी पुरुषों (87.2%) से पीछे है। राजस्थान समेत कई राज्यों में सुधार की और गुंजाइश बनी हुई है। डिजिटल उपकरणों की पहुँच भी शिक्षा को अधिक समावेशी बनाने में सहायक रही है। ASER 2024 के अनुसार, लगभग 90% बच्चों के घर में स्मार्टफोन उपलब्ध है और 80% से अधिक बच्चे उनका शैक्षणिक उपयोग कर पा रहे हैं। इन आँकड़ों से स्पष्ट होता है कि निपुण भारत मिशन ने शिक्षा में ठोस और सकारात्मक परिवर्तन की दिशा में उल्लेखनीय प्रगति की है। यह पहल केवल साक्षरता और गणना तक सीमित नहीं है—बल्कि डिजिटल पहुँच, आलोचनात्मक चिंतन, जीवन कौशल और सतत नागरिकता के विकास के माध्यम से आने वाली पीढ़ी को सशक्त बनाने का कार्य भी कर रही है।



उच्च माध्यमिक स्तर के विद्यार्थियों में पलायन प्रवृत्ति और सतत् विकास के संदर्भ में अध्ययन

पूजा यादव, सुनीता कुमावत¹, कृष्णा यादव²

¹बियानी गर्ल्स बी एड कॉलेज, ²महला टीटी कॉलेज

सारांश:

वर्तमान समय में शिक्षा केवल ज्ञान प्राप्त करने का साधन नहीं, बल्कि समाज के सतत् विकास की आधारशिला है। संयुक्त राष्ट्र के सतत् विकास लक्ष्यों (SDGs) में से चौथा लक्ष्य (SDG-4) सभी को समावेशी और गुणवत्तापूर्ण शिक्षा उपलब्ध कराने तथा जीवनपर्यंत सीखने के अवसर सुनिश्चित करने पर बल देता है। किंतु वास्तविकता यह है कि ग्रामीण एवं अर्ध-शहरी क्षेत्रों में शिक्षा की गुणवत्ता, संसाधनों की उपलब्धता तथा कैरियर अवसरों की कमी के कारण उच्च माध्यमिक स्तर के विद्यार्थियों में पलायन प्रवृत्ति निरंतर बढ़ रही है। विद्यार्थी अपने स्थानीय क्षेत्र को छोड़कर महानगरों एवं विकसित शहरी क्षेत्रों की ओर आकर्षित हो रहे हैं। यह प्रवृत्ति जहाँ व्यक्तिगत स्तर पर विद्यार्थियों के भविष्य को प्रभावित करती है, वहीं दूसरी ओर स्थानीय शिक्षा प्रणाली, परिवारिक संरचना तथा ग्रामीण समुदाय के सतत् विकास पर भी प्रतिकूल असर डालती है।

इस अध्ययन का उद्देश्य उच्च माध्यमिक स्तर के विद्यार्थियों में पलायन प्रवृत्ति के प्रमुख कारणों को समझना तथा इसे सतत् विकास के संदर्भ में विश्लेषित करना है। अध्ययन यह जाँचने का प्रयास करेगा कि शिक्षा की असमान गुणवत्ता, रोजगार की कमी, आधुनिक संसाधनों का अभाव और सामाजिक-आर्थिक पृष्ठभूमि विद्यार्थियों के पलायन को किस हद तक प्रभावित करते हैं। साथ ही यह भी देखा जाएगा कि इस प्रवृत्ति का ग्रामीण क्षेत्रों के सामाजिक-सांस्कृतिक विकास, स्थानीय मानव संसाधन और शैक्षिक संस्थानों की प्रगति पर क्या प्रभाव पड़ता है।

शोध में सर्वेक्षण पद्धति का प्रयोग करते हुए उच्च माध्यमिक स्तर (कक्षा 11-12) के विद्यार्थियों से प्रश्नावली और साक्षात्कार के माध्यम से डेटा एकत्रित किया जाएगा। नमूना चयन ग्रामीण, अर्ध-शहरी और शहरी क्षेत्रों से किया जाएगा ताकि तुलना एवं विश्लेषण अधिक व्यापक हो सके। अपेक्षित परिणामों में यह स्पष्ट होने की संभावना है कि पलायन प्रवृत्ति के पीछे गुणवत्तापूर्ण शिक्षा और कैरियर अवसरों की तलाश प्रमुख कारण हैं। इसके साथ ही यह भी अनुमान है कि पलायन से ग्रामीण क्षेत्रों में शैक्षिक असमानता, सामाजिक असंतुलन और आर्थिक विकास में रुकावट उत्पन्न होती है, जो सतत् विकास की अवधारणा के विपरीत है।

इस अध्ययन के निष्कर्षों से यह समझ विकसित होगी कि किस प्रकार शिक्षा की गुणवत्ता में सुधार, डिजिटल एवं व्यावसायिक शिक्षा का विस्तार, रोजगार के स्थानीय अवसर और सामुदायिक सहभागिता विद्यार्थियों को अपने क्षेत्र में ही बेहतर भविष्य बनाने में सहायता कर सकती है। इस प्रकार पलायन प्रवृत्ति को कम करके सतत् विकास के लक्ष्यों की प्राप्ति की दिशा में ठोस कदम उठाए जा सकते हैं।

शिक्षा किसी भी समाज के सतत् विकास (Sustainable Development) की आधारशिला है। संयुक्त राष्ट्र के सतत् विकास लक्ष्यों (SDGs) में से चौथा लक्ष्य (SDG-4) सभी के लिए समावेशी और गुणवत्तापूर्ण शिक्षा

उपलब्ध कराने तथा जीवनपर्यंत सीखने के अवसर सुनिश्चित करने पर केंद्रित है। किंतु वास्तविकता यह है कि ग्रामीण एवं अर्ध-शहरी क्षेत्रों में गुणवत्तापूर्ण शिक्षा और कैरियर अवसरों की कमी के कारण उच्च माध्यमिक स्तर के विद्यार्थियों में पलायन प्रवृत्ति तेजी से बढ़ रही है।

भारत में 2011 की जनगणना के अनुसार, लगभग 37% पलायन शिक्षा एवं रोजगार से जुड़ा हुआ था, जिनमें से एक बड़ा हिस्सा किशोर एवं युवा वर्ग का था। हाल के राष्ट्रीय शिक्षा नीति (NEP-2020) की रिपोर्ट के अनुसार, ग्रामीण क्षेत्रों के लगभग 28% विद्यार्थी उच्च माध्यमिक स्तर के बाद शिक्षा हेतु शहरी केंद्रों की ओर पलायन करते हैं। वहीं UNESCO (2022) की रिपोर्ट दर्शाती है कि भारत में अभी भी लगभग 3.2 करोड़ विद्यार्थी ऐसे हैं जो गुणवत्तापूर्ण माध्यमिक और उच्च माध्यमिक शिक्षा से वंचित हैं। यह प्रवृत्ति सतत् विकास के लिए बड़ी चुनौती है, क्योंकि इससे ग्रामीण क्षेत्रों की मानव संसाधन क्षमता और सामाजिक-आर्थिक संतुलन प्रभावित होता है।

इस अध्ययन का मुख्य उद्देश्य उच्च माध्यमिक स्तर के विद्यार्थियों में पलायन प्रवृत्ति के कारणों का पता लगाना और उन्हें सतत् विकास के परिप्रेक्ष्य में विश्लेषित करना है। विशेष रूप से यह जानना कि शिक्षा की असमान गुणवत्ता, आधुनिक संसाधनों की अनुपलब्धता, रोजगार की कमी और सामाजिक-आर्थिक पृष्ठभूमि इस प्रवृत्ति को किस प्रकार प्रभावित करती है। शोध यह भी जाँच करेगा कि विद्यार्थियों का पलायन ग्रामीण क्षेत्रों की शिक्षा प्रणाली, परिवारिक संरचना तथा स्थानीय सतत् विकास पर क्या प्रभाव डालता है

अपेक्षित परिणामों से यह संभावना है कि पलायन प्रवृत्ति का मुख्य कारण गुणवत्तापूर्ण शिक्षा एवं कैरियर अवसरों की तलाश है। साथ ही यह भी स्पष्ट होगा कि पलायन से ग्रामीण क्षेत्रों में शैक्षिक असमानता और सामाजिक असंतुलन बढ़ता है, जिससे सतत् विकास की दिशा में प्रगति बाधित होती है।

इस अध्ययन के निष्कर्षों से यह सुझाव दिए जा सकेंगे कि ग्रामीण एवं अर्ध-शहरी विद्यालयों में शिक्षा की गुणवत्ता को बढ़ाकर, डिजिटल एवं व्यावसायिक शिक्षा के अवसर प्रदान कर और स्थानीय स्तर पर रोजगार सृजन करके विद्यार्थियों के पलायन को कम किया जा सकता है। इस प्रकार यह शोध सतत् विकास लक्ष्यों (विशेषकर SDG-4) की प्राप्ति में सहायक होता है।

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डिजिटल नागरिकता और पर्यावरणीय जिम्मेदारी

आरती खाण्डल, सरिता पारीक, सुमित्रा यादव

बियानी गर्ल्स बी. एड. कॉलेज, जयपुर

21वीं सदी तकनीकी क्रांति का युग है। इंटरनेट, स्मार्टफोन, सोशल मीडिया, ऑनलाइन शिक्षा और डिजिटल भुगतान ने हमारी जीवनशैली को पूरी तरह बदल दिया है। हम अब केवल नागरिक नहीं, बल्कि डिजिटल नागरिक भी बन चुके हैं। लेकिन डिजिटल युग की यह सुविधा जिम्मेदारियों के साथ आती है। डिजिटल संसाधनों का दुरुपयोग न हो, तकनीक का नैतिक और सुरक्षित उपयोग हो, और साथ ही पर्यावरण पर पड़ने वाले दुष्प्रभावों को कम किया जाए, यह हम सबकी सामूहिक जिम्मेदारी है। इसलिए डिजिटल नागरिकता और पर्यावरणीय जिम्मेदारी एक-दूसरे से गहराई से जुड़ी अवधारणाएँ हैं।

डिजिटल युग में तकनीकी उपकरणों और इंटरनेट का बढ़ता उपयोग पर्यावरण पर प्रत्यक्ष और अप्रत्यक्ष प्रभाव डाल रहा है।

ई-कचरा (E-Waste) हर साल लाखों टन पुराने मोबाइल, लैपटॉप और अन्य उपकरण फेंके जाते हैं, जिससे मिट्टी और पानी प्रदूषित होते हैं। एक जागरूक डिजिटल नागरिक के रूप में हमें रीसाइक्लिंग केंद्रों पर जमा करना चाहिए।

ऊर्जा की खपत: सर्वर, डाटा सेंटर और स्ट्रीमिंग सेवाएँ बड़ी मात्रा में बिजली की खपत करती हैं। ऊर्जा-कुशल उपकरणों का चयन और अनावश्यक उपकरण बंद रखना पर्यावरण की सुरक्षा में मदद करता है।

पेपरलेस कार्य: डिजिटल माध्यमों से काम करने पर कागज की खपत घटती है, जिससे पेड़ों की कटाई कम होती है।

पर्यावरणीय जागरूकता: डिजिटल प्लेटफॉर्म का उपयोग पर्यावरण संरक्षण के संदेश फैलाने के लिए भी किया जा सकता है।

डिजिटल नागरिकता और पर्यावरणीय जिम्मेदारी आज के समय की महत्वपूर्ण आवश्यकताएँ हैं। यदि हम डिजिटल संसाधनों का सुरक्षित, नैतिक, जागरूक और पर्यावरण-अनुकूल उपयोग करेंगे, तो न केवल हम स्वयं सुरक्षित रहेंगे बल्कि पृथ्वी के प्राकृतिक संसाधनों को भी आने वाली पीढ़ियों के लिए संरक्षित रख सकेंगे।

मुख्य शब्द: डिजिटल नागरिकता, डिजिटल नैतिकता, ई-कचरा, पर्यावरण जिम्मेदारी, कार्बन उत्सर्जन



अपशिष्ट प्रबंधन और पुनर्चक्रण

पूर्वा शर्मा, सुनिता शर्मा, सरिता खेतान

बियानी गर्ल्स बी.एड कॉलेज

विश्वभर में प्रतिवर्ष लगभग 2.24 बिलियन टन ठोस अपशिष्ट उत्पन्न होता है (विश्व बैंक, 2022)। भारत अकेले प्रतिवर्ष 82 मिलियन टन से अधिक ठोस अपशिष्ट उत्पन्न करता है, जिसमें से लगभग 70% का ही संग्रहण होता है और केवल 20-25% का पुनर्चक्रण हो पाता है। बढ़ती जनसंख्या, शहरीकरण और औद्योगिकीकरण ने अपशिष्ट प्रबंधन की समस्या को गंभीर बना दिया है। अनुचित अपशिष्ट प्रबंधन से भूमि प्रदूषण, जल प्रदूषण, वायु प्रदूषण और ग्रीनहाउस गैस उत्सर्जन जैसी समस्याएँ उत्पन्न होती हैं। सतत विकास (Sustainable Development) हेतु पुनर्चक्रण (Recycling), पुनः उपयोग (Reuse) और अपशिष्ट कम करना आवश्यक है।

सकारात्मक प्रभाव:

- पुनर्चक्रण से प्राकृतिक संसाधनों पर दबाव कम होता है।
- एक टन कागज पुनर्चक्रण से लगभग 17 पेड़ बचाए जा सकते हैं।
- एक टन प्लास्टिक के पुनर्चक्रण से लगभग 700 किलो तेल की बचत होती है।

निष्कर्ष :

- अपशिष्ट प्रबंधन और पुनर्चक्रण सतत विकास के लिए अनिवार्य है।
- यदि भारत अपने ठोस अपशिष्ट का कम से कम 70% पुनर्चक्रण करे तो प्रदूषण में कमी, रोजगार सृजन और ऊर्जा बचत संभव है।
- जन-जागरूकता, स्रोत पर अपशिष्ट पृथक्करण, और सरकारी-निजी क्षेत्र का सहयोग इस दिशा में महत्वपूर्ण कदम हैं।
- सर्कुलर इकोनॉमी को अपनाकर हम “कचरे से संसाधन” की अवधारणा को सफल बना सकते हैं।



भारत में पर्यावरण संरक्षण और नागरिक भागीदारी पर अभियान

हंसा मंडिवाल, हेमलता मिश्रा, सरिता अग्रवाल

बियानी गर्ल्स बी.एड कॉलेज

पर्यावरण संरक्षण का अर्थ है प्राकृतिक संसाधनों और पर्यावरण की रक्षा करना ताकि मानव जीवन और जैव विविधता सुरक्षित रह सके। भारत में पर्यावरण संरक्षण अधिनियम (1986) समेत कई कानून लागू हैं जो पर्यावरण प्रदूषण को रोकने और सुधारने के लिए बनाए गए हैं। नागरिकों की सक्रिय भागीदारी पर्यावरण संरक्षण में महत्वपूर्ण भूमिका निभाती है।

- **सार्वजनिक जागरूकता अभियान:** स्कूल, कॉलेज, पंचायत, और समाज में पर्यावरणीय शिक्षा देना।
- **स्वच्छता और वृक्षारोपण कार्यक्रम:** 'स्वच्छ भारत मिशन' और 'एक पेड़, सौ पेड़' अभियान के माध्यम से।
- **सामुदायिक भागीदारी:** स्थानीय जनता को पर्यावरण संरक्षण के कार्यों में जोड़ना।
- **प्रदूषण नियंत्रण और निगरानी:** पर्यावरणीय मानकों का पालन सुनिश्चित करना, नियमों का उल्लंघन रोकना।
- **ई-अपशिष्ट और प्लास्टिक निवारण:** कूड़ा-कचरा प्रबंधन और प्लास्टिक के उपयोग में कमी लाना।
- **साझा प्रयास:** सरकारी, गैर सरकारी संस्थानों और नागरिकों के बीच सहयोग।

चर्चा और चुनौतियाँ

- **कम जागरूकता:** ग्रामीण और शहरी क्षेत्रों में पर्यावरण के प्रति अवेयरनेस की कमी।
- **प्रदूषण और कूड़ा प्रबंधन:** औद्योगिक और घरेलू प्रदूषण, कचरा प्रबंधन में अक्षमता।
- **कानूनों का प्रभावी पालन न होना:** भ्रष्टाचार और अकुशल प्रशासन।
- अवैध खनन और वन पुनरुद्धार की कमी।
- **जलवायु परिवर्तन:** बढ़ती जलवायु संकटों से निपटना।

निष्कर्ष: पर्यावरण संरक्षण में नागरिकों की भूमिका अत्यंत महत्वपूर्ण है। जनता की जागरूकता, शिक्षा, और सक्रिय भागीदारी के बिना प्रभावी संरक्षण संभव नहीं। भारत को सतत विकास के लिए पर्यावरण संरक्षण के प्रति समर्पित नीतियाँ और जनता का सहयोग चाहिए। सामूहिक प्रयास ही स्वच्छ और स्वस्थ पर्यावरण सुनिश्चित कर सकते हैं।



सतत विकास को बढ़ावा देने के लिए शिक्षा

कामिनी सैन, मालती सक्सेना

बियानी गर्ल्स बी.एड. कॉलेज

सतत विकास आधुनिक समय की सबसे बड़ी चुनौतियों में से एक है, क्योंकि यह न केवल पर्यावरण संरक्षण से जुड़ा हुआ है बल्कि सामाजिक, आर्थिक और सांस्कृतिक संतुलन से भी संबंधित है। शिक्षा इस लक्ष्य को प्राप्त करने का सबसे प्रभावी साधन है। गुणवत्तापूर्ण शिक्षा से न केवल व्यक्तियों की सोच और व्यवहार में परिवर्तन लाया जा सकता है, बल्कि समाज को जिम्मेदार नागरिकता और दीर्घकालिक विकास की दिशा में अग्रसर किया जा सकता है।

शिक्षा, विशेष रूप से पर्यावरण शिक्षा और जीवन कौशल आधारित शिक्षा, विद्यार्थियों को यह समझने में मदद करती है कि संसाधनों का विवेकपूर्ण उपयोग किस प्रकार किया जाए और भविष्य की पीढ़ियों के लिए इन्हें सुरक्षित रखा जाए। विद्यालयों और उच्च शिक्षा संस्थानों में सतत विकास के सिद्धांतों को पाठ्यक्रम में शामिल करने से छात्रों में जागरूकता और जिम्मेदारी की भावना विकसित होती है। साथ ही, स्थानीय स्तर पर सामुदायिक भागीदारी और वैश्विक स्तर पर सहयोग को प्रोत्साहित करने के लिए शिक्षा एक सशक्त माध्यम का कार्य करती है।

सतत विकास के लिए शिक्षा केवल सैद्धांतिक ज्ञान तक सीमित नहीं होनी चाहिए, बल्कि व्यावहारिक क्रियान्वयन और जीवनशैली में बदलाव पर भी बल देना चाहिए। उदाहरण के लिए, ऊर्जा की बचत, पुनर्चक्रण, नवीकरणीय ऊर्जा का उपयोग, जल संरक्षण तथा समान अवसरों की उपलब्धता जैसे विषयों पर आधारित गतिविधियाँ छात्रों को जागरूक और सक्रिय बनाती हैं। इस प्रकार की शिक्षा भविष्य की पीढ़ियों को जिम्मेदार वैश्विक नागरिक बनने में मदद करती है।

अतः, यह स्पष्ट है कि शिक्षा सतत विकास की आधारशिला है। यदि इसे नीतिगत स्तर पर प्राथमिकता दी जाए और प्रभावी ढंग से लागू किया जाए, तो सतत विकास के लक्ष्य (SDGs) को प्राप्त करना संभव हो सकेगा।

मुख्य शब्द: शिक्षा, सतत विकास, जागरूकता, पर्यावरण, सामाजिक जिम्मेदार



Technological Innovations in Sustainable Fashion

Kirti Khanna, Neeraj Nathawat, Pallavi Tak and Purva Gautam

Biyani Girls B.Ed College, Jaipur

Abstract

The global fashion industry is one of the most resource-intensive and polluting sectors, consuming large amounts of water, energy, and chemicals while generating significant textile waste. In recent years, there has been growing awareness about the need for sustainable practices. Consumers now expect clothing that not only looks good but also respects the planet. This shift has encouraged designers and manufacturers to explore technological innovations that make fashion cleaner,

smarter, and more responsible. Among the most promising developments are 3D printing, biodegradable fabrics, and AI-based pattern optimisation. These technologies are transforming how clothes are designed, produced, and disposed of, helping the industry move from a traditional “take-make-dispose” model to a circular, sustainable one.

The application of these technologies shows clear environmental and economic benefits. 3D printing drastically reduces fabric waste and energy consumption because garments are produced only when needed and in the exact size required. This not only lowers costs but also reduces returns and unsold inventory. Biodegradable fabrics address the problem of textile waste at the end of a garment’s life by naturally decomposing or being recycled into new products, thus supporting a circular economy. AI-based pattern optimisation has already saved many manufacturers thousands of metres of fabric by cutting smarter layouts and reducing the need for multiple prototypes. It also accelerates production planning, improves supply chain efficiency, and lowers carbon emissions. Together, these innovations help reduce the fashion industry’s negative impact on water resources, chemical pollution, and landfill use while keeping creativity and quality intact.

Conclusion: Technological innovations such as 3D printing, biodegradable fabrics, and AI in pattern optimisation prove that fashion can be both innovative and sustainable. They represent a new approach where environmental responsibility and economic efficiency go hand in hand. By adopting these technologies, the fashion industry can conserve resources, cut down waste, and offer consumers products that are stylish yet planet-friendly. These developments are vital steps toward a greener and more ethical future for fashion.

Keywords: Sustainability – Biodegradable Fabrics – Artificial Intelligence – Pattern Optimisation – Waste Reduction – Circular Economy – Eco-friendly Textiles.



Beyond the Textbook: How Ruskin Bond’s Worldview Can Shape a Sustainable and Ethical Educational System

Pushpa Kumawat*, Dheerendra Prakash Mishra

Maharaj Vinayak Global University, Jaipur

Abstract:

This study investigates the pedagogical possibilities of the literary works of Ruskin Bond as a model for a sustainable and ethical education system. Leaving behind traditional, textbook-based education, this article argues that Bond's repeated themes of childhood innocence, deep harmony with nature, and gentle move to experience provide a potent "curriculum of the heart." By means of a literary close reading of his major narratives, this research explores how Bond's child protagonists

come to form an intuitive ethics not from didactic lesson, but from their embedded and empathetic connection with the natural world.

The article contends that this worldview offers a powerful antidote for the increasing disconnection between contemporary education and ecological awareness. Bond's book illustrates that sustainability is based on a sense of wonder and belonging, whereas ethics are born out of sheer compassion. With the integration of this empathetic, narrative-based approach into mainstream education, we are able to raise students who are not only well-versed but also deeply ecologically conscious and well-grounded morally. This study concludes that Bond's literary world is an essential tool in developing an educational philosophy that encourages emotionally intelligent and environmentally conscious citizens for a sustainable future.

Keywords: Sustainability, Ethical Educational System, ecological consciousness, pedagogical potential.



सतत विकास के लिए शिक्षा

ओम कंवर चौहान, तृप्ति सैनी

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर

सतत विकास के लिए शिक्षा लोगों को ज्ञान, कौशल, मूल्यों और दृष्टिकोणों से सशक्त करती है, जिससे वे पर्यावरणीय, आर्थिक और सामाजिक चुनौतियों का सामना करते हुए एक बेहतर भविष्य का निर्माण कर सकें। यह शिक्षा आलोचनात्मक सोच को बढ़ावा देती है नवाचार को प्रोत्साहित करती है, और नागरिकों में एक जिम्मेदार दृष्टिकोण पैदा करती है ताकि पर्यावरण की रक्षा हो, सामाजिक न्याय सुनिश्चित हो और आर्थिक अवसर स्थायी तरीके से तलाशे जा सकें। सतत विकास के लक्ष्य 4 का उद्देश्य सभी के लिए गुणवत्तापूर्ण शिक्षा और आजीवन सीखने के अवसरों को बढ़ावा देना है। सतत विकास के लिए शिक्षा के मुख्य उद्देश्य ज्ञान और कौशल का विकास व्यक्तियों को ग्रह की तत्कालिक चुनौतियों को समझने और उनका समाधान करने के लिए आवश्यक ज्ञान, कौशल और दृष्टिकोण प्रदान करना। आलोचनात्मक सोच और समस्या-समाधान भविष्य की परिस्थितियों की कल्पना करने और सहयोगात्मक रूप से निर्णय लेने की क्षमता को विकसित करना। जिम्मेदारी की भावना पर्यावरण संरक्षण, सामाजिक न्याय और स्थायी आर्थिक विकास के प्रति नागरिकों में जिम्मेदारी की भावना पैदा करना। स्थायी जीवनशैली लोगों को पर्यावरण, अर्थव्यवस्था और समाज के लिए बेहतर जीवन जीने में सक्षम बनाना। उदाहरण: सतत विकास लक्ष्य 4 (SDG 4) 2030 तक सभी के लिए मुफ्त प्राथमिक और माध्यमिक शिक्षा सुनिश्चित करना और आजीवन सीखने के अवसरों को बढ़ावा देना इसका उद्देश्य है।

यूनैस्को : यूनैस्को सतत विकास के लिए शिक्षा के माध्यम से व्यक्तियों को ज्ञान, कौशल, मूल्यों और दृष्टिकोणों से सशक्त बनाने के लिए प्रतिबद्ध है, ताकि वे एक स्थायी दुनिया बना सकें।

संक्षेप में, सतत विकास के लिए शिक्षा व्यक्तियों को भविष्य के लिए तैयार करने का एक शक्तिशाली माध्यम है।

अतः यह निष्कर्ष निकाला जा सकता है कि – सतत विकास के लिए शिक्षा भविष्य की पीढ़ियों को अधिक संवेदनशील, उत्तरदायी और जागरूक नागरिक बनाने का आधार है। यह केवल शैक्षिक सुधार का हिस्सा नहीं बल्कि सामाजिक परिवर्तन का माध्यम भी है। शिक्षा में सतत विकास को शामिल करना आज की सबसे बड़ी आवश्यकता है ताकि मानवता और प्रकृति के बीच संतुलन स्थापित हो सके।

की-वर्ड : सतत्, विकास एवं शिक्षा



Digital Citizenship and Environmental Responsibility

Pragya Kumari, Nalni Sharma, Priyanka Maheshwari

Biyani Girls B.Ed. College, Jaipur

Abstract: The rapid growth of digital technologies has transformed modern life, but it has also led to significant environmental concerns, including energy consumption, e-waste generation, and resource depletion. As digital citizens, individuals have a crucial role to play in promoting sustainability and reducing the environmental impact of digital technologies. However, there is a need for a deeper understanding of the relationship between digital citizenship and environmental responsibility.

The findings of this study reveal that digital citizens' awareness and behaviours regarding environmental sustainability are influenced by a range of factors, including education, social norms, and policy initiatives. The study highlights the need for targeted education and awareness-raising initiatives to promote sustainable digital practices and reduce the environmental impact of digital technologies. The results also suggest that digital citizens who are aware of the environmental implications of their online behaviours are more likely to adopt eco-friendly digital practices.

Conclusion: This study provides insights into the complex relationship between digital citizenship and environmental responsibility, highlighting the need for a holistic approach to promote sustainability in the digital age. By empowering digital citizens with the knowledge, skills, and attitudes necessary to adopt eco-friendly digital practices, we can reduce the environmental impact of digital technologies and promote a more sustainable future. The study's findings have implications for policymakers, educators, and digital citizens, emphasizing the importance of collaboration and collective action to address the environmental challenges posed by digital technologies.

Keywords: Digital Citizenship, Environmental Responsibility, Sustainable Digital Practices, Eco-Friendly Digital Behaviours, Digital Literacy.



Digital Etiquette in Education

Purva Kothari, Priyanka Sharma, Krishna Ydav

Biyani Girls B.Ed. College, Jaipur

Abstract:

The quick introduction of digital technologies, including learning management systems, video conferencing, and social media, has transformed education. It has made communication, collaboration, and access to content much richer. However, this shift has brought new behavioural challenges in virtual environments. “Digital etiquette,” or netiquette, has emerged as a key concept for responsible and respectful online conduct. In educational contexts, netiquette shapes effective interactions among students and teachers. It helps prevent problems like cyberbullying, plagiarism, and violations of privacy. The COVID-19 pandemic intensified this need by forcing remote teaching, online assessments, and digital discussions, raising the importance of ethical and respectful online behavior. Netiquette involves more than just technical skills; it includes cultural sensitivity, critical thinking, and digital citizenship. Educators need to model and promote these values in students to support inclusive, respectful, and meaningful learning in a connected world.

In conclusion, as education continues to shift online, netiquette has become a vital part of fostering respectful, inclusive, and effective learning environments. Recent studies show that promoting digital etiquette improves student engagement, reduces misunderstandings, and builds a stronger sense of belonging in online classrooms. The findings of this study indicate that while both students and educators recognize its importance, actual adherence remains inconsistent. This highlights the urgent need for clearer institutional guidelines and educational programs.

Integrating netiquette into curricula and institutional policies not only prepares students for responsible engagement in academic and professional settings but also helps them develop as responsible digital citizens. Ultimately, nurturing digital etiquette supports respectful and empathetic online communities, ensuring that learners can navigate and enrich our increasingly connected world.

Keywords: Digital Etiquette, Education, Student engagement.



A Study of Teaching Methods for Promoting Sustainable Fashion Design in Higher Education

Purvi Saini¹, Sarita Sharma¹, Anjali Mishra²

¹Biyani Girls B.Ed College, Jaipur; ²Rainbow School

Sustainable fashion design has become an important area of study because of the growing concerns about the environment and the negative impact of the fashion industry. In higher education, students not only need technical skills but also awareness about how fashion choices affect society and nature. This study looks at different teaching methods that can be used to promote sustainable fashion design among students at the college level.

The research focuses on methods like lectures, project-based learning, workshops, and case studies. Lectures are useful for giving basic knowledge, while workshops and projects give students practical experience with sustainable materials and design techniques. Case studies also help in connecting real-world industry examples with classroom learning. Group discussions and digital platforms are seen as effective tools for sharing ideas and developing critical thinking on issues like fast fashion, textile waste, and eco-friendly production.

The main aim of this study is to see which methods are most effective in helping students understand and apply the concepts of sustainability in their design work. It also explores how students' attitudes and behavior can change when they are exposed to creative and participatory teaching approaches. The study highlights that combining theory with practice, along with the use of digital resources, can make learning more meaningful and encourage future designers to adopt responsible practices.

Keywords: Sustainable fashion, higher education, teaching methods, project-based learning, environmental responsibility.



भारतीय संदर्भ में पर्यावरणीय समस्याओं के प्रतिबिंब के रूप में कला

वैशाली ढंड, सुनिता कुमारी शर्मा, कमलेश सरोवा

बियानी गर्ल्स बी.एड कॉलेज

परिचय: भारत में तेजी से बढ़ती आबादी, शहरीकरण, औद्योगीकरण, वनों की कटाई, जल व वायु प्रदूषण जैसी समस्याएँ पर्यावरणीय संकट को जन्म देती हैं। पारंपरिक दृष्टिकोण के साथ आधुनिक कला ने इन मुद्दों को रचनात्मक माध्यमों से उजागर करने का काम किया है।

कार्यप्रणाली एवं तकनीक: कलाकार अपने कला कार्यों के माध्यम से चित्रकला, मूर्तिकला, प्रदर्शन कला, फोटोग्राफी आदि का उपयोग करते हैं। पारिस्थितिकी कला, इको-आर्ट, स्थापना कला के ज़रिए वे प्रकृति के सौंदर्य,

पर्यावरण क्षरण और संरक्षण की आवश्यकता को चित्रित करते हैं। कई कलाकार पर्यावरणीय संगठनों के साथ मिलकर सामूहिक कला परियोजनाओं की रचना भी करते हैं।

चर्चा और चुनौतियाँ:

- सरकार और संस्थानों से अपर्याप्त सहयोग
- दर्शकों की सीमित पहुँच एवं रुचि
- आर्थिक संसाधनों की कमी, तकनीकी बाधाएँ.
- ग्रामीण एवं शहरी क्षेत्रों में संदेश पहुँचाने में बाधाएँ

अनुसंधान/शिक्षा में संभावनाएँ: इको-कला शिक्षा, स्कूलों व विश्वविद्यालयों में पर्यावरण विषयक पाठ्यक्रमों का सशक्त माध्यम बन सकती है। कलाकारों की पहल, सामुदायिक भागीदारी और नई तकनीकों का समावेश आवश्यक है। यह चर्चा भारतीय संदर्भ में कला के माध्यम से पर्यावरणीय समस्याओं के समसामयिक हल, जागरूकता और चुनौतियों की व्याख्या करती है।

निष्कर्ष : भारतीय कला ने हमेशा से स्थानीय पर्यावरणीय मुद्दों का सजीव और प्रभावी प्रतिबिंब प्रस्तुत किया है जो हमारे सांस्कृतिक और प्राकृतिक परिवेश से गहरे जुड़े हैं। यह कला न केवल पर्यावरण संरक्षण का संदेश देती है, बल्कि समाज में जागरूकता और जिम्मेदारी की भावना भी जागृत करती है। कभी-कभी यह कला पारंपरिक रूपों में प्रकृति के प्रति सम्मान दर्शाती है, तो कभी समकालीन रचनाओं के माध्यम से जलवायु परिवर्तन, वनों की कटाई और प्रदूषण जैसे गंभीर संकटों को उजागर करती है। इस प्रकार, भारतीय कला पर्यावरणीय संरक्षण की सांस्कृतिक चेतना और सामाजिक प्रतिबद्धता को प्रोत्साहित करती है, जो हमारे भविष्य के लिए सतत विकास की नींव रखती है।

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तकनीकी एवं व्यावसायिक शिक्षा प्रणाली: आत्मनिर्भरता और सतत् विकास की दिशामें एक कदम

विमल वर्मा, सुनीता कुमारी शर्मा, किरण पारीक

बियानी गर्ल्स बी.एड. कॉलेज, जयपुर

शिक्षा केवल ज्ञानार्जन का माध्यम नहीं, बल्कि समाज और राष्ट्र निर्माण का आधार है। वर्तमान समय में जब रोजगार और कौशल की चुनौतियाँ सामने हैं, तब तकनीकी एवं व्यावसायिक शिक्षा प्रणाली का महत्व अत्यधिक बढ़ जाता है। यह शिक्षा न केवल युवाओं को रोजगारोन्मुख बनाती है, बल्कि उन्हें आत्मनिर्भर, नवोन्मेषी और समाजोपयोगी नागरिक के रूप में तैयार करती है। इस शिक्षा का मुख्य उद्देश्य व्यक्तियों को विशिष्ट व्यवसायों के लिए आवश्यक व्यावहारिक कौशल और ज्ञान प्रदान करना है, जिससे वे रोजगार पा सकें या अपना व्यवसाय शुरू कर सकें। यह

शिक्षा देश के विकास के लिए कुशल और प्रशिक्षित श्रम शक्ति तैयार करती है, जो आर्थिक समृद्धि और उन्नति में सहायक होती है। यह प्रणाली न केवल तकनीकी कौशल प्रदान करती है, बल्कि व्यक्ति के व्यक्तिगत और सांस्कृतिक विकास के लिए आवश्यक सामान्य शिक्षा भी देती है, जिसमें सामाजिक, आर्थिक और पर्यावरणीय अवधारणाएं शामिल हैं। पाठ्यक्रम को नए ज्ञान और तकनीकी प्रक्रियाओं को शामिल करने के लिए लगातार अद्यतन किया जाता है, जिससे शिक्षा प्रासंगिक बनी रहे। इसमें किसी पेशे के सैद्धांतिक ज्ञान और व्यावहारिक कौशल दोनों पहलुओं को शामिल किया जाता है, ताकि व्यक्ति पूरी तरह से कुशल बन सकें। यह शिक्षा बेरोजगारी की समस्या को हल करने में महत्वपूर्ण भूमिका निभाती है, क्योंकि यह युवाओं को कौशल सिखा कर उन्हें स्वावलंबी बनाती है। संविदाकारी राज्य शैक्षिक संस्थानों के बाहर के उपक्रमों को भी तकनीकी और व्यावसायिक शिक्षा में सहायता और सलाह देते हैं, जिससे कार्यक्रमों की व्यापकता बढ़ती है। यह प्रणाली व्यावहारिक कौशल प्रदान करती है, जिससे युवा रोजगार पाने या अपना व्यवसाय शुरू करने में सक्षम होते हैं, जो आर्थिक सशक्तिकरण और सामाजिक प्रगति की नींव रखता है। साथ ही, यह सतत विकास लक्ष्यों को एकीकृत करके पर्यावरण और समाज के प्रति जागरूक नेतृत्व तैयार करती है, जो आने वाली पीढ़ियों के लिए एक टिकाऊ भविष्य सुनिश्चित करता है।

तकनीकी एवं व्यावसायिक शिक्षा प्रणाली शिक्षा प्रणाली वर्तमान समय की आवश्यकता है। यह केवल रोजगार प्राप्ति का साधन नहीं है, बल्कि आत्मनिर्भरता, नवाचार और सतत विकास का आधार भी है। यदि शिक्षा नीतियों में इस प्रणाली को प्राथमिकता दी जाए और अधिक से अधिक युवाओं तक पहुंचाया जाए, तो यह राष्ट्र को सशक्त, आत्मनिर्भर और वैश्विक स्तर पर प्रतिस्पर्धी बनाने में सहायक सिद्ध होगी। तकनीकी और व्यावसायिक शिक्षा कार्यक्रमों को संबंधित व्यावसायिक क्षेत्रों की तकनीकी आवश्यकताओं को पूरा करना चाहिए और व्यक्ति के व्यक्तिगत और सांस्कृतिक विकास के लिए आवश्यक सामान्य शिक्षा भी प्रदान करनी चाहिए और इसमें अन्य बातों के साथ-साथ संबंधित व्यवसाय से संबंधित सामाजिक, आर्थिक और पर्यावरणीय अवधारणाएं भी शामिल होनी चाहिए तकनीकी और व्यावसायिक शिक्षा कार्यक्रमों संबंधित व्यावसायिक क्षेत्रों की तकनीकी आवश्यकताओं को पूरा करना चाहिए और व्यक्ति के व्यक्तिगत और सांस्कृतिक विकास के लिए आवश्यक सामान्य शिक्षा भी प्रदान करनी चाहिए और इसमें अन्य बातों के साथ-साथ संबंधित व्यवसाय से संबंधित सामाजिक, आर्थिक और पर्यावरणीय अवधारणाएं भी शामिल होनी चाहिए।

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Generative AI in Language Learning: Opportunities and Challenges

Sonia Khubchandani, Diggaj

JECRC Campus, Jaipur

Abstract :

Artificial Intelligence (AI), a concept introduced by John McCarthy in 1956, has progressively popped up as transformative force across diverse domains of human activity. Its applications may range in medical field from diagnosing complex diseases using deep learning models to generating creative outputs in English language learning, dramatic, engineering music, and art. AI is also employed in producing immersive multimedia content, enhancing cybersecurity through facial recognition, monitoring environmental changes, improving workplace safety, advancing gaming technologies, and supporting global exploration efforts.

Within the field of education, AI is increasingly recognized for its potential to personalize learning, particularly in English language acquisition. By adapting instructional pathways, fostering learner engagement, and enhancing classroom interaction, AI tools are reshaping the ways educators design and deliver content. However, the adoption of AI-driven systems also raises significant challenges, including issues of data privacy, over-reliance on technology, and inherent algorithmic biases.

This study uses the combined methods research design to critically explore the benefits and limitations of AI integration in educational settings. It evaluates the role of AI in enriching teaching strategies and its influence on students' learning outcomes, participation, and overall performance. The results provide key insights into the evolving role of teachers within technology-mediated classrooms and contribute to current academic discussions on digital transformation in education. In conclusion, the study offers evidence-based recommendations for harnessing AI responsibly, emphasizing the need to balance technological innovation with sound pedagogical practices to achieve sustainable and effective learning outcomes.

Keywords: Artificial Intelligence, Students' Engagement, Feedback, EFL Classrooms, English, Language Learning, Educational Tools.



Uniting Global Industry and Academia by using innovative Teaching Methods

Vinita Sharma

Department of Education, MLSU, Udaipur

Abstract:

In the contemporary knowledge-driven era, the synergy between global industry and academia has become essential for fostering innovation, employability, and sustainable growth. However, a gap still exists between academic learning and industry expectations. This seminar highlights the role of innovative teaching methods as a bridge to unite global industry and academic institutions. Techniques such as experiential learning, problem-based learning, case studies, simulations, project-based collaborations, and the integration of artificial intelligence and digital platforms create authentic learning environments that reflect real-world challenges. By embedding industry-oriented skills into the curriculum, students gain practical competencies, critical thinking abilities, and global perspectives. Furthermore, partnerships through internships, live projects, virtual exchanges, and joint research initiatives strengthen industry-academia collaboration. The abstract emphasizes that innovative pedagogy not only enhances knowledge transfer but also prepares a skilled workforce capable of adapting to rapidly changing global markets. Ultimately, uniting industry and academia through creative teaching approaches ensures a future-ready education system that aligns with societal needs and economic progress.



सतत विकास को बढ़ावा देने के लिए शिक्षा: नवभारत साक्षरता कार्यक्रम की भूमिका

अंजू कुमावत, आरती गुप्ता

बियानी गर्ल्स बीएड कॉलेज, जयपुर

21वीं सदी में शिक्षा केवल ज्ञानार्जन का साधन न होकर सतत विकास (Sustainable Development) की आधारशिला बन चुकी है। संयुक्त राष्ट्र द्वारा घोषित सतत विकास लक्ष्य (SDGs 2030) में लक्ष्य 4 स्पष्ट रूप से “सभी के लिए समावेशी और समान गुणवत्ता वाली शिक्षा सुनिश्चित करने और आजीवन सीखने के अवसरों को बढ़ावा देने” की आवश्यकता पर बल देता है। भारत, जहाँ 2011 की जनगणना के अनुसार निरक्षर आबादी लगभग 25.96 करोड़ थी (पुरुष 9.08 करोड़, महिलाएँ 16.88 करोड़), ने इस चुनौती का समाधान खोजने हेतु नवभारत साक्षरता कार्यक्रम (New India Literacy Programme, 2022–2027) प्रारंभ किया।

इस कार्यक्रम का लक्ष्य वर्ष 2027 तक सभी वयस्क निरक्षरों को साक्षर बनाना है, साथ ही उन्हें केवल पढ़ना-लिखना सिखाना ही नहीं बल्कि पाँच आवश्यक घटकों से लैस करना है:

1. मूलभूत साक्षरता और संख्यात्मकता (Foundational Literacy & Numeracy)
2. डिजिटल साक्षरता (Digital Literacy)
3. वित्तीय साक्षरता (Financial Literacy)
4. जीवन-कौशल (Life Skills)
5. व्यावसायिक कौशल (Vocational Skills Development)

सरकारी आँकड़ों के अनुसार, इस कार्यक्रम से लगभग 5 करोड़ वयस्कों को लाभान्वित करने का लक्ष्य रखा गया है। 2023-24 तक, विभिन्न राज्यों में पायलट परियोजनाओं और डिजिटल प्लेटफॉर्मों के माध्यम से लाखों शिक्षार्थियों को जोड़ने की दिशा में ठोस प्रयास किए गए हैं। यह पहल राष्ट्रीय शिक्षा नीति (NEP 2020) के उस दृष्टिकोण से मेल खाती है, जिसमें शिक्षा को केवल रोजगार तक सीमित न रखकर सामाजिक परिवर्तन और सतत विकास का साधन माना गया है।

शोध से स्पष्ट होता है कि जब शिक्षा प्रणाली में पर्यावरण शिक्षा, मूल्य-आधारित शिक्षण और जीवन-कौशल को सम्मिलित किया जाता है, तो समाज अधिक समावेशी, न्यायपूर्ण और पर्यावरण-संवेदनशील बनता है। उदाहरण के लिए, यूनेस्को (UNESCO, 2021) की रिपोर्ट बताती है कि जिन देशों ने अपनी शिक्षा नीतियों में सतत विकास उन्मुख दृष्टिकोण अपनाया, वहाँ युवाओं की भागीदारी और सामाजिक नवाचार की दर 20-25% तक बढ़ी। भारत में नवभारत साक्षरता कार्यक्रम इस दिशा में ग्रामीण व शहरी दोनों क्षेत्रों को जोड़ते हुए सामुदायिक परिवर्तन का माध्यम बन रहा है।

यह कार्यक्रम जलवायु परिवर्तन का सामना करने, स्वच्छ ऊर्जा उपयोग को प्रोत्साहित करने, लैंगिक समानता बढ़ाने और संसाधनों के विवेकपूर्ण उपयोग जैसे सतत विकास लक्ष्यों की प्राप्ति में योगदान देता है। विशेष रूप से महिलाओं और युवाओं के सशक्तिकरण पर इसका गहरा प्रभाव देखा जा सकता है, क्योंकि आँकड़े बताते हैं कि निरक्षरता की दर में महिलाओं की हिस्सेदारी सबसे अधिक है। यदि 2027 तक यह लक्ष्य पूरा हो जाता है, तो भारत की साक्षरता दर वर्तमान 77.7% (NSO, 2017-18) से बढ़कर 90% से अधिक होने की संभावना है।

अतः यह निष्कर्ष निकाला जा सकता है कि नवभारत साक्षरता कार्यक्रम केवल एक शैक्षिक योजना नहीं, बल्कि एक सामाजिक परिवर्तनकारी आंदोलन है। यह वयस्क शिक्षा, विद्यालयी शिक्षा और सामुदायिक शिक्षा को जोड़कर भारत को न केवल ज्ञान-आधारित समाज की ओर अग्रसर करता है, बल्कि सतत विकास लक्ष्यों (SDGs 2030) की प्राप्ति हेतु वैश्विक प्रयासों में भी महत्वपूर्ण योगदान देता है।

कुंजी शब्द: सतत विकास, नवभारत साक्षरता कार्यक्रम, राष्ट्रीय शिक्षा नीति 2020, सतत विकास लक्ष्य, जीवन-कौशल, वयस्क शिक्षा



राजकीय एवं निजी संस्थानों के शिक्षकों की मानसिक संतुष्टि, कार्य संतुष्टि एवं शैक्षिक अभिवृत्ति का तुलनात्मक अध्ययन

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अध्ययन हेतु चयनित शिक्षकों से प्रश्नावली और साक्षात्कार के माध्यम से आंकड़े संकलित किए गए। विश्लेषण से स्पष्ट हुआ कि राजकीय शिक्षकों को नौकरी की सुरक्षा व वेतनमान की स्थिरता के कारण अपेक्षाकृत अधिक मानसिक व कार्य संतुष्टि प्राप्त होती है। वहीं निजी संस्थानों के शिक्षक प्रतिस्पर्धी वातावरण और नवीन शिक्षण विधियों के प्रयोग से अधिक प्रगतिशील शैक्षिक अभिवृत्ति प्रदर्शित करते हैं।

निष्कर्षतः यह कहा जा सकता है कि दोनों ही वर्गों में संतुष्टि व अभिवृत्ति की प्रकृति भिन्न होते हुए भी शिक्षा व्यवस्था के लिए पूरक सिद्ध होती है। यह अध्ययन नीति निर्माताओं व प्रबंधन निकायों के लिए उपयोगी होगा, जिससे शिक्षकों की कार्य क्षमता और शैक्षिक गुणवत्ता में सुधार लाया जा सके।

मुख्य शब्द: मानसिक संतुष्टि, कार्य संतुष्टि, शैक्षिक अभिवृत्ति, राजकीय शिक्षक, निजी शिक्षक।





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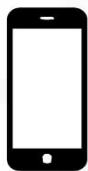


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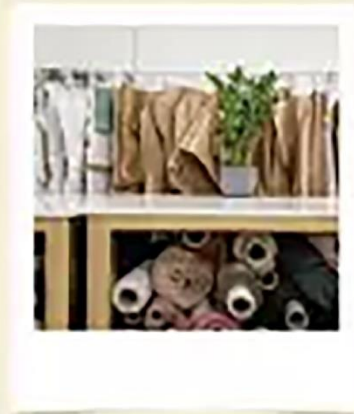
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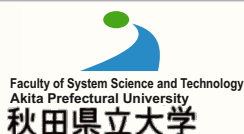
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