Justice Basheer Ahmed Sayeed College for Women

(Autonomous) Chennai 600018

(S.I.E.T.)

College with Potential for Excellence

Accredited by NAAC in 2022 at A^{++} Grade (4th Cycle)

An ISO Certified 9001:2015 Institution

Proceedings of the National Conference on Higher Education Initiatives: Trends, Technologies and Transformations (HEITTT)

07.04.2025 & 08.04.2025

Organised by

INTERNAL QUALITY ASSURANCE CELL (IQAC)

NATIONAL CONFERENCE
ON
HIGHER EDUCATION INITIATIVES: TRENDS, TECHNOLOGIES AND TRANSFORMATIONS (HEITTT)

7th & 8th April 2025

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PREFACE

Higher education serves as a cornerstone for societal progress, fostering intellectual growth, innovation and sustainable development. In alignment with this vision, the Internal Quality Assurance Cell (IQAC) of Justice Basheer Ahmed Sayeed College for Women plays a vital role in ensuring quality enhancement and sustenance within the Institution. The IQAC has consistently worked towards the development of a structured framework for conscious, consistent and catalytic improvements in academic and administrative performance. Through various quality initiatives, it has paved the way for innovative strategies that drive Institutional Excellence.

To cater to the needs of the current Higher Education Scenario the IQAC is organising this National Conference which is designed to explore and delve on initiatives to be adopted in transcending to greater heights in the field of Higher Education .The conference will bring together experts from academia, industry, and policy-making to discuss transformative strategies for integrating technology, fostering interdisciplinary learning, promoting inclusivity, and enhancing research impact. By prioritizing student well-being, experiential learning, and digital transformation, this event seeks to redefine higher education in alignment with global standards.

The conference will focus on key themes, including tech-driven education, equitable and inclusive learning, sustainable initiatives on campuses, and industry- academia synergy. With an emphasis on research collaborations and policy reforms, this forum will serve as a platform to share innovative ideas and best practices for building a future-ready education system. We invite scholars, educators, and stakeholders to join us in shaping an academic framework that nurtures responsible global citizens and contributes to a sustainable future.

Dr. Amthul Azeez

Patron

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FOREWORD

It is my honour and privilege to write the foreword to the proceedings of the National Conference on Higher Education Initiatives- Trend, Technology and Transformation organized by the Internal Quality Assurance Cell of the Justice Basheer Ahmed Sayeed College for Women, Teynampet, Chennai.

Higher education is undergoing a significant transformation driven by technological advancements, shifting societal needs, adoption of sustainable development goals and a growing focus on inclusive online learning.

Institutions are leveraging technology to improve teaching -learning, student engagement and faculty performance. Institutions are prioritising access, designing curriculum and enhancing digital platforms to meet diverse learning needs.

In this context, the conference aims to gain knowledge on critical issues like fostering global collaborations, embracing lifelong learning and offering courses designed to support ongoing skill development and partnering with industries to identify key competencies.

Finally, I thank the support provided by the management, the Principal and Correspondent, the IQAC members, authors, reviewers and faculty for making the conference a grand success.

N. Sujatha

Dr. N. Sujatha
Convenor

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PROGRAMME SCHEDULE

DAY 1 - 07/04/2025 - Monday

09.30 a.m. - 10.30 a.m. **Inauguration**

10.30 a.m. - 11.00 a.m. **Tea Break**

11.00 a.m. - 12.00 noon **Technical Session - I**

Enhancing Teaching Pedagogy : Integrating LMS and Technology driven Learning

Dr. Bharat Kangude,
Associate Professor, Physics,
PDEA's Anantrao Pawar College, Pune.

12.00 noon - 01.00 p.m. **Technical Session - II**

Empowering Institutions : Strengthening Governance, Workforce Development, Student Engagement and Progression

Dr. S. Badrunnisa
Head of Quality Control,
Krupanidhi Group of Institutions, Bengaluru.

01.00 p.m. - 01.30 p.m. **Lunch Break**

01.30 p.m. - 03.00 p.m. **Paper Presentation**

03.00 p.m. - 04.00 p.m. **Technical Session - III**

Leveraging AI for Student-Centric Curriculum Design

Dr. G. Gladston Xavier
Associate Professor, Social Work,
Loyola College, Chennai.

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DAY 2 - 08/04/2025 - Tuesday

09.30 a.m. - 10.30 a.m.

Technical Session - IV

Driving Progress : Fostering Research, Consultancy and Innovation for a Thriving Future

Dr. Sabesan
Professor of Practice,
VIT, Chennai.

10.30 a.m. - 11.30 a.m.

Technical Session - V

Aligning Sustainable Development Goals with Quality Education : A Pathway to Excellence in Higher Education

Dr. K. Thiyagu
Associate Professor, Department of Education
Central University of Karnataka, Kadaganchi

11.30 a.m. - 11.45 a.m.

Tea Break

11.45 a.m. - 01.30 p.m.

Panel Discussion

Institutional Innovation Strategies to advance SDG's in Higher Education

1. Dr. S. Santhosh Baboo
Principal,
Dwarka Doss Goverdhan Doss Vaishnav College,
Chennai

2. Dr. Priyadarshini Muthukrishnan
Senior Lecturer
Faculty of Education and Liberal Arts (FELA)
INTI International University, Putra Nilai, Malaysia

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3. Dr. Edamana Prasad
Head Teaching Learning Centre,
IIT Madras, Chennai

4. Mr. Udaya Sankar
National Lead - Academia & Government Relations,
NASSCOM

Panel Moderator
Dr. Renuka Rajaratnam
Dean, Research & International Programmes
Stella Maris College, Chennai

01.30 p.m. - 02.00 p.m.	Lunch Break
02.15 p.m. - 03.45 p.m.	Valediction

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INVITED SPEAKERS

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ENHANCING TEACHING PEDAGOGY: INTEGRATING LMS AND TECHNOLOGY-DRIVEN LEARNING

Prof. Bharat U. Kangude

Associate Professor, Department of Physics,

PDEA's Anantrao Pawar College, Pune. (M.S.)

This session will facilitate comprehension of how Learning Management Systems (LMS) are transforming pedagogical approaches, resolving issues associated with technology integration, ensuring inclusivity, and providing support for LMS tools. It is imperative to discuss the transition from instructor-centered to learner-centered education, the expansion of online education, the adoption of micro-credentials, the prioritization of lifelong learning, and the implementation of hybrid/blended models. An exploration of multimedia tools, collaborative learning platforms, digital literacy, accessibility considerations, and formative assessment techniques is warranted. This necessitates the implementation of synchronous/asynchronous teaching, customized schedules, and resilient educational models. Furthermore, communication strategies, educator development, and the mitigation of digital equity gaps must be considered.

Need for Digital Adaptation

It emphasizes the imperative for digital transformation within educational settings, driven by student demand for technologically enriched and interactive learning environments. It further underscores the competitive necessity for institutions on both global and local scales and the potential to achieve superior learning outcomes through the implementation of personalized technologies. Additionally, enhancements in administrative efficiency and academic management are anticipated.

Introduction to LMS

A Learning Management System (LMS) is a software application designed for the administration, documentation, tracking, reporting, and delivery of educational courses or training programs. These systems provide a centralized platform for managing content, assignments, evaluations, and communication. Examples of prominent LMS platforms include Moodle, Canvas, Blackboard, and Google Classroom. Furthermore, the market offers

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both Open Source solutions, such as Moodle and Open edX, and Proprietary options, including Canvas and Blackboard.

Comparative Overview of LMS Platforms

Moodle's adaptability, coupled with its extensive plugin ecosystem, enables the management of sophisticated courses. Google Classroom provides a streamlined experience with seamless integration into the Google Suite. Canvas offers robust analytical tools, a user-centric interface, and superior support services. Blackboard's comprehensive features and high integration capabilities make it well-suited for large academic organizations.

Benefits of LMS Integration

The integration of a Learning Management System (LMS) facilitates centralized content access, augments student engagement through interactive modules, enables efficient progress monitoring, and optimizes assessment processes, concurrently decreasing administrative overhead.

Transforming Pedagogy through LMS

The Learning Management System facilitates a transition towards active and interactive pedagogical methods, student empowerment through customized learning trajectories, and the implementation of pioneering instructional strategies such as flipped classrooms and blended learning models. Furthermore, it supports ongoing and formative assessment practices.

Teaching Models

Blended Learning integrates traditional and online learning modalities. The Flipped Classroom pedagogical approach involves the delivery of instructional content prior to class sessions, thereby facilitating in-class discourse and application exercises. Hybrid Teaching employs both synchronous and asynchronous methodologies.

LMS and Inclusive Learning

The Learning Management System (LMS) possesses the capability to accommodate a wide spectrum of learning aptitudes by means of accessibility augmentations, such as closed captioning and transcription, alongside personalized learning trajectories featuring alternative modalities.

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Interactive Tools for LMS

Interactive tools encompass gamified learning platforms such as Kahoot and Quizizz, online discussion forums, brief assessment exercises designed to elicit feedback, and multimedia learning materials including video and audio content.

Evaluation

Evaluation methodologies encompass project-based assessments, portfolio reviews, peer appraisals, plagiarism detection software (e.g., Turnitin), standardized rubrics, performance analytics dashboards, and electronic portfolios.

Improving Cooperation

Cooperation can be augmented through the cultivation of interpersonal skills, collaborative assignments facilitated by Learning Management System platforms, concurrent document editing (e.g., Google Workspace), and virtual parallel sessions (e.g., Zoom, Teams).

LMS Implementation in Specific Fields

Learning Management System (LMS) implementation demonstrates variability across academic disciplines. Fields within the Humanities and Social Sciences tend to employ discussion forums, digital storytelling, and peer evaluation methodologies. Commerce and Management domains frequently utilize scenario-based learning, case studies, and data analytics. Science and Pharmacy curricula often integrate virtual laboratories, 3D animations, and clinical scenarios. Technology and Engineering disciplines typically incorporate project-based learning, coding laboratories, and simulations.

Challenges in LMS Integration

Challenges include technological hesitance, training issues, infrastructure constraints, and data security.

Strategic solutions and best practices encompass professional development and faculty training, phased integration strategies, technical support mechanisms, and institutional policies. A case study of Symbiosis International University's Moodle deployment offers valuable insights into successful Learning Management System (LMS) implementation. Future trends in LMS and educational technology include AI-driven personalized learning, Augmented Reality (AR)/Virtual Reality (VR) technologies, and predictive analytics.

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In conclusion, successful LMS integration hinges on addressing challenges like technological hesitance and infrastructure limitations through strategic planning, faculty training, and robust technical support. The future of LMS lies in embracing AI-driven personalization, AR/VR technologies, and predictive analytics, promising a transformative impact on education.

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INSTITUTIONAL EMPOWERMENT, GOVERNANCE, WORKFORCE DEVELOPMENT, STUDENT ENGAGEMENT AND STUDENT PROGRESSION

Dr. S. Badrunnisa

Head of Quality Control, Krupanidhi Group of Institutions, Bengaluru

Institutional empowerment strengthens organizations by enhancing capacity, decision-making, and effectiveness through capacity building, decentralization, inclusive decision-making, policy reforms, governance, and collaboration. These efforts help institutions meet goals and adapt to change.

Institutional governance involves systems and structures that guide direction, control, and accountability. It includes leadership roles, oversight mechanisms, and transparent decision-making, ensuring alignment with values and effective operations.

Workforce development improves skills, knowledge, and employability through education, training, career pathways, job placement, and collaboration with employers to meet job market demands and drive economic growth.

Student engagement reflects the level of involvement in learning, including behavioural, emotional, cognitive, and social engagement. This involves active participation, connection to studies, deep thinking, and peer interactions.

Student progression tracks academic, social, and personal growth, ensuring success through academic achievement, skill development, support systems, retention, and post-graduation success. It prepares students for the next phase of education or their careers, contributing to long-term success.

Together, these concepts drive the growth of institutions and individuals, fostering a cycle of development and achievement.

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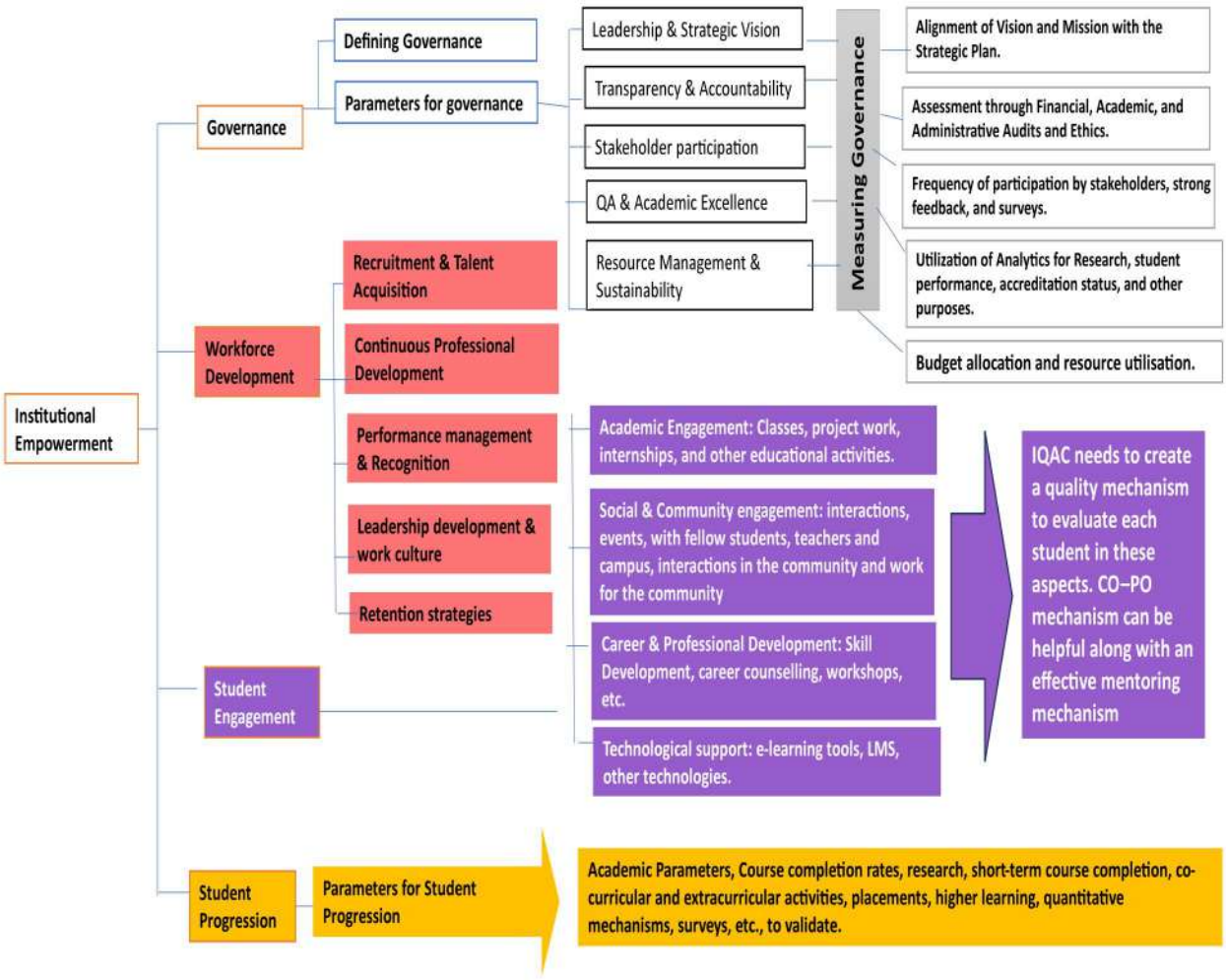

Flowchart showing interconnections between Institutional empowerment, Governance, Workforce Development, Student engagement and student progression

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DRIVING PROGRESS IN HIGHER EDUCATION: FOSTERING RESEARCH, CONSULTANCY, AND INNOVATION FOR A THRIVING FUTURE

Dr. S. Sabesan

Professor of Practice- SSL- Psychology, VIT Chennai

Higher education plays a crucial role in shaping societies, economies, and industries. Research, consultancy, and innovation are the driving forces that enable academic institutions to not only contribute to knowledge creation but also to deliver tangible solutions to the world's most pressing problems.

These three pillars—research, consultancy, and innovation—serve as the bedrock of academic excellence, and together, they lay the foundation for a prosperous and sustainable future. By prioritizing these areas, universities and research institutions can foster a thriving ecosystem that benefits not only students and faculty but also local and global communities.

Research: The Cornerstone of Knowledge and Societal Advancement

Research is the engine of progress, pushing the boundaries of human knowledge while addressing critical global challenges. The role of research in higher education cannot be overstated; it is essential not only for academic growth but also for societal development and long-term economic prosperity. Studies from the Organisation for Economic Co-operation and Development (OECD) underscore the importance of research in driving productivity, innovation, and economic competitiveness.

Globally recognized institutions like MIT (Massachusetts Institute of Technology), Stanford University, and Harvard University have set benchmarks in research excellence, pushing the frontiers of science, technology, and social sciences.

Consultancy: Connecting Academia and Industry

Consultancy serves as a vital bridge between academia and industry, facilitating the transfer of knowledge and innovation into real-world applications. Academic institutions with strong industry ties are uniquely positioned to tackle complex challenges, improve business processes, and foster innovation. Through consultancy services, universities provide not only expertise but also valuable perspectives that help businesses navigate challenges, optimize operations, and implement forward-thinking solutions. Globally,

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Oxford University and Imperial College London are renowned for their consultancy work, contributing solutions in areas like healthcare, sustainability, and technology.

Innovation: Catalysing Technological and Societal Change

Innovation is the key driver of progress in every facet of modern life. It fuels technological breakthroughs, business model transformation, and societal change. Universities that prioritize innovation not only contribute to scientific and technological advancement but also foster the entrepreneurial spirit that drives economic growth. By creating a culture of innovation, higher education institutions serve as incubators for new ideas, products, and ventures that change the world.

Stanford University, Harvard University, and Imperial College London are global leaders in innovation, shaping industries and societal norms through their focus on entrepreneurship, technology, and healthcare.

Strategic Approaches to Foster Research, Consultancy, and Innovation

To effectively advance research, consultancy, and innovation, academic institutions should:

1. **Encourage Cross-Disciplinary Research**: Facilitate collaboration across departments to address complex global challenges.

2. **Strengthen Industry-Academic Partnerships**: Build robust ties with industries to ensure research is relevant and actionable.

3. **Foster Entrepreneurial Ecosystems**: Create innovation hubs that support startups and entrepreneurial ventures.

4. **Invest in Infrastructure and Funding**: Provide world-class research facilities and competitive funding to attract top-tier researchers.

5. **Cultivate a Culture of Innovation**: Promote creativity and risk-taking to drive progress.

6. **Promote Global Collaboration**: Engage in international research partnerships and student exchanges to tackle global issues.

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Conclusion

The future of higher education hinges on its ability to foster research, consultancy, and innovation. Institutions like MIT, and Stanford demonstrate the transformative power of these pillars in advancing knowledge, solving real-world problems, and driving global progress. By prioritizing these areas, universities can not only enhance their educational offerings but also contribute to building a more sustainable, prosperous future for all. The time to act is now. By embracing research, consultancy, and innovation, higher education can lead the way in shaping a better tomorrow.

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ORAL PRESENTATION

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TECH-DRIVEN EDUCATION: THE ROLE OF AI, VR, AND DIGITAL TOOLS IN FUTURE-READY LEARNING

A. Arivuselvi[1], C. Kalaiselvi[2]

[1] Research Scholar, Department of Computer Applications,
Tiruppur Kumaran College for Women, Tiruppur, Tamilnadu.
[2] Associate Professor and Head, Department of Computer Applications,
Tiruppur Kumaran College for Women, Tiruppur, Tamilnadu.

ABSTRACT

The rapid advancement of digital technologies has revolutionized higher education, transforming traditional learning models into interactive, personalized, and immersive experiences. Artificial Intelligence (AI), Virtual Reality (VR), and digital learning tools are reshaping educational methodologies by enabling adaptive learning, real-time feedback, and experiential simulations. These innovations enhance student engagement, improve learning outcomes, and bridge accessibility gaps, aligning with the objectives of Sustainable Development Goal 4 (SDG 4) Quality Education. This study explores the impact of AI-driven personalization, VR-based immersive learning, and digital platforms such as Massive Open Online Courses (MOOCs) in fostering future-ready education. A systematic literature review and case study analysis evaluate the effectiveness of these technologies in higher education institutions. Findings suggest that AI-powered learning enhances customization, VR- based simulations improve practical skill acquisition, and digital tools expand global access to quality education. However, challenges such as cost, infrastructure limitations, and ethical concerns related to data privacy persist. The study concludes with recommendations for integrating AI and VR into mainstream education, proposing policy interventions and institutional strategies to maximize their benefits while addressing existing barriers.

Keywords: Artificial Intelligence, Virtual Reality, Digital Learning, Higher Education, Smart Classrooms, EdTech

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TECH- DRIVEN EDUCATION

N. Ferhat Kathu

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ABSTRACT

Over the past few decade, student's learning expectations have evolved, making traditional teaching methods less effective. Traditional teaching methods, such as static materials and lecture-based instruction, are no longer effective approaches to promote learning. Technology-driven learning has emerged as a result of the revolution in education brought about by the incorporation of technology, which has created opportunities for innovation and improvement. This study investigates the impact of technology-driven education on student learning outcomes, instructional efficacy, and institutional efficiency. Our results demonstrate how technology-enhanced classrooms increase more accessibility, encourage better levels of student understanding, participation, and boost academic performance. Education systems can embrace data-driven teaching strategies, for providing real-time feedback, and enable individual learning experiences by integrating digital tools like AI, VR, and others. These features improve educator performance and streamline institutional operations.

Furthermore, technology acts as a tool for innovation, inclusion, and quality as the global education environment changes to meet the demands of a world that is changing quickly and becoming more interconnected. Traditional learning paradigms are being reshaped by tech-driven education, which supports varied learning styles, bridges learning gaps, and encourages adaptable teaching approaches, to develop more dynamic, effective, and fair educational system. This study emphasizes the advantage of strategically integrating technology in education system.

Keywords: Technology Based Education, Artificial Intelligence (AI), Virtual Reality (VR), Student centred learning

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ENHANCING PHYSICS EDUCATION THROUGH A.I TOOLS: A CAPACITY BUILDING INITIATIVE

Aarthi Ganesan[1*], Kiruthika M[1], Malini M[1]

[1]Department of Physics, J.B.A.S College for Women, Chennai –18, Tamil Nadu.

ABSTRACT

The integration of Artificial Intelligence (AI) in education is revolutionizing the way we learn, teach, and interact with educational content. AI tools are transforming the educational landscape by providing personalized learning experiences, automating administrative tasks, and enhancing student engagement [1-2]. The landscape of physics education is undergoing a significant transformation, driven by the rapidly evolving capabilities of AI [3-4]. Though number of awareness programs, conferences and workshops are organized by educationalist and industrialist on digital transformation of education, yet the blend of technology in regular classroom teaching is becoming a key challenge for the educators. The present work is a small step to bridge gaps in traditional teaching methods and prepare students for future technological advancements. A training material with step by step procedure is prepared and circulated to the learners and educators. Sample feedbacks are collected from individuals. The analysis on user friendly methodology and practicing the AI tools in everyday learning and teaching will be reported.

Key words: AI in Physics Education, digital transformation

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[3] Will Yeadon and Tom Hardy, arXiv: 2309.05163v1 (2023)

[4] F. Mahligawati et al., J.Phy Conf Series 2596 012080 (2023).

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STUDENT-LED INNOVATION FOR SUSTAINABLE DEVELOPMENT: ADDRESSING GLOBAL CHALLENGES THROUGH HIGHER EDUCATION RESEARCH

M. Ramla Asmi[1], A. Arivuselvi[2], P. Dhineshkumar[3]

[1] Assistant Professor, Department of Microbiology, Excel College for Commerce and Science, Komarapalayam, Tamilnadu.

[2] Assistant Professor, Department of Computer Applications, Excel College for Commerce and Science, Komarapalayam, Tamilnadu.

[3] Assistant Professor, Department of Computer Science, Excel College for Commerce and Science, Komarapalayam, Tamilnadu.

ABSTRACT

Student-Led research plays a crucial role in advancing sustainable development, fostering innovative solutions to global challenges. Universities serve as key facilitators by providing students with the necessary resources, mentorship, and platforms to engage in impactful research aligned with the United Nations Sustainable Development Goals (SDGs). Despite increasing institutional support, challenges such as funding constraints, limited interdisciplinary collaboration, and policy gaps hinder the scalability and real-world impact of student-driven projects. This study examines the role of higher education institutions in fostering student-led innovations for sustainable development. A mixed-methods approach is employed, incorporating case studies, empirical research, and a systematic literature review to assess the effectiveness of university-supported sustainability initiatives. Findings indicate that well-structured student research programs significantly contribute to environmental sustainability, social equity, and economic resilience. Additionally, the research highlights the importance of public-private partnerships, interdisciplinary collaboration, and digital platforms in enhancing student engagement. The study concludes with recommendations for strengthening institutional support through funding mechanisms, policy integration, and global networking opportunities. By fostering student-led innovation, universities can drive long-term sustainable solutions while equipping future leaders with the skills needed to address pressing global challenges.

Keywords: Sustainable Development Goals (SDGs), Interdisciplinary research, Environmental Sustainability, Higher Education Research, Economic Resilience.

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EQUITABLE & INCLUSIVE EDUCATION: ENHANCING ACCESSIBILITY, DIVERSITY, AND MARGINALIZED STUDENT SUPPORT

P. Dhineshkumar[1], Dr. A. Nithya[2]

[1] Research Scholar, Department of Computer Science, Park's College, Tirupur, Tamilnadu.

[2] Associate Professor, Department of Computer Science, Park's College, Tirupur, Tamilnadu.

ABSTRACT

Equitable and inclusive education plays a vital role in fostering diverse and accessible learning environments, ensuring that all students, regardless of background, have equal opportunities to succeed. Higher education institutions (HEIs) are increasingly adopting policies and frameworks aimed at improving accessibility, promoting diversity, and supporting marginalized students. However, challenges such as financial constraints, digital disparities, and institutional biases continue to hinder the full realization of inclusive education. This study analyzes the role of accessibility measures, diversity initiatives, and targeted support systems for marginalized students in higher education. Using a systematic literature review and case study approach, the research examines the effectiveness of current policies and their impact on student engagement and success. Findings reveal that while many universities have implemented inclusive strategies, gaps remain in digital accessibility, mental health support, and financial aid. It concludes with policy recommendations to strengthen inclusive education, such as expanding scholarship programs, enhancing assistive technologies, and adopting Universal Design for Learning (UDL). These insights contribute to Sustainable Development Goal 4 (SDG 4), advocating for quality education that is equitable, inclusive, and accessible to all.

Keywords: Equitable Education, Inclusive Learning, Higher Education, Accessibility, Diversity, SDG 4.

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REVOLUTIONIZING EDUCATION: A REVIEW OF EMERGING NEXT-GENERATION TECHNOLOGICAL SKILLS AND LEARNING METHODOLOGIES

Dr. Julia Grace P

Assistant Professor (Grade I), Department of Computer Science,

JBAS College for Women (Autonomous), Chennai 18

ABSTRACT

The rapid advancements in technology are revolutionizing various domains, including education. Traditional educational models, which primarily rely on standardized teaching approaches, are now being challenged by innovative, technology-driven, and learner-centric paradigms. This transformation is driven by the need for more engaging, efficient, and personalized learning experiences that cater to diverse learners.

This review explores emerging next-generation technological skills that are essential for integrating digital tools and resources into modern classrooms. It discusses advanced learning methodologies, including Artificial Intelligence (AI)-driven personalized learning, Virtual Reality (VR) and Augmented Reality (AR)-based immersive education, micro and nano learning, hybrid and blended learning, experiential learning, blockchain for credentialing, gamification and edutainment, social-emotional learning, and analytics-driven learning. These technologies and methodologies are reshaping the educational landscape, making learning more interactive, adaptable, and effective.

This paper provides insights into how these emerging technologies enhance educational outcomes, bridge learning gaps, and offer scalable solutions for the future of learning. Furthermore, it highlights the challenges and opportunities associated with implementing these innovations in different educational contexts.

Keywords: Machine Learning, Deep Learning, Generative AI, Virtual Reality/Augmented Reality, Gamification, Blockchain, Learning Analytics, Hybrid Learning, Digital Pedagogy.

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HARNESSING INTERDISCIPLINARY APPROACHES FOR SUSTAINABLE DEVELOPMENT: REAL-LIFE APPLICATIONS AND SDG CONNECTIONS

Dr. Sangeetha Sathyanarayan

Assistant Professor, Department of Biochemistry, DDGDVC.

ABSTRACT

The Sustainable Development Goals (SDGs) necessitate innovative, interdisciplinary solutions to address complex, real-world challenges. This abstract highlights the importance of converging diverse disciplines to tackle pressing issues, ensuring a sustainable future. By integrating concepts from natural sciences, social sciences, engineering, and humanities, researchers can develop holistic, context-specific solutions. For instance, addressing SDG 2 (Zero Hunger) requires expertise in agriculture, nutrition, economics, and policy-making. Similarly, achieving SDG 13 (Climate Action) demands collaboration among climate scientists, engineers, policymakers, and social scientists.

This interdisciplinary approach fosters:

- Enhanced understanding of complex systems
- Development of innovative technologies and policies
- Effective stakeholder engagement and community participation
- Scalable, sustainable solutions for real-life applications

By embracing interdisciplinary research, we can accelerate progress toward achieving the SDGs, ultimately creating a more equitable, sustainable world for all.

Key words: Interdisciplinary approaches, SDGs, Sustainable development

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LEARNING TO EARNING: HIGHER EDUCATION'S ROLE IN ACHIEVING SDG 8'S DECENT WORK AND ECONOMIC GROWTH IN CHENNAI

[1]Maria Jecintha J, Dr. J.M. Arul Kamaraj[2]

[1]Research Scholar, Department of Social Work, Loyola College

[2]Research Supervisor, Department of Social Work, Loyola College

ABSTRACT

Sustainable development goal 8 centers around economic expansion and employment growth that are productive and sustainable. It also addresses issues of full employment and acceptable work for all people. This is where higher education becomes significant as it equips a person with the necessary proficiencies and knowledge to operate effectively in a constantly evolving workforce. Institutions of higher learning are centers of technological progress, research and training, and they also help to establish the relationships between employment and education.

This study has used the qualitative approach to analyze the role of higher education institutions in the achievement of SDG 8. The research has done a single case study and analyzed the different actions taken by the educational institutions towards meeting SDG 8. This approach has allowed a comprehensive analysis of the role of higher education in the contemporary economy, focusing on best practices for employability, skill development, and economic growth. The focus of this research work was on 6 Arts and Science Colleges in Chennai, 2 from the Northern, 2 from the Central, and 2 from the Southern regions of Chennai. The content analysis technique was applied to collect and interpret data for the different activities conducted by the higher educational institutions pertaining to SDG 8.

This study described how higher education institutions economically develop a region through entrepreneurship, employability, and collaborative work between industries and science. It also identified the gaps which include skill mismatches, unemployed graduates, and agiles strategies to cater to a changing workforce marketplace. The study suggested programmatic changes to leadership and management education as one resolution to strengthen the achievement of SDG 8 in the context of the university's role in economic development. It contributes to the achievement of SDG 8 by meeting the inclusive educational, curricular, and academic-industry partnership integration requirements. The research has set out the most effective ways and policy suggestions for the contribution of higher education institutions to economic development and the achievement of decent work for all people.

Keywords: SDG 8, Higher education, Decent work, economic growth, employment, entrepreneurship.

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SUSTAINABILITY THROUGH GREENERY: AN ECO-CRITICAL STUDY IN THE SELECT INDIAN POEMS

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ABSTRACT

Humans make a huge impact on the environment in many ways like pollution, burning fossil fuels, land encroachment and deforestation. These changes have triggered modifications in the climate, air, water and soil. These negative repercussions affect everyday lives of human beings. According to SDG 15, climate changes have to be counteracted by affirming sustainability in using the natural resources available to mankind. This paper entitled "Sustainability through Greenery: An Eco-critical Study in the Select Indian Poems" aims at presenting the deterioration caused by mankind to the environment and create awareness among people to avoid committing crime against nature through the poems like "Literature and Environment" by Bijaykant Dubey and "Protect Environment" by Dr. Hasmukh Mehta.

Keywords: Nature, Eco-criticism, Environment, Sustainability, Eco-Poetry.

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INNOVATIVE PEDAGOGIES FOR HIGHER EDUCATION: INTEGRATING HOLISTIC AND EXPERIENTIAL LEARNING FOR INFLUENCING REAL-WORLD

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ABSTRACT

Higher education curriculum must include holistic and experiential learning approaches in this era of tech driven education. Innovative pedagogical tools enhance the problem-solving skills by giving scope for critical and creative thinking. These approaches have added importance in contemporary higher education as they foster students to develop their skills and adaptability to the entrepreneurial ecosystem. This descriptive paper explores the various experiential learning approaches such as project-based learning, case studies, simulations, and field-based experiences, Role- Plays, Peer Teachings and significance of interdisciplinary strategies along with these approaches in integrating various informative aspects and knowledge from multiple disciplines to enhance real-world application and this study also highlights their impact on enhancement in their problem-solving skills and critical thinking skill development. The research also explores the synergic effect of industry-academia collaborations, and the role of AI, VR and other various technology in bridging educational gaps and development of skills for upliftment of the whole society. This research also discusses challenges and future directions in implementing these approaches effectively for improving learning outcomes and prepare students for complex, dynamic environments.

Keywords: Holistic and Experiential Learning, Interdisciplinary Strategies, Real-World Applications, Simulation, Industry-Academia Collaboration, AI.

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A STUDY ON THE ADOPTION OF SUSTAINABLE PACKAGING IN THE FMCG SECTOR

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ABSTRACT

Sustainable packaging is increasingly important in the FMCG sector as consumers become more environmentally conscious. This study assesses consumer awareness and perception of green and multi-sensory packaging, exploring adoption reasons and challenges. It also examines consumer opinions on environmental sustainability and its influence on repetitive purchase behaviour.

Conducted in Chennai using a structured questionnaire, the study analyses factors like eco- friendliness, affordability, availability, functionality, and sensory appeal. Findings reveal that consumers recognize the environmental benefits of green packaging but are deterred by higher costs and limited availability. Multi-sensory packaging is seen as innovative, though concerns about waste and recyclability persist.

Results indicate that sustainability significantly shapes consumer choices, with many willing to pay a premium for eco-friendly options. Brands should enhance affordability, accessibility, and clear labelling to drive adoption. Collaboration among businesses, consumers, and policymakers is crucial for promoting sustainable packaging, fostering brand loyalty, and encouraging repeat purchases.

KeyWords: Sustainable packaging, Green packaging, multisensory packaging, Environmental sustainability, FMCG sector

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GREEN INITIATIVES FOR SUSTAINABLE CAMPUS DEVELOPMENT: A STEP TOWARDS ECO-CONSCIOUS HIGHER EDUCATION

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ABSTRACT

The growing need for environmental sustainability has made eco-conscious practices an integral part of campus development in higher education. This paper explores how green initiatives can drive sustainable campus development, fostering eco-conscious practices within academic institutions. It focuses on key strategies such as energy efficiency, resource conservation, waste reduction, adoption of eco-friendly infrastructure etc. The paper highlights successful eco-conscious initiatives implemented on the college campus, including the creation of oxygen zones, strategies to reduce the carbon footprint, e-waste recycling programs, the establishment of vermicomposting units for organic waste management, and efforts to minimize plastic pollution. The conduct of environmental awareness programs and workshops on developing eco-friendly products and commemorating global environmental days like World Environment Day, Ozone day, Water Day, Earth Day have been pivotal in fostering a culture of sustainability. It is imperative for institutions to adopt holistic, future-oriented approaches, paving the way for greener and more sustainable academic environments.

Key words: Sustainability, Eco-conscious, Campus development, Green initiatives, Environmental awareness

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A STUDY ON THE STUDENT-CENTRIC HEI SELECTION TRENDS AND THE IMPACT OF HOLISTIC LEARNING SUPPORT SYSTEM BY HEI ON STUDENT ACHIEVEMENT OUTCOME

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ABSTRACT

Education serves as a foundational pillar to empower individuals and enhances their quality of life. Choosing an institution for higher education, is a complex decision influenced by various factors. This research will explore these key determinants influencing students' choice of higher education institutions and their impact on academic and professional growth. The aim of this study is to find out the factors that students prioritize in choosing Higher education factors and the HEI support for holistic learning in relation to student achievement outcome. Primary data for the study was collected from Students currently pursuing higher education. A structured questionnaire is developed for the collection of data. Structural Equation Modelling (SEM) was used to explore the relationship between the components of student's preference for HEI, Support services by HEI, and student's performance at HEI. The Findings revealed that Student-centric HEI selection trends are influenced by Holistic learning support system by HEI. The learning support system given by HEI helps the students to achieve their life goals. The learning support system in HEI serves as pivotal factor in boosting student potential. This helps students to maximize their capabilities, underscoring the critical role of HEIs in fostering academic and personal growth.

Keywords: Higher education institution, student performance, Support system, Student achievement.

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INTEGRATING SUSTAINABLE DEVELOPMENT GOALS IN HIGHER EDUCATION: HOLISTIC APPROACHES FOR REAL-WORLD CHALLENGES

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ABSTRACT

Higher education institutions play a crucial role in advancing the Sustainable Development Goals (SDGs) through holistic and experiential learning approaches. An interdisciplinary pedagogical approach has been shown to create a learning environment that stimulates students' problem-solving competencies for sustainability-related issues (Alm et al., 2021). This approach encourages students to take ownership of their learning process and indicates a changed mindset and behavior towards sustainability. Outdoor learning has been identified as a potentially effective pedagogical approach for sustainability education, as it lends itself to holistic and experiential learning and enables integration of knowledge and skills from various disciplines (Lugg, 2007). This approach can be significant in developing environmental sensitivity and knowledge, which are components of sustainability literacy. Interestingly, while students rate the SDGs as a useful learning tool, they are often skeptical of their feasibility by 2030 (Jones et al., 2023). This highlights the need for more practical and experiential approaches to demonstrate the real-world applicability of SDGs. The 2030 SDGs Game, for instance, has been presented as a powerful pedagogical tool for interdisciplinary sustainability education (Andreoni & Richard, 2023). This game connects participants to the principles of Agenda 2030 and is suitable for a wide range of educational settings, facilitating the development of problem-solving attitudes, soft skills, and team-working abilities. In conclusion, higher education institutions can advance SDGs through holistic and interdisciplinary approaches that emphasize real-world applications. Experiential learning methods, such as outdoor learning and simulation games, can effectively bridge the gap between theoretical knowledge and practical implementation of SDGs. By adopting these approaches, universities can empower students to become agents of change and contribute meaningfully to sustainable development (Albareda-Tiana et al., 2018).

KEYWORDS: Holistic, Experiential Learning, Interdisciplinary, Sustainable Development Goals, Higher Education Institutions, Real-world Challenges, Lifelong Learning.

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LEVERAGING AI, VR, AND DIGITAL TOOLS IN HIGHER EDUCATION: PAVING THE WAY FOR A FUTURE-READY, SDG-DRIVEN LEARNING ECOSYSTEM-A REVIEW

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ABSTRACT

The incorporation of emerging technologies, such as Artificial Intelligence (AI), Virtual Reality (VR), and digital tools, into higher education is transforming the way students engage with learning. These innovations are not only enhancing the quality of education but also aligning with the broader objectives of the United Nations Sustainable Development Goals (SDGs). AI enables personalized learning experiences, allowing institutions to adapt to the individual needs of students and ensuring that education is accessible to all, thus supporting SDG 4 on Quality Education. VR offers students immersive, real-world simulations, providing them with hands-on experiences that deepen their understanding of global issues, promoting sustainable thinking and global awareness. Digital tools facilitate collaborative learning and the sharing of knowledge across borders, which helps in reducing inequalities and fostering inclusivity, as envisioned by SDG 10. This review paper explores the transformative role of AI, VR, and digital tools in higher education, particularly in supporting Sustainable Development Goals. By synthesizing existing research, we highlight how these technologies enhance learning accessibility, foster inclusivity, and provide immersive educational experiences. Our findings underscore the potential of these innovations to reshape the future of education, and we identify key areas for further exploration in integrating emerging technologies for global educational equity.

Keywords: Higher education, AI, Virtual Reality, Digital tools, Sustainable Development Goals (SDGs), Personalized learning, Inclusivity, Innovation.

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ROLE OF CHATBOTS IN ONLINE EDUCATION

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ABSTRACT

The integration of chatbots in online education is revolutionizing learning experiences. Chatbots play a crucial role in enhancing student engagement, providing personalized learning assistance, and streamlining administrative tasks in the online education ecosystem. By offering 24/7 support, chatbots address student queries related to course content, assignments, and exams, thereby improving accessibility and reducing response time. They facilitate personalized learning journeys by recommending resources and tracking progress, ensuring that students receive timely feedback and support. Chatbots also simplify administrative processes making online learning more efficient and user-friendly. Chatbots support multiple languages ensuring that learners from various linguistic backgrounds can engage effectively with educational content. As online education continues to expand, chatbots are emerging as essential tools for providing scalable, interactive, and accessible learning solutions.

The research has been carried out with 75 college students. The results showed students found these chatbots convenient and helpful as these are available 24/7.

Keywords: Chatbots, Online Education, Student Engagement

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BRIDGING ACADEMIA AND INDUSTRY: A STRATEGIC APPROACH TO SKILL DEVELOPMENT AND EMPLOYABILITY

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ABSTRACT

The dynamic landscape of the job market demands a proactive approach in bridging the gap between academic learning and industry expectations. This paper explores the role of industry-academia synergy in fostering employability by integrating skill-based learning and internship opportunities within academic curricula. By examining successful models of collaboration, the study highlights how experiential learning, industry partnerships and curriculum enhancements equip students with practical competencies. It further emphasizes the need for an adaptive curriculum that evolves with technological advancements, structured mentorship programs that foster professional networking and entrepreneurial mindset that encourages innovation through industry-driven projects and incubators. Precisely, the study underscores the importance of data-driven decision-making, leveraging analytics and industry feedback to refine academic programs and internship structures for optimal student outcomes. Strengthening these collaborations through policy interventions, robust internship frameworks and academia-driven industry engagement ensures that graduates are workforce-ready; ultimately contributing to a sustainable talent reservoir that benefits both students and industry stakeholders. A meta-analysis was conducted on how multinational companies collaborate with academic institutions in bridging the gap to enhance skill development. This paper explores the strategic integration of enterprise education with employability, learning experiences and career development in curriculum design. It highlights the significance of interdependent teaching and learning methodologies as a foundation for fostering essential employability skills.

Keywords: Industry-Academia Collaboration, Skill Development, Employability, Internships, Experiential Learning, Workforce Readiness, Mentorship, Innovation, Industry Networking.

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HARNESSING DIGITAL AND HYBRID LEARNING MODELS TO PROMOTE SUSTAINABLE DEVELOPMENT GOALS IN HIGHER EDUCATION- A REVIEW

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ABSTRACT

The emergence of digital and hybrid learning models marks a significant transformation in higher education, offering new opportunities for students to engage with educational content. The integration of technology, particularly through online platforms and Massive Open Online Courses (MOOCs), has the potential to reshape the accessibility and delivery of education. These innovations are integral to advancing the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 on Quality Education, SDG 10 on Reduced Inequalities, and SDG 9 on Industry, Innovation, and Infrastructure. Digital learning platforms enhance access to educational resources, overcoming traditional barriers of geography, cost, and socio-economic status. Hybrid learning, which blends face-to-face instruction with online components, fosters a personalized and adaptable educational experience. MOOCs, by offering free or low-cost courses, further democratize access to quality education on a global scale. This review paper examines the transformative role of digital and hybrid learning models in higher education, focusing on how technologies like online platforms and MOOCs are reshaping accessibility, equity, and the delivery of education. By analysing current trends, this paper explores the alignment of these innovations with the United Nations Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 10 (Reduced Inequalities), and SDG 9 (Industry, Innovation, and Infrastructure). It highlights the potential of these models to overcome traditional barriers and foster a more inclusive, sustainable, and adaptable global education system.

Keywords: Digital learning, Hybrid learning, Online education, MOOCs, Technology integration, Higher education, Sustainable Development Goals (SDGs), Inclusivity, Accessibility, Global education.

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INTEGRATING SERICULTURE IN HIGHER EDUCATION: A MULTIDIMENSIONAL APPROACH FOR SUSTAINABLE AND EXPERIENTIAL LEARNING

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ABSTRACT

This systematic review explores the implementation of sericulture in higher education as a transformative educational tool that promotes interdisciplinary learning by integrating agricultural science, technology, and the arts. It aims to create a holistic understanding of silk production while aligning with the National Education Policy (NEP) 2020's objective of bridging theoretical knowledge with practical application. Using silkworms as model organisms, this study examines their potential in genetics, biotechnology, and environmental research. Additionally, it investigates how AI, virtual reality, and digital tools restructure sericulture bioinformatics and prepare students for emerging careers. The study highlights sericulture's contributions to sustainability, biodiversity, and inclusive education by offering skills-based livelihood opportunities for marginalized students and promoting mindfulness to alleviate academic pressure. International exposure fosters global collaboration and career mobility, while employability is enhanced through partnerships between academia and industry. Digital and hybrid platforms increase accessibility to sericulture education. Furthermore, this study evaluates sericulture's alignment with Sustainable Development Goals (SDGs), including economic sustainability (SDG 8), sustainable agriculture (SDG 2), responsible consumption (SDG 12), and innovative production techniques (SDG 9). Lastly, integrating sericulture education fosters entrepreneurship and innovation, enabling students to develop new business ideas and products, which can stimulate economic growth and job creation. Collectively, these factors underscore the necessity of incorporating sericulture into higher education curricula.

Keywords: Sericulture, Sustainable Development goals

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DIGITAL & HYBRID LEARNING – FUTURE OF ONLINE EDUCATION, MOOCS, AND TECHNOLOGY INTEGRATION

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ABSTRACT

Rapid technological advancements have revolutionized education, ushering in Digital and Hybrid Learning as transformative paradigms in higher education. This paper examines the potential of digital platforms and hybrid models—including Massive Open Online Courses (MOOCs), virtual classrooms, and blended learning environments—to enhance accessibility, flexibility, and personalization in education. The study explores the integration of AI-driven tools, immersive technologies (such as AR/VR), and data analytics, assessing their role in advancing the United Nations Sustainable Development Goals (SDGs). By analyzing successful case studies and recent innovations, this research proposes strategic frameworks for optimizing digital learning infrastructures, while emphasizing the critical importance of policy reform, industry-academia partnerships, and continuous innovation to build a resilient, future-ready education system. Digital and Hybrid Learning models represent a pivotal shift in the way education is delivered and experienced. By harnessing cutting-edge technologies and innovative pedagogical approaches, higher education institutions can significantly enhance learning outcomes, promote inclusivity, and achieve sustainable development goals. This paper concludes that to fully realize the potential of these models, a concerted effort is required to address existing challenges through policy innovation, strategic partnerships, and ongoing investment in technology and professional development. The future of education lies in the ability to seamlessly integrate digital innovations into learning ecosystems that are resilient, equitable, and adaptive to the needs of tomorrow.

Keywords: Digital and Hybrid Learning, MOOCs, AI-driven tools, professional development, resilient.

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