



PROSPECTS OF ARTIFICIAL INTELLIGENCE (AI) AND PERSONALIZED LEARNING IN INCLUSIVE EDUCATION INTEGRATED TO THE NATIONAL EDUCATION POLICY (NEP) - 2020

VOLUME - I

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Dr.M.Shanmuga Priya | Dr.R.Ramya



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Sponsored by

INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH (ICSSR-SRC)
Hyderabad.

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DEPARTMENT OF COMMERCE (CA)

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

An Autonomous Institution Affiliated to Bharathiar University

Re-Accredited with A++ by NAAC & ISO 9001:2015

Certified NIRF Ranking 101-150 Pollachi,

Coimbatore - 642001 Tamil Nadu

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ISBN: 978-93-94004-29-0

Price: Rs. 650.00/-

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Printed at

SHANLAXPUBLICATIONS

61, 66 T.P.K. Main Road

Vasanthanagar

Madurai - 625003

Tamil Nadu, India

Ph: 0452-4208765

Mobile: 7639303383

[email:publisher@shanlaxpublications.com](mailto:publisher@shanlaxpublications.com)

[web: www.shanlaxpublications.com](http://www.shanlaxpublications.com)

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HUMAN-AI COLLABORATION CLASSROOM SUPPORTS AND FOCUS ON STUDENT ENGAGEMENT AND SOCIO EMOTIONAL LEARNING

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Abstract

The integration of Artificial Intelligence (AI) in classrooms has transformed traditional teaching-learning practices by enabling effective human-AI collaboration. This study focuses on how human-AI collaborative classroom support systems enhance student engagement and promote socio-emotional learning (SEL). AI tools such as intelligent tutoring systems, adaptive learning platforms, and emotion-aware technologies assist teachers in understanding students' learning needs, behavioral patterns, and emotional states. Through collaborative interaction between teachers and AI systems, personalized learning experiences are created, leading to increased attention, motivation, and active participation among students. Human-AI collaboration supports student engagement by providing real-time feedback, adaptive content delivery, and interactive learning environments. At the same time, socio-emotional learning is strengthened as AI tools help identify students' emotional responses, stress levels, and social interactions, allowing teachers to provide timely emotional support and guidance. Rather than replacing teachers, AI acts as a supportive assistant that enhances human judgment, empathy, and instructional effectiveness. This study highlights that classrooms adopting human-AI collaboration demonstrate improved communication, emotional awareness, and student-teacher relationships. The findings suggest that balanced integration of AI with human teaching practices fosters a supportive and inclusive learning environment. The research concludes that human-AI collaboration plays a significant role in improving both cognitive engagement and socio-emotional development of students, making it a valuable approach for modern education systems.

Keywords: Human-AI Collaboration, Student Engagement, Socio-Emotional Learning, Intelligent Classroom Systems, Educational Technology

Introduction

The increasing use of Artificial Intelligence (AI) in education has transformed traditional classroom practices and created new opportunities for effective teaching and learning. Human-AI collaboration in classrooms refers to the combined use of teachers' expertise and AI-based tools to support student learning and development. AI systems assist educators by providing personalized learning content, real-time feedback,

and data-driven insights, while teachers contribute human judgment, creativity, and emotional understanding.

Student engagement and socio-emotional learning (SEL) are crucial for academic success and overall student well-being. Engaging students actively in the learning process and addressing their emotional and social needs remain significant challenges in modern classrooms. Human-AI collaborative classroom supports help overcome these challenges by adapting learning experiences to individual needs and identifying students' emotional responses. This paper examines how human-AI collaboration enhances student engagement and promotes socio-emotional learning, leading to a more inclusive and supportive educational environment.

Role of teachers in Human AI classroom

In an AI classroom, teachers shift from mere knowledge providers to mentors, facilitators, and emotional guides, focusing on human-centric skills like critical thinking, creativity, empathy, and ethics, while AI handles routine tasks like grading and content delivery, enabling deeper student engagement and personalized learning experiences through collaboration. They become curators of AI-driven content, orchestrating learning, teaching responsible AI use, and providing the essential emotional support and real-world context AI lacks.

1. Facilitator of Learning

Teachers guide students in using AI tools effectively. Instead of only delivering content, they help learners understand concepts, ask critical questions, and apply knowledge in real-life situations.

2. Personalization Mentor

AI can analyze student performance and learning styles, but teachers interpret this data to provide emotional support, motivation, and personalized guidance that AI alone cannot offer.

3. Ethical and Value-Based Guide

Teachers educate students about ethical use of AI, data privacy, academic honesty, and responsible digital behavior. They instill human values such as empathy, integrity, and social responsibility.

4. Curriculum Designer and Integrator

Teachers select appropriate AI tools and integrate them into lesson plans, ensuring alignment with learning objectives, syllabus requirements, and students' cognitive levels.

5. Critical Thinking and Creativity Coach

While AI provides information, teachers encourage critical thinking, problem-solving, creativity, and innovation, helping students move beyond rote learning.

Human AI collaboration for active learning

Human-AI collaboration for active learning merges human expertise with AI's data power, creating dynamic learning environments where AI assists teachers with tasks like personalized feedback and data analysis, while humans provide emotional intelligence and strategic oversight, turning classrooms into adaptive, co-learning spaces for deeper understanding and improved engagement, not replacement. This synergy optimizes learning by having AI identify learning gaps and suggest interventions, with humans guiding the process and refining the AI, fostering co-creation of knowledge.

AI Support for Socio- Emotional Learning

AI supports social-emotional learning (SEL) by offering personalized, interactive tools like chatbots for practicing empathy and conflict resolution, analyzing student emotions for early intervention, and creating immersive simulations (VR/AR) for skill development, ultimately aiming to build self-awareness, regulation, and social skills in students, though ethical concerns about data privacy and dehumanization remain important considerations.

- **Chatbots & Virtual Assistants:** Provide 24/7 support, offering guidance on stress, anxiety, and peer pressure, and simulating social scenarios for practice.
- **Personalized Learning:** Adaptive platforms tailor experiences to individual emotional needs, boosting inclusivity and support, notes the Journal of Modern Science.
- **Affective Computing:** Analyzes facial expressions, tone, or text to detect student frustration or engagement, alerting teachers to intervene.
- **Simulations & Gamification:** Creates safe environments for practicing empathy, perspective-taking, and relationship skills through role-playing.
- **Data Insights:** Machine learning helps analyze student interaction patterns, giving educators deep insights for targeted support.



Benefits and Challenges of Human AI Collaboration

Human-AI collaboration boosts productivity, decision-making, and innovation by automating routine tasks and providing data insights, while humans focus on strategy and creativity; however, challenges include building trust, algorithmic bias, data privacy, ethical governance, potential job displacement, and over-reliance, requiring a human-centric approach with training and oversight for successful integration.

Benefits of Human-AI Collaboration

- **Increased Productivity & Efficiency:** AI handles repetitive tasks (data entry, analysis), freeing humans for complex problem-solving and strategic thinking.
- **Enhanced Decision-Making:** AI processes vast datasets to offer insights, leading to more informed and data-driven human choices.
- **Sparks Creativity & Innovation:** AI can generate novel ideas and solutions, acting as a creative partner and enabling new possibilities.
- **Improved Accuracy:** AI tools can catch errors and inconsistencies humans might miss, raising quality.
- **Personalization at Scale:** AI enables customized experiences for many users, from marketing to healthcare.

Challenges of Human-AI Collaboration

- **Trust & Transparency:** "Black box" AI decisions without clear explanations hinder human trust.
- **Bias:** AI can perpetuate and amplify existing biases from training data, leading to unfair outcomes.
- **Job Displacement:** Automation raises concerns about job losses, necessitating workforce retraining.
- **Ethical Issues:** Concerns around privacy, accountability, fairness, and responsible AI use are significant.
- **Over-reliance:** Excessive dependence on AI can degrade critical human thinking and skills.
- **Skill Gaps:** Lack of AI literacy and necessary skills among the workforce can slow adoption.
- **Implementation Costs:** Integrating AI systems can be costly.

Future implementation

Future human-AI classrooms will integrate AI for personalized learning, real-time emotional feedback (via affective computing), and automated tasks, freeing teachers to focus on complex skills like creativity, critical thinking, and socio-emotional learning (SEL), using tools like intelligent tutors and chatbots for empathy training, leading to deeper engagement, better outcomes, and tailored support through data-driven insights. Implementation

involves structured stages, integrating AI in dialogue, activities (discussions, presentations), and assessment, while critically teaching about AI ethics, bias, and prompt design.

Future implementation involves sophisticated AI sensing emotions, ethical AI design with human oversight, and integrating AI for tailored support in metacognition and social skills, creating hybrid learning environments that build academic skills and emotional intelligence.

Conclusion

Human-AI collaboration in classrooms boosts engagement through personalization, instant feedback, and gamification, while supporting socio-emotional learning (SEL) by building student confidence (self-efficacy), fostering peer connection (relatedness), easing workload stress, and allowing teachers to focus on deeper emotional support, creating inclusive environments for diverse needs. Key conclusions highlight AI handles personalized content delivery and data analysis, freeing human educators to nurture essential human-centric skills like empathy, critical thinking, and social interaction, forming a powerful synergy for holistic development.

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