

An Impact of Artificial Intelligence in Education

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ABSTRACT

An Artificial intelligence is known as AI .It is a technology that uses algorithms and machine learning to imitate human being brains. It helps to solve problems, identify images, engrave text, and make predictions. There are various types of AI useful for us such as Artificial general intelligence,Machine learning,Generative AI,Natural language processing and Computer vision. AI createseffective impact in Education and Training field.AI contributes to creation education more reachable.Especially the students with diverse learning abilities or those facing geographical barriers, AI-powered tools maintain to bridge the gap. AI is not only caring to students but also useful to teachers. AI gives support teachers in managerial responsibilities, such as grade and evaluation, release up precious time. Mechanical grading systems mechanical by AI modernize routine tasks, enable educators to focal point on interactive teaching methods, mentorship, and targeted interventions for stressed students.

Keywords: Artificial Intelligence, Machine learning, Education and Training, Grade, Evaluation

1. INTRODUCTION

Artificial Intelligence has the prospective to make over education by optimizing teaching and learning process through modified education algorithms. By identify strength and weaknesses of every learner, AI can mold educational equipment to outfit person requirements better. Virtual actuality experience could be shaped exclusive of leaving the classroom to connect with students from distant countries or showcasing past site that endanger undue environmental problems if used a long time ago. This providelearner with an interactive learning atmosphere that improves appreciativepreservation.Improved actuality equipment implemented using AI promises a more attractive learning practice for students, allow them to cooperate with practical things in ways earlier not possible. By insertion real-time in sequence onto what people see around them use devices or smart phones on smart boards or screens surrounded by classrooms generate innovative immersive experience transform how people distribute information successfully.

Future of AI in Education and its Potential Impact

AI is balanced to modernize edification and address ancient challenge in the industry. With the AI edification market estimated to accomplish \$20 billion by 2027, without any doubt that this technology has a brilliant opportunity in classrooms around the earth.



One of the key remunerations of AI in education is its capability to diminish the burden on teachers and modernize managerial errands. Modified learning, mechanical grading, and intelligent teaching systems are just some of the customs AI is altering how students gain knowledge of and how educators work. By automating regular tasks, teachers have further time for one-on-one communications with students or to focus on more innovative aspects of education.

Improving accessibility with AI-powered tools

AI has abundantly brought into play cases in education, redefining the way students study, teachers educate, and educational institutions operate. Some important AI applications in education include:

Intelligent tutoring systems

AI-powered teaching systems influence highly developed algorithms to suggest students' personalized and real-time comments. As students connect with learning possessions, the AI analyzes their response, identifies areas of trouble, and tailors explanations to improve knowledge. This individualized advance helps connection gaps in perception, adapting the learning speed consequently.

Automated grading and assessment

AI streamlines the grading system by evaluating the student effort and contributing fast and trustworthy assessment. It lightens educators' workload, allowing them to concentrate on customized ways.

Chat bots and virtual assistants

AI-driven chat bots and virtual assistants are essential in bolstering students' learning experiences. These advanced systems provide suitable aid, give guidance to the students through homework errands, address queries, and present precious responses. With their round-the-clock accessibility, these tools enlarge support further than usual class schedules, catering to students' needs at any time.

Curriculum planning

AI assists in curriculum planning by evaluating educational data to find advanced trends and gaps in knowledge outcomes. It suggests updates and changes to curricula based on real-time insights and developing educational principles.

Personalized learning

In a conventional educational setup, students have different abilities and learning preferences. AI in education's objective is to address students' individual requirements by presenting AI-enhanced learning actions, modified educational programs, and other customized facilities. This method ensures that students consent to content and resources that align with their learning methods, promoting commitment and extra successful learning outcomes.

Task automation

AI, elevating practical classrooms facilitates task automation in education. Beyond custom-made teaching, AI handles valuable functions like homework assessment; test grading, research paper organization, report management, and even generating presentations and notes.

Smart Content Creation

AI and ML are influential in education, aiding educators and researchers in crafting creative content for flawless teaching and learning. Here are instances of AI-driven intelligent content generation:

3. OBJECTIVES OF THE STUDY

- ❖ To analyse how AI tools provide customized learning paths and enhance student engagement.
- ❖ To propose guidelines for integrating AI-powered tools, such as generative AI, into existing educational curricula.
- ❖ To Study the evolving role of teachers and the potential for technology.

4. STATEMENT OF THE PROBLEM

Despite the growing use of Artificial Intelligence (AI) tools in education, many learning environments still struggle to effectively address individual student needs and maintain high levels of engagement. Traditional teaching methods often rely on uniform instructional approaches that fail to accommodate differences in learners' abilities, learning pace, and preferences, leading to reduced motivation and disengagement. Although AI tools have the potential to provide customized learning paths and interactive experiences tailored to individual learners, there is limited understanding of how effectively these tools personalize learning and enhance student engagement. Traditional business curricula are not evolving as fast as the pace of AI advancement, resulting in a gap between student skills and industry needs. The lack of clarity regarding teachers' changing responsibilities and the optimal use of technology may result in underutilization or ineffective implementation of technological tools in classrooms.

5. RESEARCH METHODOLOGY

This study adopts a quantitative research design to examine the impact of artificial intelligence in education. Primary data were collected through a structured questionnaire administered to 200 respondents, focusing on personalized learning, student engagement, AI integration, and the evolving role of teachers. Secondary data were gathered from academic journals, books, reports, and credible online sources to support theoretical understanding and contextual analysis. A convenience sampling method was used to select participants familiar with AI-based educational tools. Statistical tools such as percentage analysis, correlation analysis, and ANOVA were applied to interpret the collected data and identify relationships among variables. This methodological approach ensures systematic analysis and enhances the reliability of the study findings.

CORRELATION

Table 1.1: Correlation between AI Dimensions (N = 200)

Variables	Personalized Learning	Student Engagement	AI Integration	Teacher Role
Personalized Learning	1.000	-0.030	-0.055	0.094
Student Engagement	-0.030	1.000	0.044	0.018
AI Integration	-0.055	0.004	1.000	0.015
Teacher Role	0.094	0.018	0.015	1.000

Sources: Primary Data Spss: 2025

INTERPRETATION OF CORRELATION ANALYSIS

The correlation analysis examines the relationship among four major dimensions of artificial intelligence in education: personalized learning, student engagement, AI integration, and the evolving role of teachers. The correlation coefficients indicate generally weak relationships among the variables, suggesting that each dimension contributes independently to the educational experience. Personalized learning shows a very weak negative correlation with student engagement (-0.030) and AI integration (-0.055), implying that improvements in personalized AI tools do not necessarily produce proportional changes in engagement or integration levels. However, a slight positive correlation (0.094) exists between personalized learning and the teacher's role, indicating that AI-supported personalization may complement teacher involvement rather than replace it. Student engagement demonstrates negligible positive relationships with AI integration (0.004) and teacher role (0.018), suggesting that engagement is influenced by multiple factors beyond AI adoption alone. Similarly, AI integration and teacher role exhibit an extremely weak positive correlation (0.015), reinforcing the idea that technology integration and instructional roles function largely as separate yet supportive components.

the results indicate that while AI dimensions are interconnected, their relationships are minimal, highlighting that effective educational outcomes depend on a balanced combination of technology, pedagogy, and learner interaction rather than reliance on a single factor.

ANOVA

Descriptive ANOVA Overview (N = 200)

TABLE 1.2

Dimension	Mean Score	Variance	Respondents
Personalized Learning	3.03	0.421	200
Student Engagement	3.07	0.347	200
AI Integration	2.92	0.416	200
Teacher Role	3.02	0.359	200

Sources: Primary Data Spss: 2025

INTERPRETATION

The descriptive statistics summarize respondents' perceptions of key dimensions of artificial intelligence in education, based on data collected from 200 participants. The mean scores for all dimensions are close to or slightly above the neutral midpoint, indicating an overall positive perception toward the use of AI in educational settings.

Student engagement records the highest mean score (3.07), suggesting that respondents generally feel AI tools contribute positively to making learning more interactive and motivating. Personalized learning (mean = 3.03) and teacher role (mean = 3.02) also show favorable perceptions, indicating that AI-supported customization and teacher involvement are viewed as beneficial components of modern education. AI integration has a slightly lower mean score (2.92), implying moderate acceptance and highlighting that respondents may perceive challenges or limitations in fully embedding AI tools into existing curricula.

The variance values across all dimensions are relatively moderate, showing some diversity in opinions but no extreme disagreement among respondents. Overall, the findings suggest that AI is perceived as a supportive educational tool, particularly in enhancing engagement and personalization, while its integration into formal systems may still require refinement and structured implementation.

CONCLUSION

Artificial Intelligence provides necessary potential to modernize education by personalizing education, civilizing competence, and attractive student commitment. Though, it's essential to concentrate on moral concern, make sure reasonable access, and organize educators and students for the transformative changes AI will carry to the upcoming of learning. AI in teaching should be a instrument to supplement individual capability, not restore them, and necessitate a mutual approach involving educators, policymakers, and technology developers. AI can be use to provide students right to use inventive possessions and instruments, such as design software or creative virtual assistants. These technologies can inspire inspiration and significant thoughts, generous students' opportunity to discover latest thoughts, increase their imagination, and discover inventive solution to compound troubles. By personalizing education, constant and determining evaluation, development collaboration and message, encourage inspiration and critical thinking, and developing complex problem-solving skills, It can helps to create a innovative learning surroundings that holistically develop the skills necessary for achievement in a world of nonstop digitization.

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