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"The Role of AI in Shaping the Future of Higher Education in Jharkhand "

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Abstract

Higher education plays a vital role in shaping the future workforce and driving socio-economic development. In Jharkhand, where education is a key focus area, the integration of AI is gradually transforming universities and colleges. Globally, artificial intelligence (AI) is transforming a number of industries, including higher education in Jharkhand. AI has the ability to improve educational experiences, customise instruction, expedite administrative procedures, and close the knowledge gap between industry and academia. This essay examines how artificial intelligence (AI) is revolutionising higher education in Jharkhand, stressing its advantages, difficulties, and potential. With an emphasis on the opportunities and difficulties it poses, this essay seeks to assess artificial intelligence in higher education. Additionally, it looks into how new technology may affect how schools teach and change, as well as how students learn. In an effort to create a fair, high-quality education for everyone, the article compiles a few instances of the application of AI in education. In order to illustrate how AI technology might assist educational systems in using data to enhance equity and quality in higher education, the article first examines how AI can be utilised to enhance learning outcomes. The advantages, difficulties, and possible dangers of implementing AI in educational contexts are also covered in the article. For this research, researcher has collected samples (N=68) through online (Google Form). Finally, this study reveals positive attitudes toward AI in higher education. Students Frequently use of AI now a days and however, it will be very challenging to forecast anything pertaining to AI and future advancements.

Key Words-Artificial intelligence, Higher education, Transformation

INTRODUCTION

By improving instruction, enabling personalized learning, and automating chores, artificial intelligence (AI) is revolutionizing education and creating a more productive and successful learning environment. AI-powered solutions enable teachers to adapt their lessons to each student's needs by identifying learning gaps, personalizing learning routes, and providing tailored feedback. AI can also automate administrative work, giving professors more time to concentrate on teaching and student interaction.

Our lives are impacted by artificial intelligence (AI), which is developing effectively in the contemporary era. The Dartmouth Summer Scientific Research on Computer Science in 1956 is frequently cited as the origin of artificial intelligence. AI is now used in police cancer investigations, lowering the risk of aircraft crashes, creating driverless cars, and other fields. Robots with artificial intelligence (AI) have surpassed human doctors at mending wounds, conducting search and rescue operations, caring for children, the elderly, and hospital patients, and helping master card companies detect fraud.

In the last 20 years, artificial intelligence (AI) has been used in education. An inspiring test-bed for formalizing psychological feature theories and experimenting with their operationalization has been created by the Intelligent Tutoring Systems (ITS), which cover all of the main AI topics (such as data illustration, machine learning, tongue, planning, reasoning, and explanation). Because of the evolution of educational systems, artificial intelligence (AI) has been used in education in a variety of fields, including physics, programming, essay writing, and reading. The most common uses of AI in academia include autonomous agents, intelligent tutoring, data illustration, and speech processing. Over the years, AI in education has produced engaging interactive experiences and potent learning environments for college students.

Artificial intelligence (AI) in Jharkhand Education System

Jharkhand is actively integrating Artificial Intelligence (AI) into its educational framework to enhance learning experiences and prepare students for future technological advancements.

Higher education is at the forefront of technological transformation, and Artificial Intelligence (AI) stands as a key driver in this revolution. The convergence of AI technologies with academia has led to the evolution of smarter classrooms, intelligent tutoring systems, predictive analytics, and AI-powered research assistance. This thesis aims to assess the current applications of AI in higher education, their impact on academic ecosystems, and the future prospects of AI-driven education models.

Integration of AI with Smart Classrooms:
Ninety schools in the Kolhan division will be converted into smart classrooms with AI-enabled technology by the state government. These classrooms will allow teachers to conduct online sessions from a distance and promote interactive learning.

Improving the School Curriculum:
Students in class nine at CISCE-affiliated schools in Jamshedpur will begin studying AI, machine learning, data science, and robotics. The goal of this program is to give students the fundamental knowledge of developing technologies.

University-Level AI Courses:

- Marwari College in Ranchi has become the first government-run institution in the state to offer a three-year BSc (Honours) course in AI and Machine Learning, starting from the 2024-25 academic session. The Times of India

Technical Institutes Incorporating AI:

- Technical institutions in Jharkhand have been directed to incorporate AI and Data Science into their courses, with at least 10% of the curriculum dedicated to these subjects. This move aims to enhance students' skills in these critical areas. Prabhat KhabarTownpost

AI Initiatives in Schools:

- Vivekananda International School in Jamshedpur hosted a five-day seminar on AI, aiming to integrate AI into teaching methods and improve educational outcomes.

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Government Initiatives:

- The Jharkhand government launched the J-Guruji application, an AI-powered learning platform offering digital books, learning videos, audiobooks, notes, and more, to enhance the educational experience. ETEducation.com

Dedicated AI Educational Projects:

- Project Gyanodaya is an e-learning platform initiated by the Godda District Administration, in collaboration with Eckovation and the Adani Foundation. It connects state government schools in tribal areas with smart classrooms, aiming to improve attendance and provide online education in subjects like science and mathematics. Wikipedia
- These developments underscore Jharkhand's commitment to embracing AI in education, aiming to enhance learning outcomes and equip students with skills relevant to the evolving technological landscape.

Objectives of the Study

The core objectives of this study include:

- To know how AI technologies are being implemented in higher education.
- To evaluate the impact of AI on teaching and learning process
- To understand student perceptions of AI tools in education.
- To find the challenges, ethical concerns, and limitations of AI adoption.

Research Methodology

The research method used in this study is qualitative descriptive method. Primary and secondary data are the two categories of qualitative data, which is the sort of data used in this study. Data sources are gathered using library research methods that make reference to offline and online resources, including books, news articles, and scientific publications from reliable sources. These resources are compiled through debate and connected from one fact to another. In this study, research, interviews, and observation were the methods used to gather data. After analyzing this data, conclusions are made.

Primary data- I am collected primary data around 58 numbers of students. For this I used Google form via online mode and interview also.

Gender Participation- Both Male & Female

Age group-18 to 40 years

Sampling Method- Random sampling.

The study will be conducted in Jharkhand state only.

Applications of AI in Higher Education-

- Personalized Learning

Platforms with AI capabilities, such as Knewton or Coursera, tailor the information flow to each student's unique learning style, encouraging self-paced learning and better academic achievement.

- Research Assistance

AI helps in literature review, data analysis, and pattern recognition in research projects.
Tools like ChatGPT, Zotero, and Connected Papers aid students and researchers in forming their work and gaining insights faster.

- Automation in Administration

Faculty and administrative staff have less work to do thanks to chatbots, virtual assistants, and automated grading technologies. AI is utilized for scheduling, admissions, and student inquiries.

- Research on AI

AI tools speed up research in both the social sciences and STEM fields by assisting with advanced analytics, data visualization, and literature reviews.

- Development of Curriculum

Through the analysis of massive datasets and employer input, AI assists colleges in aligning their curricula with current industry demands and job market trends.

- Inclusion & Accessibility

For students with disabilities or language problems, inclusive learning is made possible by adaptive exams, real-time translation, and speech-to-text systems.

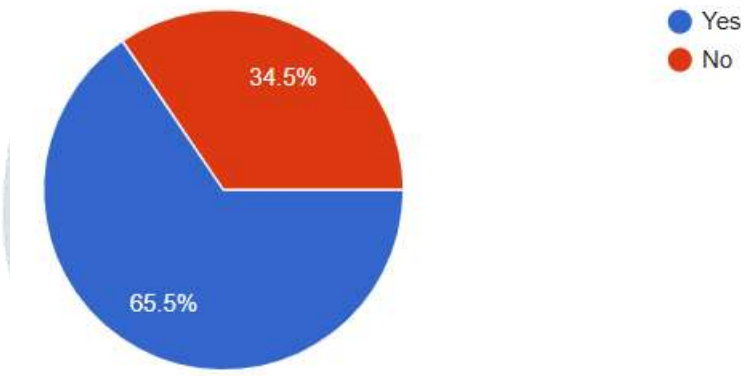
- **Remote & Inclusive Education**

AI-driven platforms enable online learning with real-time translation, speech-to-text, and accessibility features. Helps bridge gaps for students in rural or underserved areas.

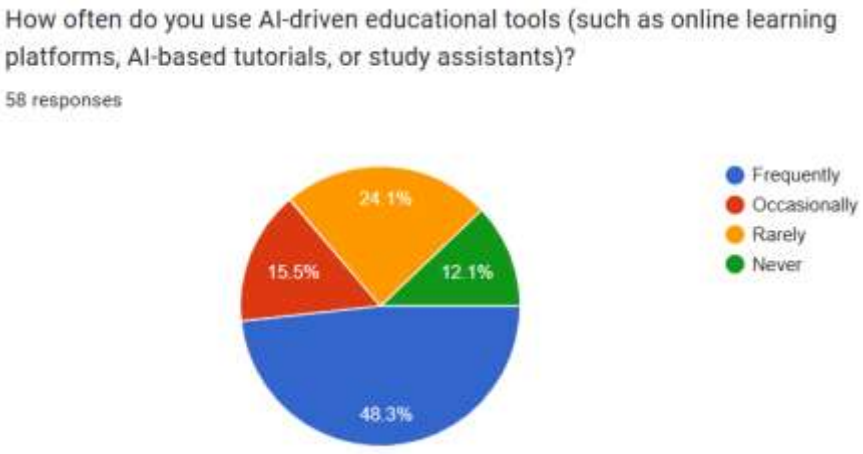
Data Analyse

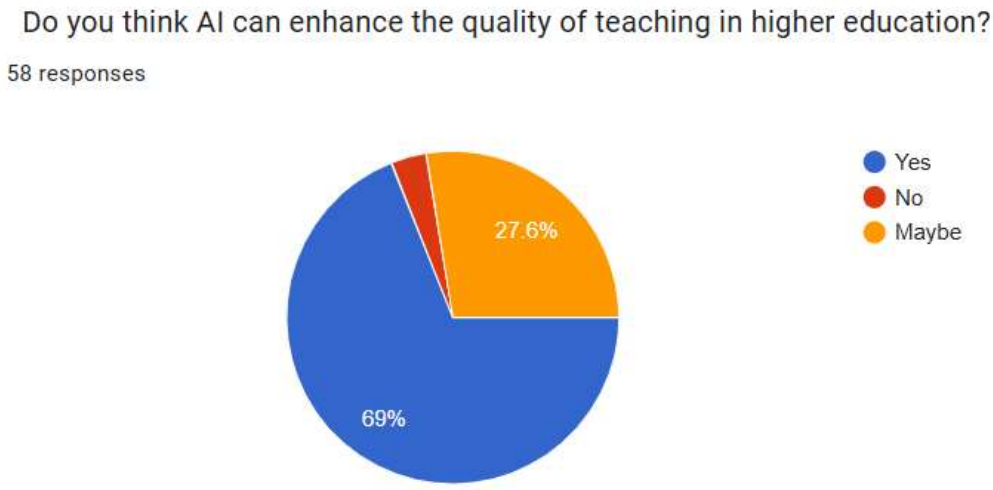
1. How many students ever used AI.

65.5% students used AI where 34.5 % still now used ever.

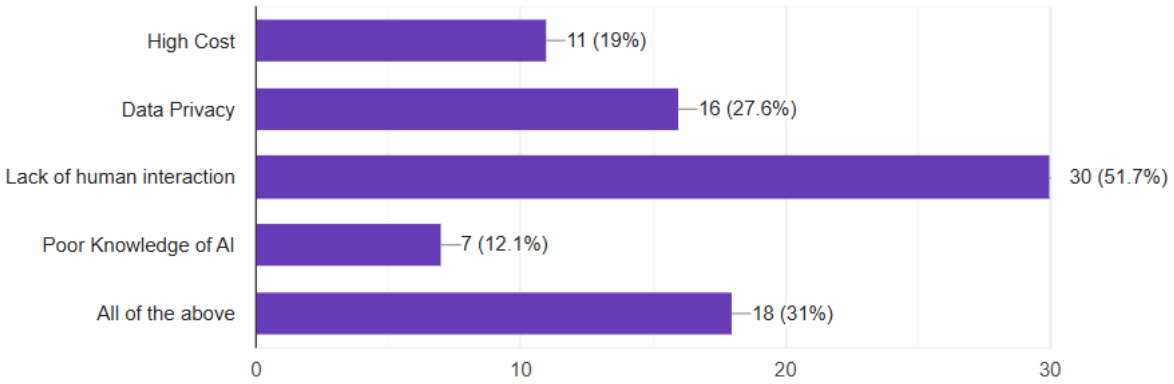


2. How often do students use AI-driven educational tools (such as online learning platforms, AI-based tutorials, or study assistants)?

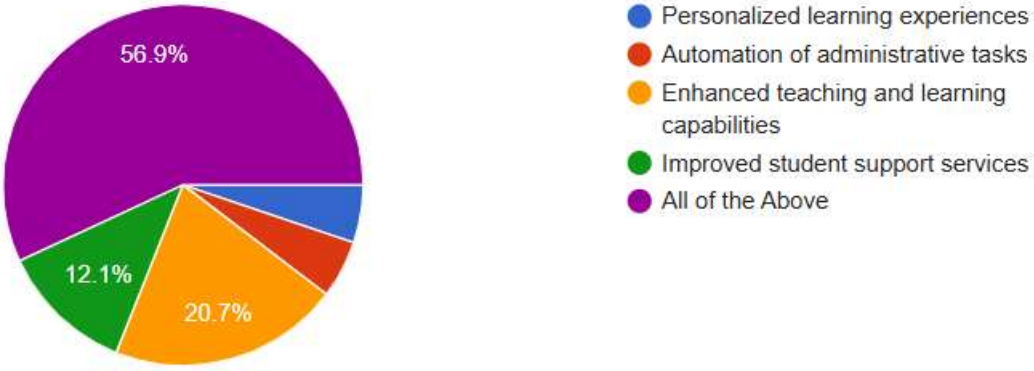




5. What are the biggest challenges regarding the use of AI in higher education?



6. Biggest advantage of AI in higher education?



Challenges of AI in Education:

- **Security and Privacy Issue**

Large volumes of student personal data may be collected and analyzed, which could be dangerous if it ends up in the wrong hands. Institutions need to make sure that the right steps are being taken to safeguard student privacy and stop data breaches.

- **Lack of Trust:**

Students who would rather have human input and evaluation may be reluctant to accept marks or feedback produced by an AI system. Building trust with pupils and ensuring their comfort level with technology are crucial.

- **Lack of Human Interaction**

The perceived decrease in human interaction brought about by the usage of AI tools was the most commonly mentioned worry among respondents. Many participants voiced concern that the vital human connection between teachers and students may be jeopardized by AI-driven learning settings.

- **High Implementation Costs**

Another significant issue that was brought up in the poll was money. Due to their tight budgets, many Jharkhand universities may find it challenging to make investments in the hardware, software licenses, and upkeep of the required infrastructure.

- **Limited Training and Knowledge of AI**

The results of the poll also showed that both students and faculty members generally lacked expertise and comprehension of artificial intelligence. Effective adoption is severely hampered by this digital literacy gap since, without sufficient training, users may find it difficult to engage with AI products in a meaningful way. To solve this issue, faculty development programs and capacity-building activities are crucial.

Finding of Research

The results indicate that Jharkhand's higher education system has a very favorable opinion on and desire to use AI. Even while issues like data privacy and human interaction still exist, there is a strong desire for AI's revolutionary potential to enhance the effectiveness, support, and quality of education.

- Knowledge and Application of AI

The majority of participants are well-informed on artificial intelligence (AI) in education.

- The majority of participants use AI regularly, which suggests that its use in academic settings is expanding.
- Willingness to Use AI: The majority expressed a favourable attitude toward the use of AI in education. Most respondents rated AI as **very useful** and **effective**, especially in enhancing: Teaching and learning capabilities, Student support services
- **Challenges Identified**

The most common concerns raised were:

1. Lack of human interaction
2. Data privacy issues
3. High cost of implementation
4. Poor knowledge of AI tools and technologies

Conclusion

This study investigated the use, perceived advantages, awareness, and difficulties of implementing artificial intelligence (AI) in Jharkhand's higher education institutions. According to the results, most respondents—mostly postgraduate students and faculty members between the ages of 26 and 35—are aware of and often use AI products. The majority of participants agreed that AI had a great deal of potential to improve student support

services, automate administrative work, customize education, and improve teaching and learning experiences. Overall, the study shows that Jharkhand's teachers and students are becoming more receptive to and prepared to use AI in higher education. However, stakeholders must work together across academics, government, and industry to close the current gaps in order to fully realize its benefits. Future studies should look more closely at how AI affects learning outcomes over the long run and how well intervention techniques work to address the issues that have been found.

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