
**A STUDY ON REVOLUTIONIZING EDUCATION BASED ON STUDENT LEARNING OUTCOMES
: AN ANALYSIS ON ARTIFICIAL INTELLIGENCE HUMAN - AI COLLABORATION IN
EDUCATION**

Dr Vijaya Jacqueline¹ and Mr. Nikshit Suresh Nallapagari²

ABSTRACT

Global businesses are actively embracing Industry 4.0 and digital transformation. Concurrently, the education sector is leveraging digital tools to foster personalized learning and equity. Universities surpassing borders and students becoming increasingly global have opened new frontiers through the use of artificial intelligence (AI)-based tools in education. Since the role of AI is inevitable in future education, current research aims to identify the level of awareness of faculty members on the applicability and adoption of artificial intelligence. The study also intended to discover how AI enhanced their learning experience and impacted the degree of work engagement of teachers in higher education. A cluster and multi-stage sampling method was employed to select 150 faculty members from ranked institutions operating in hybrid education modes. Utilizing a quantitative research approach and a structural equation model, factors influencing AI adoption in this context were explored. The findings revealed that AI implementation led to the evolution of robust evaluation and assessment methods, resulting in heightened faculty engagement levels. The study identified that perceived risk, performance expectancy, and awareness play significant roles in influencing work engagement and the adoption of AI within the higher education system through mediating variables, specifically attitude, and behaviour.

INTRODUCTION

Higher education in the 21st century is evolving rapidly, driven by advances in technology, globalization, and changing student demographics. With the widespread availability of online learning platforms, universities are increasingly offering courses and degree programs that can be completed entirely online (Dieguez et al., Citation2021). This practice allows more students to access higher education and offers greater flexibility in their learning process (Neumann et al., Citation2021). Since educational sectors are becoming noticeably more diverse, with students enrolling and learning from a wider range of environments, that leads to a greater emphasis on cross-cultural understanding and global citizenship. As the pace of technological change continues to accelerate, universities are playing a more important role in driving innovation and research (Amornkitpinyo et al., Citation2021). This leads to more partnerships between academia and industry, as well as a greater focus on entrepreneurship and commercialization. In recent recruitment drive employers are willing to opt for graduates with specific skills and competencies, rather than just a broad-based education. Consequently, notable institutions are transforming towards more skills-based learning patterns that offer students practical, career-focused skills (Kocak et al., Citation2021). The educational industry is identifying multiple ways to meet the requirements of stakeholders to enhance the quality of higher education (Khan et al., Citation2022). One of the most optimistic solutions to enhance education is through the implementation of artificial intelligence (AI) (Chedrawi & Howayeck, Citation2019). The future of artificial intelligence in education is highly promising, as technology is gaining drastic transformation and improving the way we learn and teach (Mishra, Citation2019).

Artificial intelligence is playing a vital role in upgrading the quality of higher education in numerous ways (Choi, Citation2020). AI-powered learning approaches have been employed to evaluate students' performance records, determine their strengths and weaknesses, and provide them with customized learning experiences that are tailored to their individual needs. This approach provides students with a tool kit model to gain knowledge more effectively with a productive outcome (Aldosari, Citation2020). AI-based technology such as Chatbots, Virtual Assistance tools, and Adaptive Learning Systems offer immersive and engaging learning experiences that allow students to discover complex theories and solutions in a more interactive and meaningful manner (Chaudhry et al., Citation2023; Pradana et al., Citation2023).

Since the role of AI is inevitable in future education, current research aims to identify the level of awareness of faculty members on the applicability and adoption of artificial intelligence. The study also intended to discover how AI enhanced their learning experience and impacted the degree of work engagement and productivity of

¹ Asst Professor Nirmala Memorial Foundation College of Commerce and Science

² Master's Graduate from Syracuse University (USA)

teachers in higher education. The first section of the manuscript highlights the introduction, and the role of AI in higher education has been discussed, and the second section focuses on existing literature. The third section emphasized the methodological aspects of the research. The results and discussions were presented in the following subsection. The research concluded with suitable practical and theoretical implications.

Identification of Research Gap

Based on the review of literature it was identified that not much research is done in the area of Artificial Intelligence Empowered Learning in Higher Education. As this area got popularity in the recent past and technology driven area therefore the research identification has been started recently

All the factors attracting relating to this AI driven education need to be looked into and consider minutely

in recent years, there has been an increasing trend toward the adaptation of AI in higher education across Asia. Many universities and educational institutions have started to incorporate AI-powered tools into their teaching practices, such as intelligent tutoring systems, chatbots, and automated grading systems. However, the adaptation rate varies across different countries and institutions. This research suggests a multifaceted approach to higher education institutions involving various stakeholders, including legislators, educators, learners, and technology providers. Firstly, Policymakers should promote and create platforms by financial providing aid and infrastructural support system in universities, and educational institutions to embrace a culture of innovation and collaboration, where educators, students, and technology providers can work together to develop and implement AI-powered tools and solutions.

One of the key challenges in the implementation of AI is to tackle concerns regarding privacy and safety. As more students use online-learning platforms and share personal data, it's important to ensure this information has been kept safe and confidential. It is thus the institution's need to establish clear guidelines and criteria for the development and use of AI-powered tools in higher education. These guidelines should address issues such as data privacy, security, and ethical concerns. Since the outcome of the research identified that awareness and performance expectancy is one of significant importance to applying AI in educational institutions, it is essential that universities and institution must reserve budgets to provide training and support for educators to help them develop the skills and knowledge essential to effectively use AI-powered tools in their learning system. This may involve offering opportunities for professional development or partnering with technology providers to offer training programs.

It is imperative that policymakers prioritize the further development of infrastructure and technological advances in educational institutions to apply AI in higher education. To meet these needs, universities must prioritize developing intellectual capital and the resources to manage AI tools and technologies. The institution must be committed to developing systematic resource development programs by reserving a budget to manage AI-based software solutions, offering training and support for faculty and staff, and creating partnerships with industry-leading companies in AI research and development. Similarly, by making a systematic market survey, institutions must develop AI-based curricula and courses to prepare students for future jobs and provide them with the skills needed to succeed in an AI-driven world.

Objectives of the proposed study

The objectives of the study are as follows:

1. To ascertain the conditions of the impact of AI on education
2. To examine the operations of Universities towards AI
3. To analyse emerging Colleges with AI working.
4. To identify the nature of problems affecting the introduction of AI in colleges.
5. To explore the opportunities available to the Policy makers
6. To analyse the awareness of government policies and the support systems available to University for introducing AI
7. To suggest various strategies for developing the business of AI in education industry

Hypothesis

The hypotheses of the study are as follows:

H1: Facility condition significantly influences the attitude of the users in adopting AI in higher education.

Employees' awareness of new systems and technology has a significant impact on their attitude toward effective adoption.

H2: Faculty awareness significantly influences the attitude toward adopting AI in higher education.

H3: Faculty perceived risk negatively and significantly influences their attitude on adopting AI in higher education.

METHODOLOGY

The study is descriptive and quantitative in nature and it is covering the opportunities and challenges faced by colleges and university located in Mumbai city. There is a combination of primary and secondary data analysis.

CONCLUSION

As per a review of the literature, a good number of research is been conducted on AI and Education however, the working of universities and colleges will be considered as the working is different. Therefore, the research topic proposed is innovative and it will help in the future. Hence there is a need to conduct research and frame concrete conclusions on the working of impact of AI on education the revolution it is creating. One of the key questions raised in this study is the factors that influence the attitude of faculty members while adopting AI in higher education. The results identified that facility conditions create a positive impact on users adopting AI in their routine academic practices. This result correlates with previous study findings of Marks and Thomas (Citation2022) identified that facility condition has a significant role in adopting new technology. The awareness of new technology among users emerged as a crucial variable in the current research. Awareness plays a vital role in the adoption of AI technology in higher education (Kour & Karim, Citation2020). The research findings indicate that the awareness of faculty members regarding the application of AI-based technology in their regular academic activities significantly influenced their work engagement.

As AI is new area also many colleges have become autonomous therefore appropriate data is not been maintained. It is imperative that policymakers prioritize the further development of infrastructure and technological advances in educational institutions to apply AI in higher education. To meet these needs, universities must prioritize developing intellectual capital and the resources to manage AI tools and technologies. The institution must be committed to developing systematic resource development programs by reserving a budget to manage AI-based software solutions, offering training and support for faculty and staff, and creating partnerships with industry-leading companies in AI research and development. Similarly, by making a systematic market survey, institutions must develop AI-based curricula and courses to prepare students for future jobs and provide them with the skills needed to succeed in an AI-driven world.

RECOMMENDATIONS

The twenty-first century has posed many challenges to the new world order. The influence of AI on higher education and the impact of higher education on AI are two crucial areas, among many others, worth studying (United Nations, 2018). Thus, the research questions of this article are: What is the impact of AI on higher education? Alternatively, how is higher education going to impact AI?

Artificial intelligence has the potential to transform higher education in many ways, and hence it is mandatory to teach students to use AI-based algorithms. The effective integration of AI in higher education must be done with due diligence with thorough planning backed by ethical consideration (Bates et al., Citation2020). The findings of this study identified the application of AI in higher educational institutions by considering instances and experiences from different Asian countries. To explore the adaptation of AI technology in higher education, we administered the UTAUT model and technology acceptance theories (Davis et al., Citation2023; Sohn & Kwon, Citation2020a; Venkatesh et al., Citation2003). The construction of the model consists of nine associations (hypotheses) between variables. The study has considered teaching staff in higher education as a respondent and identified their attitudes and behaviour as mediating factors in adopting AI which supports the previous study by Chatterjee and Bhattacharjee (Citation2020a) and identified the impact of these factors on the work engagement of faculty members which is distinct from all the previous research (Jiao et al., Citation2022; Sohn & Kwon, Citation2020b). The results have been interpreted with the help of different variables i.e., facilities and conditions, awareness, perceived risk, performance expectancy, effort expectancy, adoption of AI for society, attitude, and behaviour. The results indicate that the faculty's attitude and behaviour have a significant impact on employee engagement and the application of AI in higher educational institutions.