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Investigating a survey on assessing artificial intelligence technology: A key to futuristic perception of education

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Abstract

Artificial intelligence has emerged as a transformative platform in education and research, reforming traditional paradigms and introducing innovative approaches to learning and scientific methodology. This paper explores the survey on assessing artificial intelligence technology. The study gathered responses through an online survey regarding views of academic fraternity on AI futuristic perception in education. In doing so, the present investigation makes important contributions in the direction of an AI driven education system, research, and practical implications of AI in the day-to-day lifestyles of the academicians, bridging the educational gap between disadvantaged and privileged youth. The findings reveal that AI has gained widespread recognition, with a majority of respondent having at least some understanding of the concept. However, a notable portion of respondents may not have encountered AI concepts in their studies or work. There is still a need for further AI education and awareness programs to understand its broader applications, particularly for those who are unfamiliar with its impact and applications.

Keywords: Artificial intelligence, education, academic fraternity

Introduction

In this 21st century, AI is increasingly important and influential in all domains of life. The general question that arise everyone's attention in day-to-day life is: What is AI all about, and what its general perception in society? To date, there are numerous answers to this question in terms of scientific research and literature review across the world. In simple words, it is the basic concept that deals with the intelligent machines in the form of computer programs that perform tasks or generate ideas with their maximum probabilities of success that typically require human intelligence in every sphere of life, such as visualization, speech recognition, reasoning, planning, writing content, explaining different conceptions and whatnot. It addresses the gap between the scientific endeavor and real-world application.

Artificial intelligence-driven technology is a foundation in the evaluation of scientific approaches in the present era, offering tools that enhance efficiency and determine the key to futuristic perception in education among society. It continues to keep enlightening; using it sensibly will be significant to solve the challenges of today and tomorrow.

Regardless of these assistances, we cannot ignore the serious concern about the factual concept behind this fascinating world of AI. A significant worry is the potential reduction of critical thinking, data security, cybercrimes, evaluating, human interaction, and accessing the decision-making power among students due to over-reliance on AI tools. A notable circumstance that needs to be addressed among all is to create more education, awareness, and adequate training regarding the AI pedagogical practices that support ethical implications of AI.

However, the collaboration of both artificial intelligence and human intelligence leads to a promising future. By integrating their unique strengths, AI and humans can accomplish any task with their maximum potential and generate outputs that neither may possibly reach alone. AI's computational power, efficiency, and pattern recognition, combined with human creativity, emotional intelligence, and ethical reasoning. Through blending together on the working platform, it may enhance productivity, innovation, and problem-solving in every possible arena across the globe. The key is to develop AI systems that are aligned with human values, ensuring that technology serves humanity rather than replacing it. Artificial Intelligence (AI) has increasingly become a transformative force in education and research. It plays a significant role in personalized learning, automated assessments, research data analysis, and academic support.

The present study reviews the existing literature on AI awareness, usage, and perception among educators, researchers, and students. The analysis aims to explore the extent of AI adoption, its perceived benefits, challenges, and ethical considerations. Artificial intelligence has rapidly transformed various aspects of human life, influencing industries, whether it is the field of education, research, entertainment, industry, medial or finance. It was observed that respondents from medical and clinical academicians are

more aware of AI terminologies and consumption as compared with postgraduate students. It is suggested that web browsing is the major source of information about AI; the major concern of medical and clinical respondents is less human interaction with patients. (Mengi *et al*., 2024) [5]. Universally, there are diverse attitudes towards AI. The study investigates to understand the reason societal attitudes towards AI technologies are associated with positive or negative perceptions, which is a significant factor in their development and implementation. The study considered that a negative attitude may lead to concern about the potential and ethical risk and may reduce the utilization and adoption. (Ikkatai *et al*., 2022) [8]. Artificial intelligence aligning with public expectations and addressing societal concerns and ethical considerations found that individuals who perceive AI as a potential threat to their jobs or privacy tend to hold more negative attitudes towards AI. (Irsic & Gjergjek, 2024) [2]. Awareness of AI and its potential applications in education and research has grown significantly over the past decade. Several studies highlight the increasing recognition of AI tools, and data analytics platforms among students and faculty members (Luckin *et al*., 2021) [4]. However, the level of AI literacy varies, with some educators and students demonstrating limited understanding of AI functionalities and implications (Zawacki-Richter *et al*., 2020) [9]. Training programs and institutional policies play a crucial role in enhancing AI awareness among academic communities. In academic research, AI is widely used for literature review automation, data analysis, plagiarism detection, and scientific discovery. AI-powered tools like Semantic Scholar and Elicit streamline literature searches, improving efficiency and accuracy (Smith *et al*., 2021) [7]. Machine learning algorithms have revolutionized data analysis across disciplines, from social sciences to biomedical research (Kumar & Sharma, 2019). Moreover, AI-assisted plagiarism detection tools, such as Turnitin, help maintain academic integrity by identifying instances of duplicated content (Das & Behera, 2022) [1]. Student's social background plays an essential role in the formation of their positive attitude towards AI; there must be need to focus on AI-based learning and education essential to be introduced in their curriculum, especially for developing an optimistic AI perspective and its future use. (Katsantonis, 2024) [3] The primary objective of institutions and scientists engaged in AI research is to address complex problems and accomplish tasks beyond human capabilities. It is definitely a big accomplishment in the field of IT that changes the complete outlook of AI worldwide (Saini, 2023) [6].

The objective of this survey study is to evaluate the need for artificial intelligence technology to overview the respondents as a futuristic perception of education. Additionally, the online survey was conducted to understand the familiarity of the respondent's overall outlooks on digital safety on AI in education and research. Hence, the following research question leads the present study.

RQ1: Are you familiar with the concept of artificial intelligence?

RQ2: How did you get to know about artificial intelligence?

RQ3: What is your concern in the usage of artificial intelligence?

RQ5: Are you worried about the ethical implications of artificial intelligence?

RQ8: Do you agree that lack of artificial intelligence training is a significant barrier for researchers?

RQ12: Would you be comfortable with artificial intelligence technology assisting teachers in grading assignments and exams?

RQ13: Do you believe Artificial Intelligence technology can bridge the educational gap between disadvantaged and privileged students?

Methodology

For the present study, quantitative research using the descriptive survey method was used to collect the data, a questionnaire on assessing the artificial intelligence technology and an outline of the respondent's perception of the usages, familiarity, and ethical implications of AI for futuristic education. The study consists of 112 respondents, randomly selected from the academic fraternity, belonging to various colleges in the Sonipat District of Haryana, India. A Google form survey comprising 25 items was sent to respondents over email. The participant responses captured through the survey were examined to analyze the statistical methods for the present research.

Results and Discussion

RQ1: Are you familiar with the concept of artificial intelligence?

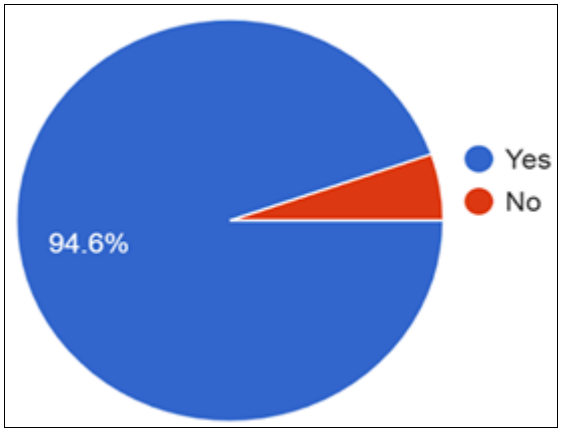

Fig 1: Familiar with the concept of artificial intelligence

The present study depicts through RQ1, representing the respondent's familiarity with the concept of artificial intelligence: As shown in figure 1, the study reported that out of 112 respondents, 106 (94.6%) stated yes, whereas 6 (5.4%) indicated not being familiar, thus the maximum respondents showed familiarity with the concept. It clearly indicates that artificial intelligence widely acknowledged by the academic fraternity in day-to-day life. However, the unfamiliarity represented in the study suggests that there is still a need for educational initiatives to improve literacy and awareness among youth.

RQ2: How did you get to know about artificial intelligence?

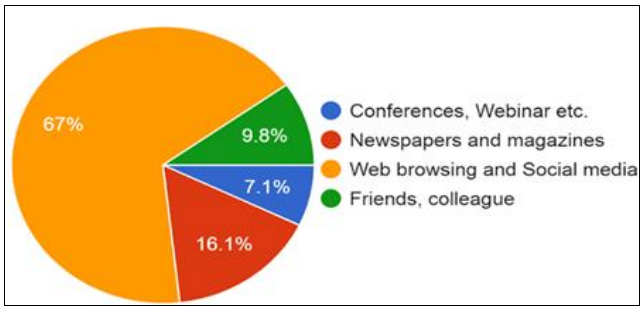

Fig 2: Source of awareness about artificial intelligence

The study sought through RQ2, respondent's source of awareness about artificial intelligence is categorized into four, each section representing the percentage of respondents AI awareness mode: As presented in figure 2, The study reported that 75 (67%) majority of respondents get information about AI from web browsing and social media, (16.1%) a significant portion of respondents determine newspapers and magazines as their source of awareness regarding AI, whereas 11(9.8%) respondents discuss that their personal and professional connections, i.e., friends and colleague, help them to know about the concept of AI. Very few 8(7.1%) respondents learn about AI through educational proceedings such as conferences and webinars; therefore, web browsing and social media acquire maximum concern from the academic fraternity as sources of awareness about artificial intelligence.

RQ3: What is your concern in usage of artificial intelligence?

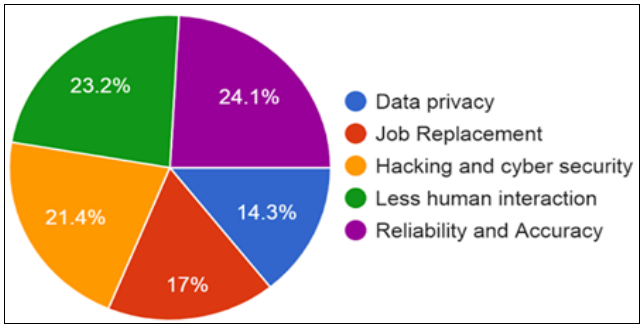

Fig 3: Usage of artificial intelligence

The study, as evidenced by RQ3, represents the concern in usage of artificial intelligence: Figure 3 visually emphasizes the largest concern 27(24.1%) suggests reliability and accuracy, a significant portion 26 (23.2%) showed less human interaction. Further data implies a notable impact that 24 (21.45) concern about hacking and cyber-security, 19 (17%) smaller but relevant issues related to job replacement, and the smallest segment, 16 (14.3%) recommends data privacy. Thus, reliability and accuracy followed by less human interaction and cyber-security were the major concerns, while job replacement and data privacy were the least concerning issues of the academic fraternity in the usage of AI in their research and education.

RQ5: Are you worried about the ethical implications of artificial intelligence?

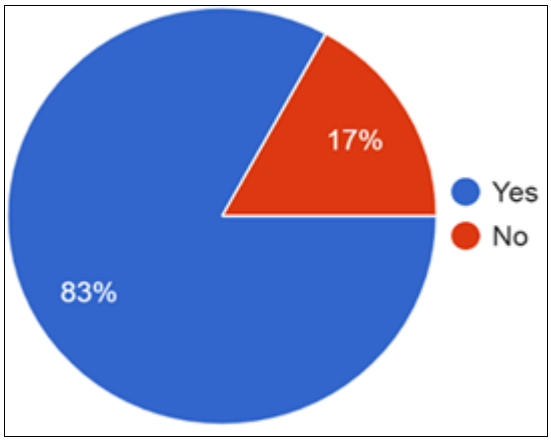

Fig 4: Ethical implications of artificial intelligence

Further, the study illustrates through RQ5, respondents opinions on the ethical implications of artificial intelligence: As highlighted in Figure 4, a vast majority of 93 (83%) respondents believe in ethical consequences regarding artificial intelligence. Whereas a small percentage, 19 (17%) do not consider ethical issues in AI implications. Therefore, the study recommends that regulation and ethical frameworks are a major concern regarding ethical implications in AI admitted by the maximum number of academic fraternities.

RQ8: Do you agree that lack of artificial intelligence training is a significant barrier for researchers?

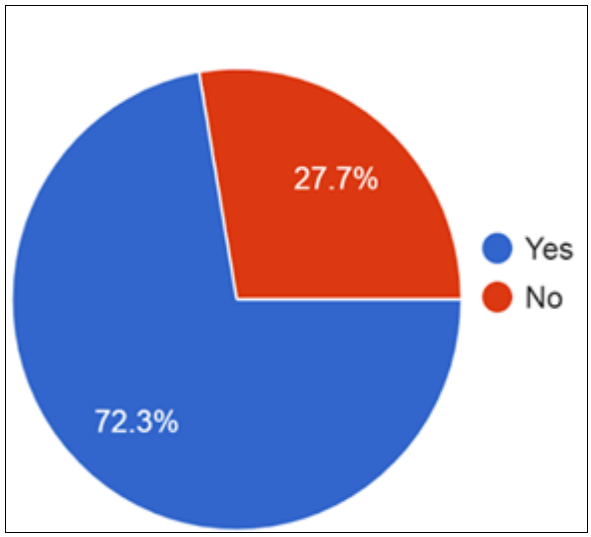

Fig 5: Respondents view on lack of artificial intelligence training is a significant barrier for researchers

The study, based on findings from RQ8, represents the respondent's view that lack of artificial intelligence training is a significant barrier for researchers. Figure 5 presents a clear emphasis that majority 81(72.3%) believe that insufficient training and lack of awareness about AI create obstacles and hamper their task. Whereas marginal respondents 31(27.7%) those who are not strongly inclined

and tend to choose no as they do not perceive AI training as a significant barrier. However, a notable portion of the academic fraternity believes that lack of formal education and training is one of the main reasons they face complexity in the usage of AI tools and techniques, becoming the major obstacle, specifying that AI acceptance varies across different research fields.

RQ12: Would you be comfortable with artificial intelligence technology assisting teachers in grading assignments and exam?

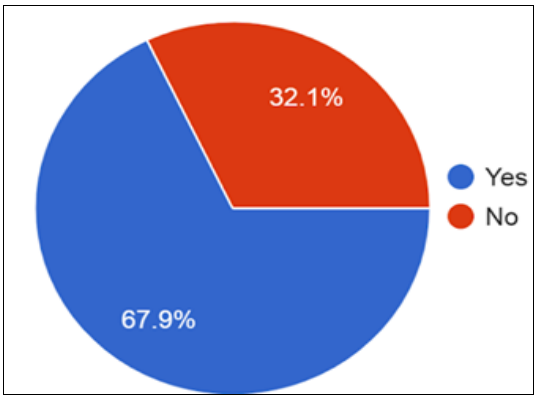

Fig 6: Artificial Intelligence technology assisting teachers in grading assignments

According through RQ12, academic fraternity view on artificial intelligence technology assisting teachers in grading assignments and exam. Figure 6: brings attention to the level of comfort represent by the respondents regarding the implication of grades through AI tools in assisting assignments and exams. Study identified that maximum respondents 76(67.9%) stated Yes, they believe that AI can reduce workload by automating grading assistant. It shows a general trust of academic fraternity in AI's efficiency and reliability. Whereas, 36(32.1%) stated no, that means they are not comfortable with the concept of AI yet, it may be the ethical concerns about over-reliance on AI in education.

RQ13: Do you believe artificial intelligence technology can bridge the educational gap between disadvantaged and privileged students?

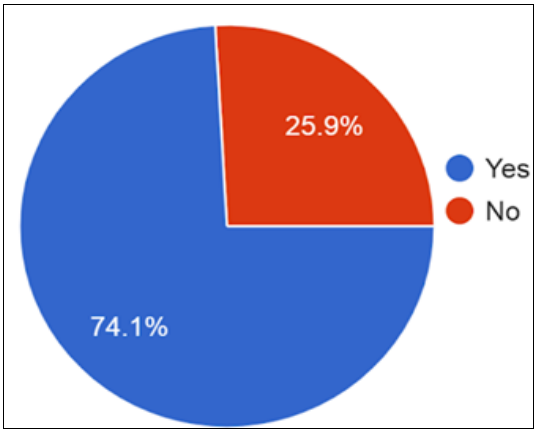

Fig 7: Artificial Intelligence technology can bridge the educational gap between disadvantaged and privileged students

Insights from RQ13 suggest that the study determines the artificial intelligence technology can bridge the educational gap between disadvantaged and privileged students. Figure 7: evidenced that whether AI can help bridge the educational gap between disadvantaged and privileged students. Majority 83(74.1%) stated Yes they believe that AI has the potential to reduce educational gaps on the other side 29(25.9%) stated No, they do not believe that AI can close the gap between disadvantaged and privileged students. However, it is stated from the above overview that AI as a valuable tool in making education more accessible and personalized, there are still challenges that need to be addressed; bridging the educational gap requires not only AI but also infrastructure improvements, teacher training, and reasonable access to technology.

Conclusion

The above study presents a clear emphasis on assessing artificial intelligence technology among the academic fraternity a key to futuristic perception of education. The findings reveals that majority of academic fraternity are familiar and engaging with AI as it plays a crucial role in education and research. More over study also depicts that still a minor group of respondent's shows unfamiliarity towards awareness about artificial intelligence it is due to limited access to technology, lack of formal education and misconceptions about AI. Study further depicts that Social media and web browsing as online platforms are the most powerful foundations for influencing awareness of artificial intelligence in academics and research. Further study give the deep insight about the most significant concerns revolve around reliability, accuracy, and reduced human interaction. Whereas, hacking, cyber security, job displacement, and data privacy remain significant issues, they are perceived as relatively lesser concerns in comparison. The present investigation evidently suggests one of the biggest concerns about AI is that it reduces direct human communication, leading to a more isolated society. In the opinion of academic fraternity as it progressively relevant in research, others feel still they need for formal training to reduce the complexity of AI tools and limited access to AI resources, such as funding, software, data access, or absence of expert guidance create significant barrier. Moving on the another major aspect of present research highlights the depth insight in the vision of academic fraternity AI may reduce the workload by automating grading system, it produce the faster and early feedback to students assessments, It is reliable and minimize human biases in grading. Additionally, Artificial intelligence can be beneficial with combination of both traditional and modern teaching methods along with infrastructure and reasonable access to technology bridging the educational gap between disadvantaged and privileged youth.

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