

A STUDY ON EVALUATING AWARENESS OF AI TOOLS AMONG THE FACULTY MEMBER

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Abstract:

AI technology continues to advance rapidly, it offers numerous innovative tools and applications that can revolutionize the teaching and learning process. However, the successful integration of these AI tools into academic settings relies on faculty members' awareness and understanding of their capabilities. The purpose of this study is to evaluate the awareness of AI tools among the faculty members. The technique used in this study is one sample t-test. The outcome of the study indicated that Research rabbit, Scispace, ChatGPT, Elicit, Grammarly, ChatPDF, Gamma, Scite, Quill Bot, and paper pal have high awareness surrounding them. Whereas, Trinka (grammar checker), Grade scope, Consensus and Jenni AI have low awareness. Further studies can be conducted analysing impact of Artificial Intelligence in education sector.

Keywords: *Artificial intelligence, machine learning, quantitative study.*

Introduction:

Artificial intelligence (AI) has dramatically impacted our daily lives and the way we use the internet. It has the capacity to automate a variety of jobs, particularly in the field of education but also in many other fields. AI has a positive effect on education, especially in terms of how learning occurs. AI-powered educational software can effectively automate processes and pinpoint areas that require development. Additionally, AI-driven software may give both students and teachers insightful feedback. AI-enabled data is also essential for assisting teachers, schools, and students. The benefits of artificial intelligence (AI) in education are numerous and include improving student learning through personalisation, better teaching techniques, automated grading, feedback on course quality, development of global classrooms, performance monitoring, and more. Even though its limitations and application difficulties may not be completely understood, a new and promising technology like AI might appear to provide revolutionary solutions to age-old problems. The capacity of knowledge-based computer systems or other machines to accomplish activities that traditionally require human data

processing and cognitive thinking is known as artificial intelligence (AI) (Andrea et al., 2015). Even if AI has the ability to improve many elements of the world, human endeavours depend on predictions of the future. Our current knowledge enables us to imagine prospective outcomes and strive towards reaching them, even when the future has not yet arrived. To fully appreciate the effects of broad AI adoption in society, a thorough study of the present and its historical background is essential (Bayne, 2015).

In order to build a vibrant academic community, faculty members are the foundation of educational institutions. They offer a plethora of information, experience, and skill. They play a significant part in forming students' brains as educators by encouraging curiosity, critical thinking, and a love of lifelong learning. Their commitment to teaching extends beyond just disseminating knowledge; instead, they work to provide engaging, interactive learning environments that accommodate a range of learning preferences and aptitudes. Faculty members mentor students outside of the classroom, assisting them with their academic goals and professional decisions. They encourage kids to explore their hobbies and identify their abilities by fostering a friendly and loving atmosphere. Advising students on research projects, internships, and other experiential learning opportunities is a frequent responsibility of faculty members, which benefits students' entire educational experience. Faculty members are essential to the management and governance of educational institutions. They actively participate in institutional activities, policy formulation, and curriculum creation, influencing the institution's overall direction and vision. Their dedication to the principles of education, ethics, and intellectual inquiry fosters an environment that is supportive and intellectually challenging for both students and other employees.

This study's importance rests in its comprehension of faculty members' awareness of cutting-edge AI academic tools. The study can help educational institutions create customised professional development programmes for teachers by identifying areas where training and assistance are required by evaluating how familiar they are with these technologies. By effectively integrating AI technology into academic practises, faculty members may improve educational quality and create dynamic, engaging learning environments for students. This can be accomplished by raising faculty members' understanding of AI technologies. The study's conclusions can help guide measures to encourage the use of AI technologies in education, fostering a faculty that is tech-savvy and forward-thinking and better prepare students for a world driven by AI.

Review of Literature:

1. **Kumar, D. N. (2019).** The authors investigated how computer systems may learn, reason, and self-correct using artificial intelligence (AI), which could mimic human intellect. They created amazing applications by fusing AI with other technologies. The goal of the project was to incorporate AI and its methodologies into new educational paradigms in order to create a tailored teaching-learning environment. The AI-based smart learning system included problem-solving, recognition, decision-making, and other capabilities. For thorough learning and assessment, they deployed supervised machine learning and knowledge-based systems. Key AI components were used in the system, which included intelligent teaching and virtual reality. Supervised machine learning (SL) and knowledge-based systems (KB) were used to assess student performance qualitatively. The lecture Bot prototype would need to be improved in order to provide a comprehensive learning experience.
2. **Lindner, A. et al. (2019).** The authors evaluated the perspectives of the instructors on artificial intelligence. Artificial intelligence (AI) technologies are becoming increasingly important in daily life, which has increased demand for AI as a subject in schools. It was crucial to properly train instructors to teach AI in K–12 classrooms. To gauge computer science instructors' understanding of AI and their assessments of its significance for pupils, a questionnaire survey was done. Results indicated that current "hype" themes and media attention had an impact on instructors' awareness about AI. They placed a higher value on sociocultural and technical AI expertise than they did on just application-oriented skills. Teachers also mentioned a need for sufficient teaching resources, examples of best practises, and tools for AI instruction. The addition of AI-related topics to computer science education courses was welcomed despite certain difficulties.
3. **Polak, S. et al (2022).** The study presented an investigation in Bulgaria, Greece, Italy, and Romania on middle school teachers' perspectives regarding teaching digital competencies for AI. Using the Will, Skill, Tool model, the study aimed to inform the design of educational content and online platforms to facilitate AI education integration in classrooms. Through focus groups and a survey, teachers' needs were identified for a supportive online platform. Results indicated a positive attitude towards AI education and motivation to introduce AI-related content. However, teachers exhibited basic

digital skills and limited AI-related skills. Six design implications for a web-based educational platform on AI were formulated, focusing on relevance, interactivity, accessibility, and motivation. These implications aimed to extend computational thinking frameworks to include AI concepts and perspectives.

4. **Sanusi, I. T. et al. (2022).** By outlining the early ideas that 12 African in-service teachers had about how to teach machine learning, this study intended to close the gap. 12 computer science professors from high schools in a few African nations were studied by the writers. On teachers' expectations for teaching machine learning in K–12 contexts, semi-structured interviews and a phenomenographic analysis were done. The study led to the formation of five categories: supporting student technical knowledge, concept knowledge, concentrating on professional development practises, contextualising instructional resources and tools, and sustainability for development goals. The findings indicated the necessity of educating in-service teachers on how to use current machine learning introduction tools. To further integrate machine learning into regular education, instructors should be included in the co-designing of materials while taking the curriculum and contextual aspects into consideration. This engagement would help contextualise machine learning, have a genuine influence, and alter society.
5. **Simhadri, N. & Swamy, T.N.V.R. (2023).** The research paper presented an overview of teachers' expertise of machine learning and artificial intelligence in US schools. The emergence of AI and ML had minimal benefits for the education sector, which mostly concentrated on social requirements like transportation and medical diagnosis. Research methods employed in the study included surveys, literature reviews, document analyses, and expert interviews. It clarified the uses of AI and ML in education as well as possible future research trajectories. To examine a larger variety of learner data, researchers made use of newly developed tools. The study did, however, have significant shortcomings, such as not using all of the sources accessible and potential oversight in related experiments.
6. **Zawacki-Richter, O. et al. (2019).** For the purpose to provide a thorough evaluation of AI applications in higher education, this article. 146 articles were included for synthesis out of 2656 recognised publications from 2007 to 2018 based on specific criteria. Results indicated that computer science and STEM were important fields, and that quantitative techniques were frequently applied. Academic assistance, institutional

services, and four crucial areas—profiling and prediction, assessment and evaluation, adaptive systems and personalization, and intelligent tutoring systems—all saw the use of AIED applications. In order to successfully apply AIED in higher education, the study emphasised the need for critical reflection on difficulties, deeper pedagogical links, and ethical issues.

Objective of the Study:

1. To evaluate the awareness of new AI academic tools among faculty members.
2. To provide with suggestive measures toward creating awareness of new AI academic tools among the faculty members.

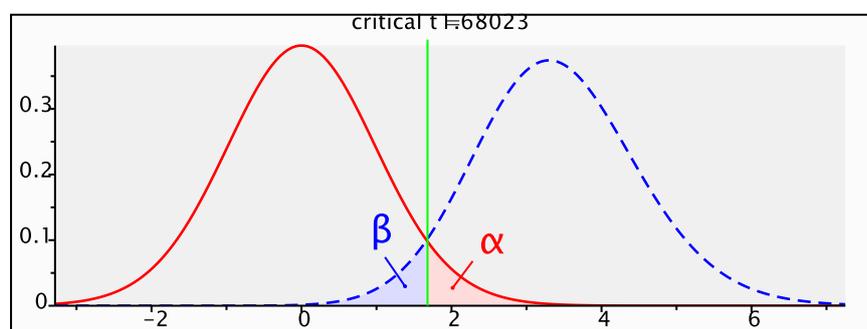
Hypothesis:

Ho: The awareness of new AI academic tools among the faculty members is low (Mean Score ≤ 3)

H1: The awareness of new AI academic tools among the faculty members is high (Mean Score > 3)

Research Methodology:

Descriptive research design is used for the current study. The sample size selected for the study is 225 faculty members. Sampling techniques used for the current study is non probability purposive sampling. Both primary and secondary data collection sources have been used. Parametric one sample test has been used using R studio software. (As per Faul et al minimum required sample to run one sample t-test one tailed=45)



Test family		Statistical test	
t tests		Means: Difference from constant (one sample case)	
Type of power analysis			
A priori: Compute required sample size – given α , power, and effect size			
Input Parameters		Output Parameters	
Determine =>	Tail(s)	One	Noncentrality parameter δ
	Effect size d	0.5	Critical t
	α err prob	0.05	Df
	Power (1- β err prob)	0.95	Total sample size
			Actual power

Table No: 1 Summary Table of Demographics

Variables	Category	Frequency
Gender	Male	93
	Female	132
Age Group	25 years to 35 years	47
	36 years to 45 years	86
	46 years to 55 years	92
Department	Commerce	75
	Arts	75
	Science	75
Years of Experience	1 – 5 years	33
	5 - 10 years	39
	10 -15 years	61
	More than 15 years	92

Data was collected from 225 faculty members, the majority of them were females with 132 respondents and 93 Male. Most of the faculty members belonged to the 45 – 55 years of age with 92 respondents, followed by 86 in 36 years to 45 years category and 47 respondents in 25 years to 35 years category. It was further seen that 92 respondents had more than 15 years of experience, whereas 61 respondents had 10 – 15 years’ experience, 39 respondents have 5 – 10 years of experience and only 33 of them has 1 – years of experience, 75 each respondent belonged to Commerce, Arts and Science faculty.

Data Analysis and Interpretation:**Table No: 2 One sample t test**

Items	t – statistics	P – value	Ha: mean score of awareness of new AI academic tools among the faculty member > 3
Research rabbit	21.09	0.000	High awareness
Scispace	22.11	0.000	High awareness
ChatGPT	20.45	0.000	High awareness
Elicit	24.54	0.000	High awareness
Grammarly	23.18	0.000	High awareness
Trinka (grammar checker)	-20.98	1	Low awareness
ChatPDF	23.00	0.000	High awareness
Gamma	21.43	0.000	High awareness
Scite	20.99	0.000	High awareness
Grade scope	-22.77	1	Low awareness
Consensus	-23.64	1	Low awareness
Quill Bot	22.87	0.000	High awareness
Jenni AI	-24.00	1	Low awareness
Paper pal	22.33	0.000	High awareness

Parametric one sample t – test (one tailed) is applied to examine awareness of new AI academic tools among the faculty members was extracted through the exploratory research. It is seen that $p - \text{value} < 0.05$ and $t \text{ statistics} > 1.96$ for Research rabbit, Scispace, ChatGPT, Elicit, Grammarly, ChatPDF, Gamma, Scite, Quill Bot, and paper pal have high awareness surrounding them. Whereas, Trinka (grammar checker), Grade scope, Consensus and Jenni AI have low awareness.

Conclusion:

The findings of the study revealed interesting insights into the level of awareness surrounding various AI tools among faculty members. Notably, Research rabbit, Scispace, ChatGPT, Elicit, Grammarly, ChatPDF, Gamma, Scite, Quill Bot, and paper pal were found to have high awareness among faculty members. These tools seem to be well-known and recognized by

educators, suggesting a promising level of integration into academic practices. On the other hand, the study also identified some AI tools with relatively low awareness among faculty members. Trinkia (grammar checker), Grade scope, Consensus, and Jenni AI were found to have lower familiarity among educators. This highlights potential areas for improvement in terms of disseminating information and providing training on these tools to increase their adoption and potential benefits in educational settings.

Overall, the outcomes of this study indicate the need for targeted interventions and professional development opportunities to enhance faculty members' awareness and understanding of AI academic tools. By increasing their familiarity with these tools, educational institutions can unlock their full potential to enrich teaching, learning, and research experiences, ultimately fostering a more innovative and technology-driven educational landscape.

To increase awareness around AI technologies with low awareness among faculty members, targeted professional development workshops can be organized, providing hands-on experience and practical use cases. Faculty collaboration and showcases can also be encouraged, where experienced faculty members demonstrate how these AI tools have enhanced their academic activities. Additionally, distributing informational materials, establishing peer support networks, and offering incentives for adoption can further promote faculty engagement with these technologies. Inviting guest speakers and experts to share insights on AI's potential applications in education can inspire faculty members and foster a culture of exploration and innovation in academia. Future research can delve deeper into the factors influencing awareness levels and explore effective strategies for promoting the use of AI tools in academia.

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