Adapting to Change : Prospective Teachers' Perspective regarding learning with AI and Social Media

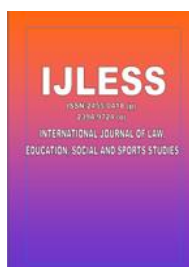## Rinchen Blon Tamang[1] , Dr. P Lavanya[2]

[1]Doctoral Research Scholar, Sri Sathya Sai Institute of Higher Learning, Anantapur, Andhra Pradesh, India,
Email: tamangrinchenblon@gmail.com
[2]Associate Professor and Head, Department of Education, Sri Sathya Sai Institute of Higher Learning
Email:plavanya@sssihl.edu.in

ABSTRACT

This study explores the prospective teachers' attitudes toward using Artificial Intelligence tools and social media for teaching purposes. The study looks at how the digital learning tools have impacted the outcome of learning by the students and assesses how the prospective teachers from B.Ed, M.Ed, MA Education, and PhD students think about the tools. The study used a questionnaire that consisted of 30 questions to collect information on the familiarity as well as preference of prospective teachers' for using AI tools and social media for educational use. Results from the study show that both social media sites, such as YouTube, and AI tools, like Chatgpt, are widely used by prospective teachers for learning. Familiarity with social media showed a strong and positive correlation with the opinion that social media enhances the outcome of learning. Correspondingly, familiarity with AI tools also shows a good correlation with the opinion that AI personalizes the learning experience. Gender influence on using these tools was also studied and it showed that significant differences exist between male and female prospective teachers. The findings suggest that both AI tools and social media are integral to modern learning. They foster engagement, promote collaboration, and encourage students to learn in a personalized manner. Further research is required about the ethical implications, integrating them effectively, and their integration into the future of such educational strategies and learning outcome improvements.

Keywords: Artificial Intelligence (AI) tools, Social media platforms, Collaborative learning, personalized learning, Digital literacy, Hybrid learning approach.

Introduction

In this modern era, the facet of education has been taken over by Artificial Intelligence and Social Media platforms, providing, contributing, and enhancing innovations in the field of teacher education programs. Both act as additional tools, innovating and reshaping the education system for prospective teachers. Platforms like Social Media have emerged as powerful tools, transforming educational landscapes. They offer an interactive and collaborative environment for prospective teachers through platforms such as Twitter, Facebook, Instagram, LinkedIn, YouTube, and specialized forums like Quora and Reddit. These platforms encourage interaction among peers, resource sharing, and knowledge exchange, cultivating a sense of community and promoting collaborative learning.

AI tools, too, have transformed teacher education programs by offering personalized and adaptive learning experiences. AI platforms like Duolingo, Chatgpt, Brainly, and Canvas AI enable individual learning by customizing educational content based on the abilities and preferences of prospective teachers. This approach enhances concept understanding and makes teacher education programs more accessible and diverse, both Social Media and AI tools have remodeled teacher education and proved instrumental in increasing prospective teachers' engagement and outcomes, becoming integral to modern education.

Ethical guidelines and digital literacy programs are required in support of the responsible application of AI and Social Media for teacher education. These tools empower lifelong learning, making it accessible to all prospective teachers, regardless of age. They also provide global connectivity by linking prospective teachers worldwide. One of their key highlights is introducing gamification elements, making teacher education more engaging and enjoyable while supporting hybrid learning models that blend traditional and digital methods.

Being part of modern teacher education, AI tools and Social Media platforms are constantly driving innovation, inclusivity, and opportunities for growth. The National Education Policy (NEP) 2020 acknowledges the transformative power of technology in teacher education which emphasizes the need for digital infrastructure, online resources, virtual platforms, and digital content for teacher training. Equipping prospective teachers with technological skills ensures that future teachers benefit from the digital revolution in education.

The National Digital Education Architecture (NDEAR) is a visionary integrated platform to build a unified national digital infrastructure to empower the education training paradigm in India. Through interoperability, scalability, and self-organization, NDEAR integrates AI and Social Media tools into teacher education programs, fostering a more innovative, inclusive, and effective professional development experience. Now, it has become essential to understand how prospective teachers want to use these Social Media platforms and AI tools for their future professional strategies and how they are willing to adapt to changes in the teaching and learning environment around them.

Need of the study:

With the evolution in the synthesis of technology within education, it has become a quintessential element to know and understand the tools with which the prospective teachers can incline towards to learn effectively to build educational strategies which will help them in their learning. Social media platforms and AI tools both exhibits two different yet dynamic strategies through which learning can be effectively enhanced. On the one hand Social media elevates collaboration and inclusive effective learning skills and on the other hand AI enhances the personalized learning experiences. Despite the fact that the technology has been used on a large scale today for learning but somewhere there lies insufficiency in research studies regarding combining both of their effectiveness and preferences of the learners. So this paper tries to find out the gap through studying what are the learning preferences of prospective teachers, are they willing to adjust through such changes. From the findings of the study,

the educators and the preferences of the learners it will help us to know the effectiveness of technology will be in learning for future educators and how we can prepare students towards a technology mobilized learning future.

Review of the related literature:

With the blending of Social media platforms and AI tools in recent educational trends it has become a research topic for many scholars who are trying to find out their potentialities and learning outcomes in the field of education. Match, Gorse and Chugh (2000) found that regardless of social media platforms being the most acknowledged in higher education for learning, it has not been used fully, efficiently as learning or teaching tool. They identified that social media provides amplified collaborations; communication and making students actively participate. However they highlight the challenges like time constraints, lack of skills and highlight the issues in professionalism that makes it difficult. Manu et al. (2020) undertook an investigation to understand the perceptions of undergraduate students of Ghana and found that students were mostly positive towards the introduction of social media regarding educational practices and they were motivated, ready to share their experiences and engage themselves. Furthermore Barrot (2020) showcased the positive impact made by social media on student engagement and collaboration and it draws attention to the need for pedagogically informed integration. Alalwan (2022) further pointed out how significant is the influence of social media in constructing interaction and satisfaction within the students and also highlights the significant correlation concerning the use of social media and its learning goals. AI-Qyasi et al.(2023) explored social media adoption for education with a bias towards business disciplines and called for more research into collectivistic cultures. On the other hand Luckin & Holmes (2016) pointed out that AI can be transformative in education but it should not replace the teachers. Furthermore Willamson & Eynon (2020) tracked down the development of AI in education and points out that there must be closer inspection for social, ethical and institutional implications of AI. Zhai et al. (2021) deals with content analysis on AI in education to identify emerging trends and challenges such as misuse of AI and its ethical concerns. Schiff (2021) has pointed out or integrated national policies that focus less on the ethical implications of AI in national policies. Selwyn (2022) also alerts against the limitations of AI and its potential social implications. Holmes & Tuomi (2022) argues that AI tools need to be aligned with education objectives and pedagogical principles. So, together both studies give an inclusive view regarding how Social media and AI are used in education. All of them suggest and view that there is a need for a fair ethical, well planned approach to use both the technologies for learning. Both have strong potential to enhance teaching and learning further.

Statement of the problem

The current research analyses Adapting to change: prospective teachers' perspective regarding learning with Social media or AI tools.

Hypotheses of the study

1) H01: There is no significant relationship between social media use and prospective teachers' learning outcomes.

2) H02: There is no significant relationship between the use of AI tools and prospective teachers' learning outcomes.

3) H03: There is no significant gender-based difference in the preference for using AI tools and social media for learning among prospective teachers.

Methodology:

For the current study, the investigator adopted a quantitative analysis framework to assess the perspectives of the prospective teachers on using AI tools and social media platforms in the programs

for teacher education. The purposeful sample comprised 150 participants who were students of B.Ed, M.Ed, MA (Education), and Ph.D. programs. The tool for gathering data was a structured questionnaire consisting of 30 items that aimed at establishing participants' familiarity with and perceptions of AI and social media tools in educational contexts. Correlation analysis has been applied by the researcher to assess the connection between familiarity with these tools and their perceived impact on teacher education. In addition, an independent t-test was applied to find regardless of gender differences were found in the preferences for using these technologies.

Results:

The careful analysis of the questionnaire reveals the following given below:

H0: *There* **is no significant relationship between social media use and students' learning outcomes.**

Correlations			
		Familiarity with Social Media	Social Media Enhances Learning
Familiarity with Social Media	Pearson Correlation	1	.947**
	Sig. (2-tailed)		.000
	N	150	150
Social Media Enhances Learning	Pearson Correlation	.947**	1
	Sig. (2-tailed)	.000	
	N	150	150
**. Correlation is significant at the 0.01 level (2-tailed).			

As shown in the table above the result of correlation analysis between 'Familiarity with Social Media' and belief that 'Social Media Enhance Learning'. The Pearson correlation coefficient (r) is 0.947, indicating a very strong positive correlation between the two variables. This means that the increase in familiarity with social media tends to be very positively associated with an individual's perception that social media enhances learning. The significance value (Sig. 2-tailed) is 0.000, which is less than the standard threshold of 0.01, meaning that the correlation is statistically significant. This implies that the observed relationship is unlikely to be due to chance. Given the null hypothesis (H0: There is no significant relationship between social media use and students' learning outcomes), the results lead us to reject the null hypothesis. The significant and strong positive correlation provides evidence that familiarity with social media is associated with the belief that it enhances learning outcomes. Given that correlation does not indicate causation. Therefore, continued research is required to examine the cause-effect relationship between these variables.

H0: There is no significant relationship between the use of AI tools and students' learning outcomes.

Correlations			
		Familiarity With AI Tools	AI tools Personalize Learning Experience
Familiarity With AI	Pearson Correlation	1	.947**

	Sig. (2-tailed)		.000
	N	150	150
AI tools Personalize Learning Experience	Pearson Correlation	.947**	1
	Sig. (2-tailed)	.000	
	N	150	150
**. Correlation is significant at the 0.01 level (2-tailed).			

The outcomes from Pearson correlation analysis between 'familiarity with AI' and that 'AI tools personalize the learning experience' give proof against the null hypothesis, which states: H0: There is no significant relationship between the use of AI tools and students' learning outcomes. The Pearson correlation coefficient is 0.947, which is very strongly related to the two variables. This suggests that the more familiarity increases with AI; individuals highly believe AI tools facilitate learning in an intelligent and customized way. Sig. 2-tailed: 0.000 below standard significance level of 0.01. This is indicative of a statistical correlation between two variables, meaning this probability does not result from random coincidence. Based on these results, the null hypothesis has been rejected because it is likely to be argued that prospective teachers' learning outcome is correlated with AI tools use. However, this does not imply causality: since the correlation was significant but did not guarantee causation, more studies are necessary to discern if indeed the use of AI tools had direct impacts on the learning outcomes or other reasons were present that might explain this view.

H0: There is no significant gender-based difference in the preference for using AI tools and social media for learning among prospective teachers.

	Gender	N	Mean	Std. Deviation	Std.Error mean
Familiarity with	female	70	3.2143	.88289	.10553
AI and Social Media	male	80	3.2500	.86420	.09662

Independent sample test

		t	df	Sig. (2-tailed)
Familiarity with AI	**Equal variances assumed**	.250	148	.803
and Social Media	**Equal variances not assumed**	.250	144.490	.803

The findings from the independent samples t-test show that there is no significant gender-based difference in the preference for using AI tools and social media for learning among prospective teachers. The calculated t-value was 0.250, which is significantly smaller than the critical t-value of 1.6552. Since the calculated t-value (0.250) is less than the critical t-value (1.6552), we fail to reject the null hypothesis. Additionally, the p-value of 0.803, which is greater than the commonly used significance level of 0.05, further supports this conclusion. These results suggest that the difference in the mean preferences between females (mean = 3.2143) and males (mean = 3.2500) is not statistically significant. One probable explanation for this lack of difference is that both males and females in this study are prospective teachers, meaning they are all individuals who are preparing for careers in education. This shared context—being prospective teachers—could lead to similar attitudes and preferences toward the use of AI tools and social media for learning, regardless of gender. Therefore,

gender may not be a defining factor in how these tools are perceived or utilized, as both groups may have similar educational goals and technological expectations. As a result, we conclude that there is no meaningful gender-based difference in the preference for using these learning tools among prospective teachers.

Conclusion

With the development in AI and social media, one can transform teacher education toward deeper engagement, collaborative learning, and personalized teaching. Their use in preparing programs will be helpful in order to enable prospective teachers to compete within classrooms that increasingly demand much modern, technologically integrated forms of knowledge. NEP (National Education Policy) 2020 strongly advocates for digital tools in education, making the curriculum of teachers and trainee teachers incorporate the core technology skill, which improves the process of teaching and learning. Moreover, the NDEAR (National Digital Education Architecture) would be a unified, scalable, and efficient digital architecture, helping the effective integration of such tools into teacher training initiatives. Future work will look towards incorporating AI and social media in hybrid learning models toward forming an inclusive, adaptive, and collaborative learning space. Prospective teachers would find that these technologies would not only facilitate innovative methodologies but help develop critical thinking. Further, they would address diverse needs through real-time learning for every child in the class. An AI-based platform will ensure teachers get professional development customized and oriented according to their pace, objectives, and results achieved. Social media, however, can become a collaborative learning center, a networking point among peers, and a channel for sharing best practices. To reap all the benefits that these tools offer, there must be stringent ethical guidelines in place to responsibly use them, thereby averting challenges like data privacy concerns and the overdependence on technology. Further research will also be necessary to evaluate long-term consequences of AI and social media on teacher education and learner outcomes. Integrating these technologies in an appropriate strategy will empower the training programs of teachers with innovations, address the changing needs of the learners, and enable educators to sustain themselves in this rapid change process of education.

References

[1]. *A Review of Artificial Intelligence (AI) in Education from 2010 to 2020 – Zhai – 2021 – Complexity – Wiley Online Library*. https://onlinelibrary.wiley.com/doi/full/10.1155/2021/8812542

[2]. *Actual use of social media for engagement to enhance students' learning | Education and Information Technologies*. https://link.springer.com/article/10.1007/s10639-022-11014-7

[3]. Chugh, R., Grose, R., & Macht, S. A. (2021). Social media usage by higher education academics: A scoping review of the literature. *Education and Information Technologies*, 26(1), 983–999. https://doi.org/10.1007/s10639-020-10288-z

[4]. *Education for AI, not AI for Education: The Role of Education and Ethics in National AI Policy Strategies | International Journal of Artificial Intelligence in Education*. https://link.springer.com/article/10.1007/s40593-021-00270-2

[5]. *Intelligence Unleashed: An argument for AI in Education – UCL Discovery*. https://discovery.ucl.ac.uk/id/eprint/1475756/

[6]. Manu, B. D., Ying, F., Oduro, D., & Boateng, S. A. (2021). Student engagement and social media in tertiary education: The perception and experience from the Ghanaian public university. *Social Sciences & Humanities Open*, 3(1), 100100. https://doi.org/10.1016/j.ssaho.2020.100100

[7].   Sivakumar, A., Jayasingh, S., & Shaik, S. (2023). Social Media Influence on Students' Knowledge Sharing and Learning: An Empirical Study. *Education Sciences*, *13*(7), Article 7. https://doi.org/10.3390/educsci13070745

[8].   *State of the art and practice in AI in education – Holmes – 2022 – European Journal of Education – Wiley Online Library*. https://onlinelibrary.wiley.com/doi/full/10.1111/ejed.12533

[9].   *Students' Perceptions and Experiences of Social Media in Higher Education – Stacy Neier, Linda Tuncay Zayer, 2015*. https://journals.sagepub.com/doi/abs/10.1177/0273475315583748

[10].   *The future of AI and education: Some cautionary notes – Selwyn – 2022 – European Journal of Education – Wiley Online Library*. https://onlinelibrary.wiley.com/doi/full/10.1111/ejed.12532

[11].   Williamson, B., & Eynon, R. (2020). Historical threads, missing links, and future directions in AI in education. *Learning, Media and Technology*, *45*(3), 223–235. https://doi.org/10.1080/17439884.2020.1798995

[12].   Ministry of Education, Government of India. (2020). *National Education Policy 2020*. Government of India. https://www.mhrd.gov.in/sites/default/files/NEP_Final_English_0.pdf

[13].   Roblyer, M. D., & Doering, A. H. (2013). *Integrating educational technology into teaching* (6th ed.). Pearson Education.

[14].   Kothari, C. R. (2019). *Research methodology: Methods and techniques* (4th ed.). New Age International Publishers.