UDC 373.2:004.8
Original Scientific paper
Submitted 22/1/2025
Accepted 4/4/2025
doi:10.5937/metpra28-56242

Verica R. Milutinović[1]
Suzana M. Đorđević[2]
Ivana R. Obradović[3]

University of Kragujevac, Faculty of Education, Jagodina (Serbia)

FACTORS SHAPING THE ADOPTION OF ARTIFICIAL INTELLIGENCE IN EDUCATION

Abstract: With the growing influence of Artificial Intelligence (AI) in education, this study explores the factors shaping the intention of future teachers and educators to integrate AI-based tools into their practices, building upon existing research on AI in education. It investigates how variables such as intelligent-ethical Technological Pedagogical Content Knowledge (TPACK), AI-related anxiety, subjective norms, AI for social good, and self-assessed AI competence influence this intention. Data were collected from 157 pre-service teachers at the Faculties of Education in Jagodina and Belgrade, and multiple regression analysis revealed that 72.9% of the variance in intention to use AI was explained by these variables. Intelligent-ethical TPACK ($\beta = 0.501$, $p < 0.001$) emerged as the strongest predictor, followed by AI for social good ($\beta = 0.296$, $p < 0.001$) and subjective norms ($\beta = 0.195$, $p < 0.01$). The results highlight the importance of enhancing teacher education programs to develop intelligent-ethical TPACK and awareness of AI's role in promoting social good.

Keywords: Artificial Intelligence, pre-service teachers and educators, AI-based tools, AI acceptance, intelligent-ethical TPACK

1 verica.milutinovic@pefja.kg.ac.rs, https://orcid.org/0000-0003-0325-7285; рођена 1972. године.
2 suzana.djordjevic@pefja.kg.ac.rs, https://orcid.org/0009-0007-7666-1269; рођена 1993.године.
3 ivanaoinformatika@gmail.com, https://orcid.org/0009-0000-6499-8031; рођена 1999. године.

INTRODUCTION

In recent years, Artificial Intelligence (AI) has increasingly integrated into education, presenting both significant opportunities and challenges for future teachers. As the educational landscape continues to evolve, understanding the factors influencing teachers' intentions to adopt AI tools is crucial (Jain et al., 2024; Sanusi et al., 2023). Despite growing interest in AI integration, many reviews in teacher education (Bond et al., 2024; Salas-Pilco et al., 2022) highlight concerns regarding ethics and the need for contextual, methodological, and ethical considerations in AI research. Pre-service teachers, in particular, require specific competencies and ethical awareness to integrate AI effectively and responsibly into their future classrooms.

This study, grounded in the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) and the Theory of Planned Behavior (TPB) (Ajzen, 1991), addresses a critical gap by examining the competencies, attitudes, and ethical factors essential for pre-service teachers' successful integration of AI into their teaching practices. Although recent studies have examined the role of AI in education, including the use of the Intelligent-TPACK model (Celik, 2023) and factors such as self-efficacy and perceived usefulness (Sun et al., 2024), there is a notable gap in research specifically addressing pre-service teachers' preparedness, ethical considerations, and intentions to integrate AI into their future educational practices.

This research contributes to advancing teacher education by exploring the support systems and experiences necessary for pre-service teachers to adopt AI responsibly. The study aims to examine the factors influencing pre-service teachers' intention to use AI tools, emphasizing ethical considerations, required competencies, and the broader implications of AI integration in education.

LITERATURE REVIEW

The integration of AI-based tools in education is deeply influenced by the TPACK framework, which combines the knowledge and skills needed for effectively integrating AI into teaching (Jain & Raghuram, 2024; Sun et al., 2024). AI technologies facilitate personalized learning by adjusting to the individual needs and learning preferences of students, with systems like AI-driven educational support platforms enhancing metacognitive skills and fostering self-regulation (Yang & Xia, 2023). Moreover, AI helps personalize learner-instructor interactions, offering real-time support and improving communication in online environments (Seo et al., 2021). However, user acceptance is critical for successful AI integration in teaching, with a growing body of research stressing the importance of teachers' readiness, support, and knowledge (Ayanwale et al., 2022; Jatileni et al., 2023; Sanusi et al., 2023; 2024;). AI's potential in classroom management and the reduction of routine tasks allows educators to engage more in interactive teaching (Yang et al., 2020; Zhang & Zhang, 2024), while AI-supported simulations enhance teacher professional development (Kusmawan, 2023).

Despite its promise, AI introduces challenges, particularly ethical concerns related to data privacy and its impact on traditional teacher-student dynamics (Adiguzel et al., 2023; Seo et al., 2021). To

maximize AI's benefits while addressing these issues, it is essential to promote ethical AI usage, foundational knowledge, and positive experiences that build teachers' confidence in AI adoption (Chai et al., 2020; Zhang et al., 2023). The TPACK framework, which builds upon Shulman's (1986) Pedagogical Content Knowledge (PCK), is vital for understanding how teachers can effectively integrate technology with pedagogy and content knowledge. TPACK focuses on the interactions between these three areas, providing a foundation for AI adoption (Figure 1). Recent research demonstrates that TPACK is widely applied in various educational settings, particularly in language education and online teaching (Mishra & Koehler, 2006; Tseng et al., 2020; Moreno et al., 2019). This growing body of literature emphasizes the need to equip educators with the technological, pedagogical, and content expertise required for effective AI integration in teaching.

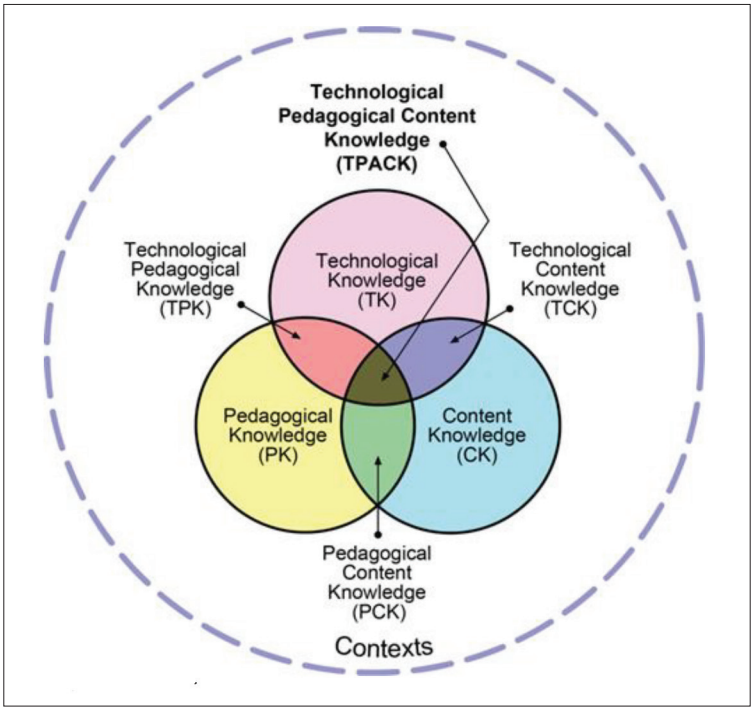

Figure 1 TPACK framework (Mishra and Koehler, 2006)
Note. http://tpack.org Reproduced by permission of the publisher, © 2012 by tpack.org

Intelligent-TPACK, or the integration of AI with TPACK, represents a significant evolution in educational frameworks. This approach aims to enhance learning and teaching by leveraging AI technologies within the TPACK framework, which traditionally combines technology, pedagogy, and content knowledge. Celik (2023) incorporated an ethical aspect into TPACK, creating the Intelligent-TPACK Scale to evaluate teachers' skills and knowledge required for ethical and pedagogical application of AI in education. The Intelligent-TPACK framework extends the traditional TPACK model by incorporating AI-specific elements.

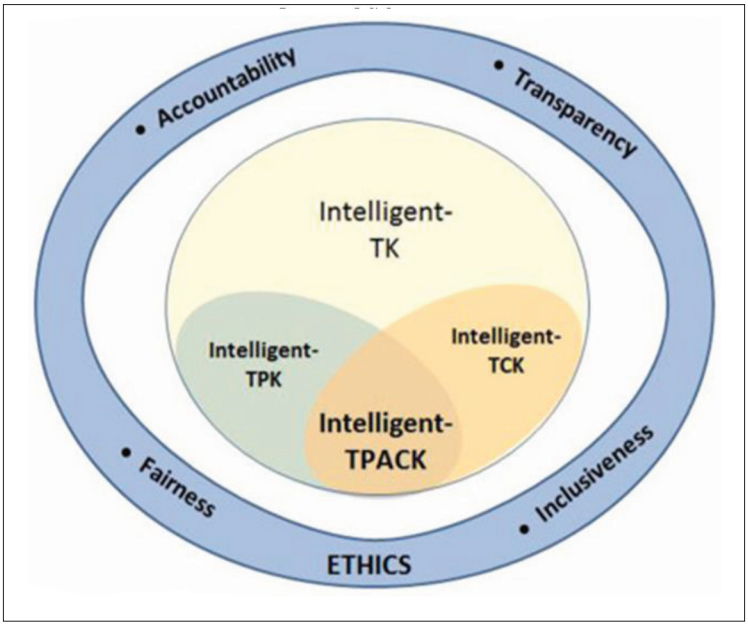

Figure 2 Intelligent-TPACK (Celik, 2023)

Note. Reprinted from "Towards Intelligent-TPACK: An empirical study on teachers' professional knowledge to ethically integrate artificial intelligence (AI)-based tools into education", by Celik, I., 2023. *Computers in Human Behavior*, 138, p. 8. Copyright 2023 by Elsevier.

In our study we used Intelligent-TPACK and ethics items from Celik's (2023) scale and named it Intelligent-Ethical TPACK (IETPACK) (Figure 2). IETPACK was used to evaluate teachers' self-efficacy to select and ethically apply appropriate AI technologies based on their expertise. Studies highlight the need for teachers to develop professional ethical knowledge to ensure the correct and ethical use of digital resources in classrooms, especially in a post-pandemic context (Asamoah, 2019; Gómez-Trigueros, 2023).

This study is grounded in the TPACK framework and TPB (Ajzen, 1991) to examine factors influencing pre-service teachers' intention to use AI tools in future teaching practices. According to the TPB, an individual's intention to perform a behavior is shaped by their attitude toward the behavior, the influence of subjective norms, and their perceived ability to control the behavior (confidence in their ability to perform the behavior). The TPB framework explains how subjective norms (SN), representing perceived social pressure, and competencies (COMP), reflecting confidence in using AI tools, shape behavioral intention (BI). Behavioral Intention (BI) is described as an indicator of the degree of one's commitment to carrying out a particular behavior (to use AI tools in future teaching). Anxiety about AI is also considered as a factor potentially reducing perceived behavioral control, an essential component of TPB.

Subjective Norm (SN) refers to the influence of important others on the user's intention to use AI. In different educational contexts in Serbia, subjective norms or social influence have been found

to significantly positively affect the intention to use technology by influencing perceived ease of use and usefulness (Milutinović, 2022; Milutinović, 2024; Milutinović & Mandić, 2022), as well as attitudes (Milutinović, 2016). Subjective norms significantly impact teachers' behavioral intentions to adopt AI-assisted teaching systems. Teachers are more likely to embrace AI if they perceive that important others (e.g., colleagues, administrators) expect them to do so (Zhang and Hou, 2024). Similarly, subjective norms are a crucial factor influencing teacher education students' willingness to adopt AI technologies, alongside perceived usefulness and AI literacy (Ma and Lei, 2024).

Artificial Intelligence for Social Good (SG) refers to the belief in AI's potential to contribute to society. AI for SG explores AI technologies to address complex social issues, emphasizing interdisciplinary partnerships with community organizations (Lin et al, 2024). It aims to ensure ethical development and effective deployment of AI solutions that meet the needs of these organizations. For instance, AI is used for medical purposes to monitor the status of chronic kidney disease (Djordjevic et al., 2023; Mladenović et al., 2024). AI in education can promote social good by enhancing teaching methodologies, student assessment, and administrative tasks, offering customized learning experiences and data-driven insights (Leddy and Creanor, 2024).

Anxiety due to Artificial Intelligence (ANX) refers to feelings of discomfort or concern regarding the use of AI. AI anxiety is based on confusion and misunderstanding on what AI is and can be, leading to fear and trepidation (Johnson and Verdicchio, 2017). Gerlich (2024) identifies significant public anxieties about AI, particularly regarding data privacy, job security, and ethical governance. These concerns are influenced by demographics such as age, education, and occupation, emphasizing the importance of transparent AI governance to build trust.

Competencies (COMP) refers to self-assessment of skills and knowledge in using AI tools. COMP encompass knowledge, skills, and core abilities related to AI, including self-assessment of one's proficiency in using AI tools (Sengsri and Khunratchasana, 2024). This framework aids individuals in understanding their capabilities and areas for improvement in AI applications.

By examining the impact of IETPACK, SN, SG, ANX, and COMP on BI, this study study fills important gaps in the existing literature. It offers a multidimensional perspective on pre-service teachers' preparedness, ethical decision-making, and readiness to adopt AI tools, contributing to a deeper understanding of the factors shaping the adoption of AI in education.

METHOD

This study aims to examine the factors influencing the intention of future teachers to adopt AI tools in their teaching practice, building upon existing research on the integration of AI in education. The study focuses on understanding how variables such as Artificial Intelligence for Social Good (SG), Intelligent-Ethical TPACK (IETPACK), Subjective Norm (SN), Anxiety about AI (ANX), and Competencies (COMP) shape future educators' Behavioral Intention (BI) to use AI tools. This multidimensional approach considers cognitive, emotional, and social factors that drive AI adoption in education.

The objectives of this research are to:

1. Examine the attitudes of future teachers towards the use of AI tools in educational practice.
2. Investigate the factors (IETPACK, SG, SN, ANX, COMP) influencing the intention (BI) of future teachers to utilize some of the AI tools with their future students.

Participants and Procedure

The data was collected through online surveys of students from the Faculty of Education in Jagodina and the Faculty of Education in Belgrade during the academic year 2023/24.

The sample consisted of 157 pre-service teachers, preschool educators, and boarding school teachers, of which 47 were from the Faculty of Education in Belgrade. The mean age of the respondents was 24.2 (SD 7.38) years, and 144 (91.7%) were female. On average, participants completed the questionnaire in approximately 10 minutes.

Table 1 The sample of the research

Study Program	***f***	**%**
BA Teacher	70	44.6
BA Preschool teacher	37	23.6
BA Boarding school teacher	2	1.3
MA Teacher	17	10.8
MA Preschool teacher	26	16.6
MA Boarding school teacher	5	3.2
Total	**157**	**100.0**

Note. BA - Bachelor's academic studies, MA - Master's academic studies

Table 1 presents the distribution of participants by study program. The sample consists of 157 pre-service teachers enrolled in various academic programs. The largest group, comprising 44.6% of the sample, are students pursuing a Bachelor's degree in Teaching (BA Teacher), followed by 23.6% enrolled in a Bachelor's program for Preschool Teaching (BA Preschool Teacher). A smaller proportion of students are pursuing a Bachelor's degree for Boarding School Teaching (BA Boarding School Teacher). At the graduate level, 30.6% are enrolled in a Master's program for Teaching (MA Teacher), Preschool Teaching (MA Preschool Teacher), and Boarding School Teaching (MA Boarding School Teacher). This diverse sample ensures a broad representation of future educators across different specialization areas.

INSTRUMENT AND DATA ANALYSIS

This study employed a structured research survey to examine the connections between key factors affecting future teachers' adoption of AI tools. The survey comprised two primary sections. The initial section gathered data on participants' demographic characteristics, including age, gender, and educational background, as well as participants' attitudes towards AI. The second section measured participants' self-perceptions across five constructs: Artificial Intelligence for Social Good (SG), Intelligent-Ethical TPACK (IETPACK), Subjective Norm (SN), Anxiety about AI (ANX), and Competencies (COMP). Each construct was assessed using validated subscales with items rated on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). The measurement items were adapted from established instruments (see Appendix) with demonstrated reliability (Celik, I., 2023; Chai, C. S., Wang, X., & Xu, C., 2020). The translation and contextual adaptation of the scales were performed by the author in collaboration with a bilingual expert to ensure both linguistic and cultural relevance.

Data analysis was carried out using SPSS 27.0, employing descriptive statistics, correlation analysis, and multiple regression to examine the predictive relationships among the variables and their impact on BI to use AI tools in teaching practice.

RESULTS

The results of all preliminary assessments showed good questionnaire reliability. Data normality has been confirmed, multicollinearity has not been violated, and there are no atypical data points.

The attitudes of pre-service teachers on using AI in general, and in education

As shown in Figure 3, the most commonly used device for applying AI tools is mobile device (58%), followed by laptop (37%). This distribution highlights the accessibility and convenience of mobile devices, which may be attributed to their portability, ease of use, and widespread ownership among students and educators.

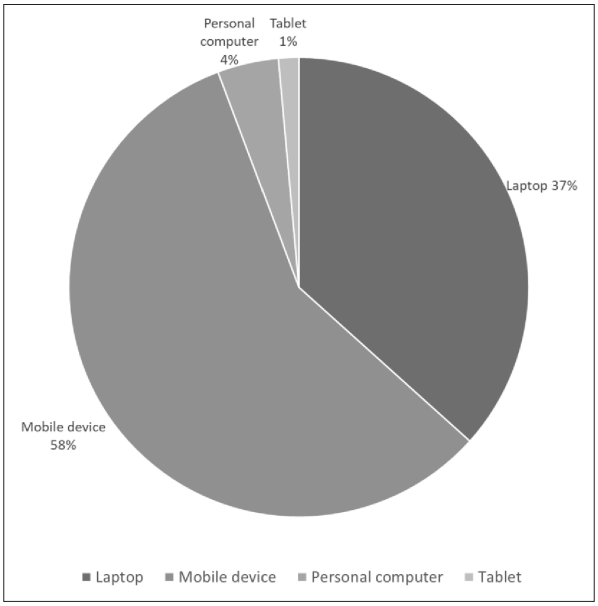

Figure 3 Devices most commonly used by participants for applying AI tools

When asked about the predominant AI technologies used so far, 88% of participants reported using chatbots, demonstrating their familiarity with conversational agents for various tasks. Additionally, 63% indicated using AI assistants, reflecting the increasing popularity of voice-activated and automated support systems in both personal and educational contexts. Furthermore, 54% utilized AI-driven foreign language learning tools, showcasing the integration of adaptive technology into skill acquisition and education. Interestingly, 52% of respondents remained neutral regarding their overall AI usage, neither expressing strong satisfaction nor dissatisfaction with their experiences (Figures 4 and 5).

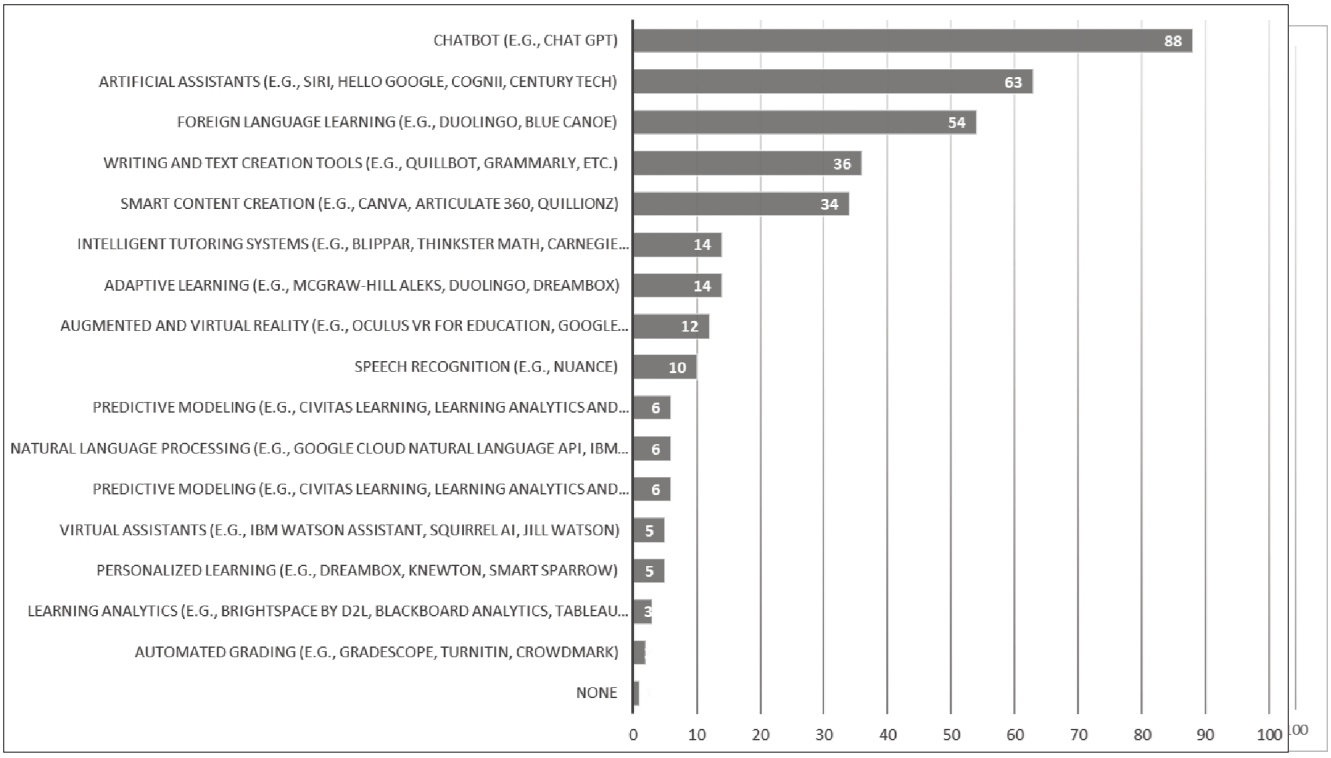

Figure 4 The AI tools that participants have predominantly used so far

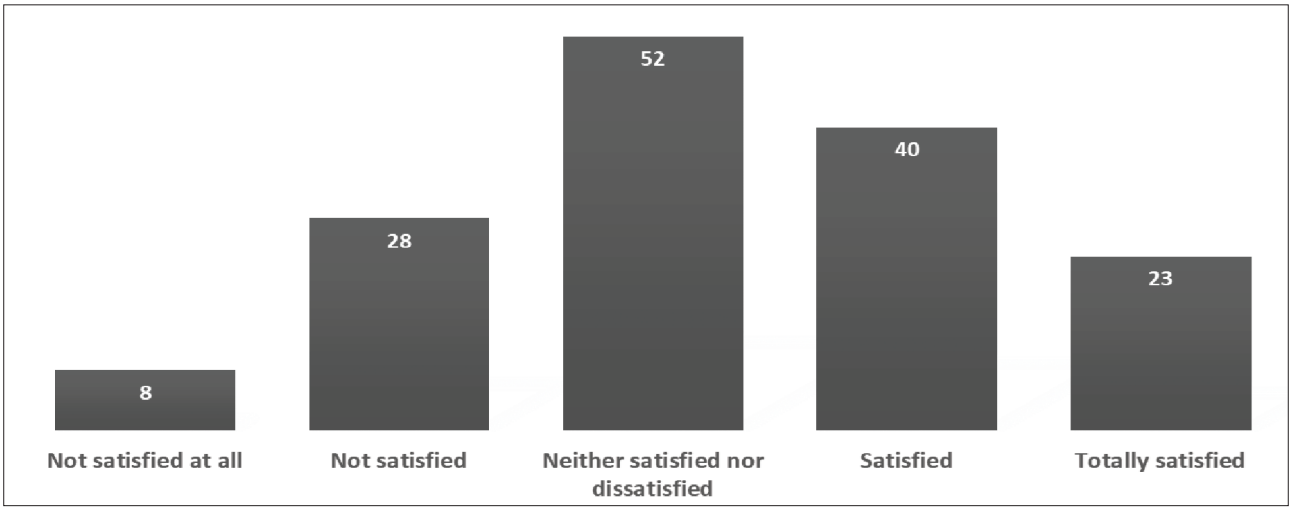

Figure 5 Participants' satisfaction with the experience of using AI (Mean M = 3.31, SD = 1.09)

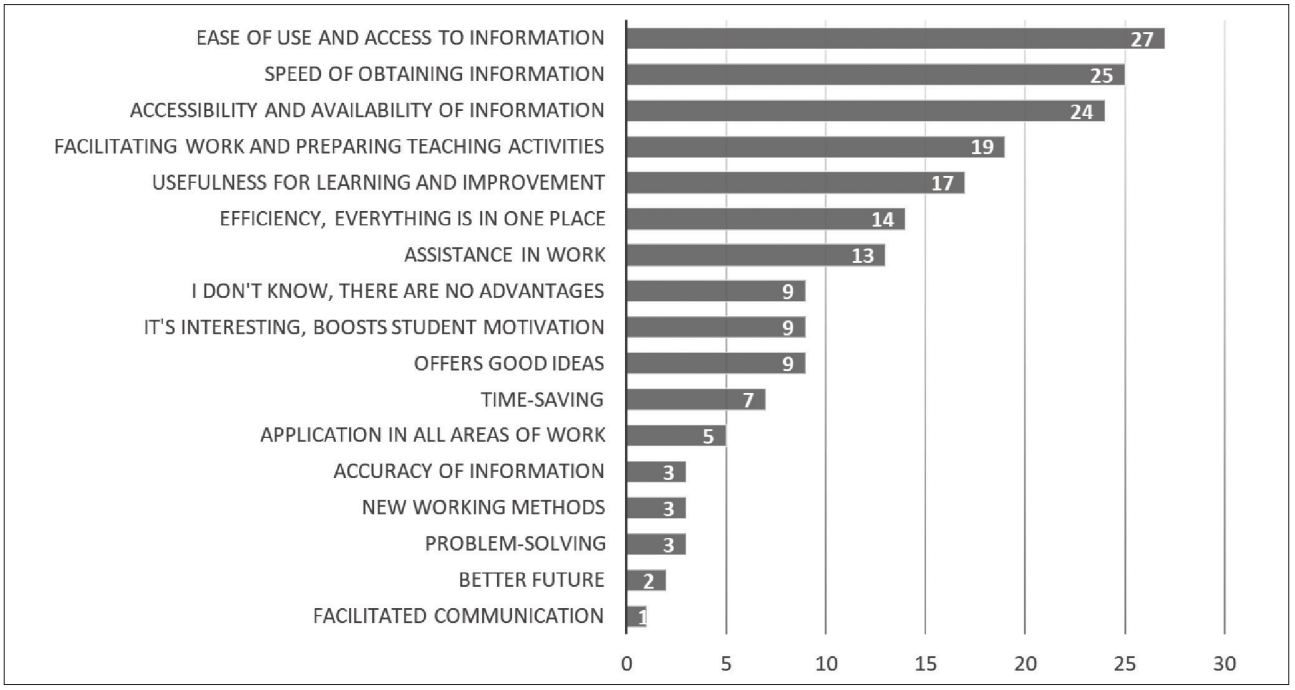

Figure 6 The strengths of using AI in general, and in education

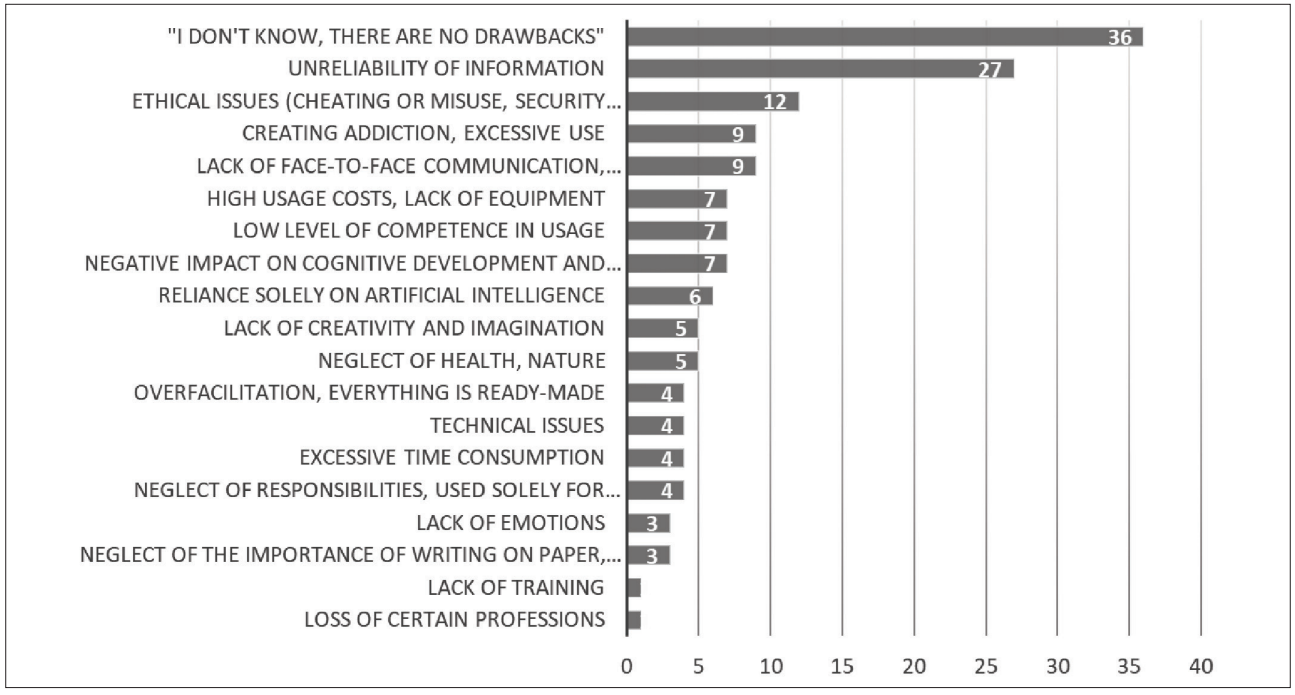

Figure 7 The challenges of using AI in general, and in education

The most common strengths (Figure 6) of AI that participants highlighted are ease of use and access to information (90%), speed of obtaining information (83.33%) and accessibility and availability of information (80%). Interestingly, the majority of participants did not see any challenges (Figure 7) of using AI (90%), followed by unreliability of information (67.5%).

Descriptive statistics

Table 2 presents the descriptive statistics for the variables, calculated using SPSS. The mean values for these variables range from 2.61 (ANX) to 3.24 (BI) on a six-point Likert scale, indicating varying but mostly moderate levels of participant agreement with the corresponding constructs. The standard deviation values, spanning from 0.90 to 1.04, suggest moderate variability within responses across all variables.

Table 2 Descriptive statistics results

Variable	Mean	Standard deviation	Skewness	Kurtosis	α
BI	**3.24**	1.04	0.01	-0.61	0.97
SG	**3.2**	0.98	0.18	-0.67	0.9
SN	2.94	0.99	0.2	-0.37	0.91
ANX	2.61	0.91	0.32	0.04	0.75
IETPACK	2.93	0.99	0.2	-0.47	0.97
COMP	**3.17**	0.9	0.05	-0.63	0.85

Note. SG - Artificial Intelligence for Social Good; IETPACK - Intelligent-Ethical TPACK; SN - Subjective Norm; ANX - Anxiety due to Artificial Intelligence; COMP - Competencies; BI - Behavioral Intention

To ensure the trustworthiness of the applicable measurement scale, a Cronbach Alpha (α) value of 0.70 or above is required (De Vellis 2003). High reliability was observed for BI (α = 0.97) and IETPACK (α = 0.97), followed by SG (α = 0.90) and SN (α = 0.91). COMP (α = 0.85) also demonstrated strong reliability, while ANX (α = 0.75) exhibited acceptable reliability. These results indicate that the scales used for measuring these constructs are reliable and appropriate for further statistical analyses.

Influential Factors for Pre-Service Teachers' Intentions to Integrate AI Tools in Education

Table 3 Correlation

	ANX	SG	BI	IETPACK	COMP	SN
ANX	1					
SG	0.064	1				
BI	-0.16	0.666**	1			
IETPACK	0.005	0.502**	0.784**	1		
COMP	0.002	0.362**	0.505**	0.541**	1	
SN	0.079	0.574**	0.684**	0.619**	0.522**	1

Note. SG - Artificial Intelligence for Social Good; IETPACK - Intelligent-Ethical TPACK; SN - Subjective Norm; ANX - Anxiety due to Artificial Intelligence; COMP - Competencies; BI - Behavioral Intention, ** $p < 0{,}001$.

Table 3 presents the correlation coefficients among the study variables, revealing significant relationships influencing the behavioral intention to adopt AI tools.

A strong positive correlation exists between Artificial Intelligence for Social Good (SG) and BI ($r = 0.666$, $p < 0.001$), as well as between IETPACK and BI ($r = 0.784$, $p < 0.001$), emphasizing the importance of ethical knowledge and social good perceptions in driving AI adoption. SN also positively correlates with BI ($r = 0.684$, $p < 0.001$), reflecting the role of social influence. COMP show moderate positive correlations with both BI and IETPACK, indicating that perceived competence supports stronger ethical understanding and intention to use AI tools.

In contrast, ANX does not exhibit significant correlations with BI or other variables, suggesting minimal impact on participants' AI adoption intentions. These results highlight that factors such as ethical knowledge, social norms, and perceived competencies are key predictors of behavioral intention, while anxiety plays a limited role.

Table 4 Exploratory factor analysis (EFA) results

	1	2	3	4	5	6
COMP1					.789	
COMP2					.819	
COMP3					.771	
IETPACK1	.769					
IETPACK2	.760					
IETPACK3	.778					
IETPACK4	.830					
IETPACK5	.823					
IETPACK6	.881					
IETPACK7	.848					

	1	2	3	4	5	6
IETPACK8	.853					
IETPACK9	.833					
IETPACK10	.793					
SN1				.770		
SN2				.803		
SN3				.674		
SG1		.815				
SG2		.867				
SG3		.787				
SG4		.663				
SG5		.684				
ANX1						.821
ANX2						.876
ANX3						.745
BI1			.662			
BI2			.605			
BI3			.708			
BI4			.658			
BI5			.658			
BI6			.727			

Note. Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.

An exploratory factor analysis was conducted on the 27 items to examine the underlying structure of the scale used to measure variables potentially influencing students' intentions. This analysis employed Maximum Likelihood and Varimax rotation with Kaiser normalization. According to Hair Jr. et al. (2010), a factor loading of ± 0.50 was considered to have practical significance for interpretation. Table 4 illustrates that the factor structure was validated, with all items exhibiting adequate loadings.

Table 5 Multiple regression results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	.154	.220		.700	.485
COMP	.029	.060	.025	.490	.625
SN	.206	.063	**.195**	3.265	**.001**
ANX	-.061	.048	-.053	-1.271	.206
SG	.316	.056	**.296**	5.663	**.000**
IETPACK	.527	.061	**.501**	8.709	**.000**

Note. SG - Artificial Intelligence for Social Good; IETPACK - Intelligent-Ethical TPACK; SN - Subjective Norm; ANX - Anxiety due to Artificial Intelligence; COMP - Competencies; BI - Behavioral Intention.

Table 5 displays the results of multiple regression analysis predicting BI to use AI tools. Among the predictors, IETPACK demonstrates the strongest positive influence ($\beta = 0.501$, $p < 0.001$), followed by SG ($\beta = 0.296$, $p < 0.001$), and SN ($\beta = 0.195$, $p = 0.001$). These findings indicate that ethical competencies, social benefits, and social influence significantly contribute to BI. In contrast, COMP and ANX do not have significant predictive power, as their p-values exceed the 0.05 threshold. The model highlights the importance of ethical knowledge and societal relevance in driving AI adoption intentions among future educators.

DISCUSSION

The findings highlight that although respondents generally acknowledge the benefits of AI in education (see Figure 6), their intention to integrate AI tools into future teaching practices remains moderate (see Table 2, BI Mean = 3.24, SD = 1.04). This suggests a potential gap between the perceived advantages and actual implementation intentions. Such a discrepancy may reflect various barriers or reservations that merit further exploration. Several factors may contribute to this discrepancy, including insufficient training, technological apprehension, institutional barriers, inadequate technological infrastructure, ethical and security concerns, and cultural and linguistic differences. Inadequate technological infrastructure, such as unreliable access to high-speed internet and insufficient technical expertise, hampers the operationalization of AI tools within educational settings (Canonigo, 2024). Strategic challenges, including a lack of awareness, training, and institutional support, further hinder the adoption of AI in education (Borges et al., 2021). Ethical concerns, such as data privacy, security, and potential biases in AI algorithms, also play a significant role in limiting AI integration (Dahlin, 2021). Addressing these multifaceted challenges is essential to bridge the gap between the recognition of AI's benefits and its actual implementation in educational practices.The multiple regression analysis provides a robust model explaining 72.9% of the variance in respondents' intentions to use AI tools. This high

percentage indicates a well-fitted model, reinforcing the relevance of the identified predictors. Among these, IETPACK emerges as the most influential factor ($\beta = 0.501$, $p < 0.001$). These results align with prior research highlighting the importance of technological, pedagogical, and ethical competencies in fostering AI adoption in education. Educators must be proficient in using AI technologies such as adaptive learning systems and intelligent tutoring systems, which personalize learning experiences based on individual student data (Wangdi, 2024; Arya & Verma, 2024). The Intelligent-TPACK framework highlights the importance of understanding the interplay between AI technologies and pedagogical strategies, further enhancing teaching effectiveness (Ning et al., 2024).

The positive influence of the SG construct ($\beta = 0.296$, $p < 0.001$) further emphasizes the importance of framing AI within a socially beneficial context. This finding aligns with Chai et al. (2020), who also found that students perceive learning AI for social good as a powerful predictor of their behavioral intention. Teachers who recognize AI's potential to address societal challenges and promote equitable outcomes may feel more motivated to incorporate it into their instructional practices. This aligns with the fact that AI systems adapt content to individual student needs, allowing for tailored learning experiences that cater to diverse abilities (Bezzina & Dingli, 2024; Mishra, 2024). For instance, the Education AI project reported a 23% improvement in assessments for low-performing students, showcasing the effectiveness of personalized learning (Bezzina & Dingli, 2024). These findings align with Sutrisman et al. (2024), who demonstrated that AI enhances students' understanding and engagement, although concerns remain regarding overreliance and access disparities.

Our findings indicate a positive relationship between subjective norms (SN) and behavioral intention (BI), with a standardized coefficient (β) of 0.195 ($p < 0.05$), underscoring the impact of social and peer expectations on pre-service teachers' intentions to integrate AI tools into their teaching practices.

This aligns with research by Ivanov et al. (2024), who found that subjective norms positively influence higher education students' intentions to use AI tools, subsequently enhancing their adoption. Similarly, research reported that pre-service teachers' attitudes and behaviors toward AI are strongly positively shaped by subjective norms (Sanusi et al., 2024; Zhang et al., 2023). Talukdar (2023) also found that high school students' perceptions of social norms significantly impact their motivation to study artificial intelligence, with support and approval from teachers and peers playing a significant role.

However, Jaffar et al. (2024) observed that subjective norms negatively influenced Pakistani university teachers' adoption of ChatGPT for instructional purposes. They suggested that this negative influence might stem from institutional restrictions and concerns about academic integrity. On the other hand, this discrepancy may be attributed to differences in educational contexts, technological familiarity, or the specific AI tools examined. Notably, the participants in our study were pre-service preschool and school teachers, whose views and intentions may evolve once they transition to in-service roles.

These contrasting findings may also be influenced by cultural differences, as the studies by Jaffar et al. (2024) and those involving pre-service teachers and students were conducted in diverse cultural settings. Additionally, variations in participants' professional status—university teachers versus pre-service teachers and students—and the specific AI tools examined could affect how subjective norms

impact behavioral intentions. Moreover, contextual factors such as institutional policies, technological infrastructure, and societal attitudes toward AI may play significant roles in shaping these relationships.

Other factors, ANX and COMP, did not show statistically significant influence on the intention; however, they contributed to the explained variance, which aligns with the findings of Christian et al. (2024). Participants in this study predominantly expressed neutral or disagreeing stances towards fears associated with AI learning.

IMPLICATIONS FOR EDUCATIONAL POLICY AND PRACTICE

Findings from this study provide educational leaders with key insights into factors that enhance AI adoption among future teachers, emphasizing the need for targeted interventions in teacher training programs.

The results indicate that education of future teachers and preschool teachers should primarily focus on improving Intelligent-Ethical TPACK, perception of AI for social good, and subjective norms. Educators should incorporate AI-based adaptive learning systems and intelligent tutoring tools into curricula to enhance student engagement and personalized learning (Arya & Verma, 2024; Mutawa & Sruthi, 2024). Continuous training is necessary for teachers to leverage AI technologies effectively and adapt their teaching strategies accordingly (Wangdi, 2024; Mubofu & Kitali, 2024).

In contemporary education, teachers are encouraged to adopt AI as a resource that enhances their professional expertise and improves their capacity to address the diverse needs of students by utilizing modern media, making teaching dynamic, engaging, and well-organized to ensure better knowledge quality and retention (Mandić, 2023). Artificial intelligence proves to be a powerful tool for fostering students' critical thinking while providing teachers with more opportunities for focused educational work, evaluation, and motivating students toward continuous improvement (Mandić et al., 2024).

Simultaneously, the successful integration of AI requires thoughtful planning and implementation of strategies that emphasize student well-being, equity, and sound pedagogical practices (Mandić et al., 2024; Milutinović & Mandić, 2022).

To implement education supported by AI tools, conditions should be created to enhance these significant factors during the initial education of teachers and preschool teachers, and later through providing professional development seminars. Establishing guidelines for responsible AI use is vital to address issues like algorithmic bias and data privacy (Bibi, 2024; Mubofu & Kitali, 2024). One concrete approach is to implement ethics-focused AI training for teachers, equipping them with skills to recognize and mitigate biases in AI-driven tools. Additionally, policy frameworks for AI governance should be designed to ensure transparency, accountability, and ethical decision-making in AI applications within education.

LIMITATION OF THE STUDY AND FUTURE RESEARCH

The questionnaire proved to be a quick and efficient tool for collecting data and measuring the acceptance of using AI tools. On the other hand, the data were collected through self-reports, which may lead to "inflating" the values of true relationships between variables. Additionally, the use of a sample comprising students - future teachers and preschool teachers rather than employed teachers limits the extent to which the findings of this study can be generalized to practicing professionals. The lack of experience in the practice of respondents and the stresses involved in integrating AI tools into the real educational process may result in an inadequate representation of the true situation. Furthermore, more than 35% of the variance in the intention to use AI remained unexplained. Future studies should examine additional relevant variables and include interviews with practicing teachers and preschool teachers to gain deeper insights into the specific challenges encountered in educational practice. Interviews can reveal nuanced obstacles and provide a comprehensive understanding of the factors influencing the acceptance and integration of artificial intelligence tools in teaching. Expanding the sample to include in-service teachers across diverse educational settings and exploring institutional and technological factors will further enhance understanding. Longitudinal studies can also provide valuable insights into the long-term effects of interventions aimed at enhancing Intelligent-Ethical TPACK and supporting the integration of AI in educational practices. Longitudinal studies should examine how teachers' attitudes and competencies evolve over time with continuous AI exposure and training.

CONCLUSION

This study aimed to explore the factors influencing the intention of future pre-service teachers, boarding school teachers and preschool teachers to integrate AI-based tools into their teaching practices. The findings highlight the pivotal role of Intelligent-Ethical TPACK, AI for social good, and subjective norms in shaping this intention.

Emphasis on the development of Intelligent-Ethical TPACK is crucial for the successful acceptance and integration of AI tools in educational environments. By equipping future educators with a comprehensive understanding of how to use AI in conjunction with pedagogical strategies and ethical principles, Intelligent-Ethical TPACK ensures that AI integration is both effective and responsible. This development fosters confidence among educators, enabling them to navigate the complexities of AI technology while leveraging its potential to enhance learning outcomes and personalize educational experiences.

Educational institutions should promote AI as a means for social good, which can increase the removal of barriers to acceptance of these tools in educational contexts. Framing AI as a technology that supports equitable learning opportunities, addresses societal challenges, and improves overall educational systems can inspire future educators to adopt it. Institutions can accomplish this by embedding examples of AI for social good into their curricula, showcasing how it contributes to inclusivity,

accessibility, and innovation in education. Highlighting real-world applications where AI has made a positive impact can further motivate educators to integrate these tools into their practices.

Developing subjective norms regarding the use of AI can positively influence the intention to create and use these tools in the future. When educators perceive a supportive and encouraging professional environment that values the adoption of AI technologies, they are more likely to feel empowered to explore and implement these tools in their teaching. Establishing communities of practice, where educators share experiences, success stories, and strategies for AI integration, can strengthen these norms. Additionally, institutional recognition and incentives for educators who effectively utilize AI tools can further enhance the perception that AI use is a valued and expected part of modern teaching.

Although some factors such as anxiety and self-assessment of competencies were not statistically significant, their impact on variance remains important for studying and understanding the application of AI in an educational context. Addressing anxiety about AI requires targeted interventions, such as professional development programs and hands-on training sessions, to reduce fears and build confidence. Similarly, fostering a growth mindset around self-assessed competencies can encourage educators to view AI as a learnable and manageable tool rather than a daunting challenge. Recognizing the nuanced influence of these factors can help researchers and practitioners design more comprehensive support systems that ensure educators feel both capable and motivated to embrace AI in their classrooms.

REFERENCES

Adiguzel, T., Kaya, M. & Cansu, F. (2023). Revolutionizing education with AI: Exploring the transformative potential of ChatGPT. *Contemporary Educational Technology*. https://doi.org/10.30935/cedtech/13152

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Arya, R. & Verma, A. (2024). Role of Artificial intelligence in education. *International Journal of Advanced Research in Science, Communication and Technology*, 589–594. https://doi.org/10.48175/ijarsct-19461

Asamoah, M. (2019). TPACKEA Model for Teaching and Students' Learning. *Journal of Academic Ethics*, 17, 401–421. https://doi.org/10.1007/s10805-019-09326-4.

Ayanwale, M. A., Sanusi, I. T., Adelana, O. P., Aruleba, K. D. & Oyelere, S. S. (2022). Teachers' readiness and intention to teach artificial intelligence in schools. *Computers and Education: Artificial Intelligence*, 3, 100099. https://doi.org/10.1016/j.caeai.2022.100099

Bezzina, S. & Dingli, A. (2024). The transformative potential of Artificial Intelligence for Education. *Proceedings of the International Conference on Networked Learning*, 14. https://doi.org/10.54337/nlc.v14i1.8077

Bibi, A. (2024). Navigating the ethical landscape: Ai integration in education. *Educational Administration Theory and Practice*, 1579–1585. https://doi.org/10.53555/kuey.v30i6.5546

Bond, M., Khosravi, H., De Laat, M., Bergdahl, N., Negrea, V., Oxley, E., ... & Siemens, G. (2024). A meta systematic review of artificial intelligence in higher education: a call for increased ethics, collaboration, and rigour. *International Journal of Educational Technology in Higher Education*, 21 (1), 4. https://doi.org/10.1186/s41239-023-00436-z

Borges, A. F. S., Laurindo, F. J. B., Spínola, M. M., Gonçalves, R. F. & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International Journal of Information Management*, 57 (102225), 102225. https://doi.org/10.1016/j.ijinfomgt.2020.102225

Canonigo, A. M. (2024). Levering AI to enhance students' conceptual understanding and confidence in mathematics. *Journal of Computer Assisted Learning*, 40 (6), 3215–3229. https://doi.org/10.1111/jcal.13065

Celik, I. (2023). Towards Intelligent-TPACK: An empirical study on teachers' professional knowledge to ethically integrate artificial intelligence (AI)-based tools into education. *Computers in Human Behavior*, 138, 107468. https://doi.org/10.1016/j.chb.2022.107468

Chai, C. S., Wang, X. & Xu, C. (2020). An extended theory of planned behavior for the modelling of Chinese secondary school students' intention to learn artificial intelligence. *Mathematics*, 8 (11), 2089. https://doi.org/10.3390/math8112089

Chai, C., Lin, P., Jong, M., Dai, Y., Chiu, T. & Huang, B. (2020). Factors Influencing Students' Behavioral Intention to Continue Artificial Intelligence Learning. *2020 International Symposium on Educational Technology (ISET)*, 147–150. https://doi.org/10.1109/ISET49818.2020.00040.

Christian, M., Pardede, R., Gularso, K., Dewi, Y. S. & Amiro, T. (2024). Examining Learning Anxiety in AI-Enhanced Educational Environments Among Urban Lecturers. *2024 3rd International Conference on Creative Communication and Innovative Technology (ICCIT)*, 1–5. https://doi.org/10.1109/ICCIT62134.2024.10701128.

Dahlin, E. (2021). Mind the gap! On the future of AI research. *Humanities & Social Sciences Communications*, 8 (1). https://doi.org/10.1057/s41599-021-00750-9

De Vellis, R. (2003). *Scale development: Theory and applications (2nd ed.)*. California: Thousand Oaks, California: Sage ISBN-13. 978-0761926047

Djordjevic, S., Kostic, M., Milosevic, D., Cvetkovic, M., Mitrovic, K. & Mladenovic, V. (2023). Prediction of overhydration in the process of pediatric hemodialysis using artificial neural network. *2023 12th Mediterranean Conference on Embedded Computing (MECO)*. https://doi.org/10.1109/MECO58584.2023.10154915

Gerlich, M. (2024). Public anxieties about AI: Implications for corporate strategy and societal impact. *Administrative Sciences*, 14 (11), 288. https://doi.org/10.3390/admsci14110288

Gómez-Trigueros, I. (2023). Digital skills and ethical knowledge of teachers with TPACK in higher education. *Contemporary Educational Technology*. https://doi.org/10.30935/cedtech/12874.

Hair Jr. J. F., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). *Multivariate data analysis (seventh ed.)*. Prentice-Hall International. *ISBN*: 978-1-292-02190-4

Ivanov, S., Soliman, M., Tuomi, A., Alkathiri, N. A. & Al-Alawi, A. N. (2024). Drivers of generative AI adoption in higher education through the lens of the Theory of Planned Behaviour. *Technology in Society*, 77 (102521), 102521. https://doi.org/10.1016/j.techsoc.2024.102521

Jaffar, M., Jogezai, N., Latiff, A., Baloch, F. & Khilji, G. (2024). University teachers at the crossroads: unpacking their intentions toward ChatGPT's instructional use. *Journal of Applied Research in Higher Education*. https://doi.org/10.1108/jarhe-10-2023-0463.

Jain, K. K. & Raghuram, J. N. V. (2024). Gen-AI integration in higher education: Predicting intentions using SEM-ANN approach. *Education and Information Technologies*. https://doi.org/10.1007/s10639-024-12506-4

Jatileni, C. N., Sanusi, I. T., Olaleye, S. A., Ayanwale, M. A., Agbo, F. J. & Oyelere, P. B. (2023). Artificial intelligence in compulsory level of education: Perspectives from Namibian in-service teachers. *Education and Information Technologies*, 1–28. https://doi.org/10.1007/s10639-023-12341-z

Johnson, D. & Verdicchio, M. (2017). AI Anxiety. *Journal of the Association for Information Science and Technology*, 68. https://doi.org/10.1002/asi.23867

Kusmawan, U. (2023). Redefining Teacher Training: The Promise of AI-Supported Teaching Practices. *Journal of Advances in Education and Philosophy*. https://doi.org/10.36348/jaep.2023.v07i09.001

Leddy, M. & Creanor, N. (2024). Exploring How Education Can Leverage Artificial Intelligence for Social Good. *European Conference on Innovation and Entrepreneurship*. https://doi.org/10.34190/ecie.19.1.2906

Lin, H., Karusala, N., Okolo, C. T., D'Ignazio, C. & Gajos, K. Z. (2024). "Come to us first": Centering Community Organizations in Artificial Intelligence for Social Good Partnerships. *Proceedings of the ACM on Human-Computer Interaction, 8(CSCW2)*, 1–28. https://doi.org/10.1145/3687009

Ma, S. & Lei, L. (2024). The factors influencing teacher education students' willingness to adopt artificial intelligence technology for information-based teaching. *Asia Pacific Journal of Education*, 44 (1), 94–111. https://doi.org/10.1080/02188791.2024.2305155

Mandić, D. (2023). Report on Smart Education in the Republic of Serbia. In: Zhuang, R., et al. (eds.). *Smart Education in China and Central & Eastern European Countries. Lecture Notes in Educational Technology*, 271–291. Springer.

Mandić, D. P., Miščević, G. M. & Bujišić, L. G. (2024). Evaluating the quality of responses generated by ChatGPT. *Metodička teorija i praksa*, 27 (1), 5–19. https://doi.org/10.5937/metpra27-51446

Milutinović, V. (2016). An exploration of acceptance of innovative computer use in teaching mathematics among pre-service class teachers and mathematics teachers. *Zbornik Instituta za pedagoska istrazivanja,* 48 (2), 339–366. https://doi.org/10.2298/ZIPI1602339M

Milutinović, V. (2022). Examining the influence of pre-service teachers' digital native traits on their technology acceptance: A Serbian perspective. *Education and Information Technologies*, 27, 6483–6511. https://doi.org/10.1007/s10639-022-10887-y

Milutinović, V. (2024). Unlocking the code: Exploring predictors of future interest in learning computer programming among primary school boys and girls. *International Journal of Human-Computer Interaction*, 1–18. https://doi.org/10.1080/10447318.2024.2331877

Milutinović, V. & Mandić, D. (2022). Predviđanje prihvatanja upotrebe računara na tradicionalnom i inovativnom nivou u nastavi matematike u Srbiji. *Inovacije u Nastavi*, 35 (2), 71–88. https://doi.org/10.5937/inovacije2202071M

Mishra, M. S. (2024). Revolutionizing education: The impact of AI-enhanced teaching strategies. *International Journal for Research in Applied Science and Engineering Technology*, 12 (9), 9–32. https://doi.org/10.22214/ijraset.2024.64127

Mishra, P. & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Mladenović, V., Kostić, M., Milošević, D., Zanaj, E. & Đorđević, S. (2024). SYSTEM FOR PREDICTION AND BALANCING EXCESS FLUID IN THE BODY DURING HEMODIALYSIS BASED ON ARTIFICIAL INTELLIGENCE (Patent No. RS20240030A2). In Patent (RS20240030A2). https://worldwide.espacenet.com/patent/search/family/090057728/publication/RS20240030A2?q=pn%3DRS20240030A2

Moreno, J., Montoro, M. & Colon, A. (2019). Changes in Teacher Training within the TPACK Model Framework: A Systematic Review. *Sustainability*. https://doi.org/10.3390/SU11071870

Mubofu, C. & Kitali, L. (2024). Artificial Intelligence in education: Ethics & responsible implementation. *Journal of Interdisciplinary Studies in Education*, 13 (2). https://doi.org/10.32674/9rjyjp52

Mutawa, A. M. & Sruthi, S. (2024). UNESCO's AI competency framework: Challenges and opportunities in educational settings. In: *Advances in Educational Technologies and Instructional Design*, 75–96. IGI Global. https://doi.org/10.4018/979-8-3693-0884-4.ch004

Ning, Y., Zhang, C., Xu, B., Zhou, Y. & Wijaya, T. T. (2024). Teachers' AI-TPACK: Exploring the Relationship between Knowledge Elements. *Sustainability*, 16 (3), 978. https://doi.org/10.3390/su16030978

Salas-Pilco, S. Z., Xiao, K. & Hu, X. (2022). Artificial intelligence and learning analytics in teacher education: A systematic review. *Education Sciences*, 12 (8), 569. https://doi.org/10.3390/educsci12080569

Sanusi, I. T., Ayanwale, M. A. & Chiu, T. K. (2023). Investigating the moderating effects of social good and confidence on teachers' intention to prepare school students for artificial intelligence education. *Education and information technologies*, 1–23. https://doi.org/10.1007/s10639-023-12250-1

Sanusi, I. T., Ayanwale, M. A. & Tolorunleke, A. E. (2024). Investigating pre-service teachers' artificial intelligence perception from the perspective of planned behavior theory. *Computers and Education: Artificial Intelligence*, 100202. https://doi.org/10.1016/j.caeai.2024.100202

Sengsri, S. & Khunratchasana, K. (2024). Artificial intelligence competence: A crucial skill for the digital citizens. *International Education Studies*, 17 (3), 75. https://doi.org/10.5539/ies.v17n3p75

Seo, K., Tang, J., Roll, I., Fels, S. & Yoon, D. (2021). The impact of artificial intelligence on learner–instructor interaction in online learning. *International Journal of Educational Technology in Higher Education*, 18. https://doi.org/10.1186/s41239-021-00292-9.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15 (2), 4–14. https://doi.org/10.3102/0013189X015002004

Sun, F., Tian, P., Sun, D., Fan, Y. & Yang, Y. (2024). Pre-service teachers' inclination to integrate AI into STEM education: Analysis of influencing factors. *British Journal of Educational Technology: Journal of the Council for Educational Technology*. https://doi.org/10.1111/bjet.13469

Sutrisman, H., Simanjuntak, R., Prihartanto, A. & Kusumo, B. (2024). The Impact of Using AI in Learning on Understanding of Material by Young Students. *International Journal of Educational Research*. https://doi.org/10.62951/ijer.v1i3.43.

Talukdar, E. (2023). Impact of Artificial Intelligence based Learning Process on Students' Tendency to Involve in Independent Research at the Higher Secondary School. *International Journal on Recent and Innovation Trends in Computing and Communication*. https://doi.org/10.17762/ijritcc.v11i9.9924.

Tseng, J., Chai, C., Tan, L. & Park, M. (2020). A critical review of research on technological pedagogical and content knowledge (TPACK) in language teaching. *Computer Assisted Language Learning*, 35, 948–971. https://doi.org/10.1080/09588221.2020.1868531.

Wangdi, P. (2024). Integrating artificial Intelligence in education: Trends and opportunities. *International Journal of Research in STEM Education*, 6 (2), 50–60. https://doi.org/10.33830/ijrse.v6i2.1722

Yang, C., Huan, S. & Yang, Y. (2020). A Practical Teaching Mode for Colleges Supported by Artificial Intelligence. *Int. J. Emerg. Technol. Learn.*, 15, 195–206. https://doi.org/10.3991/ijet.v15i17.16737.

Yang, Y. & Xia, N. (2023). Enhancing Students' Metacognition via AI-Driven Educational Support Systems. *Int. J. Emerg. Technol. Learn.*, 18, 133–148. https://doi.org/10.3991/ijet.v18i24.45647.

Zhang, C., Schießl, J., Plößl, L., Hofmann, F. & Gläser-Zikuda, M. (2023). Acceptance of artificial intelligence among pre-service teachers: a multigroup analysis. *International Journal of Educational Technology in Higher Education*, 20 (1), 49. https://doi.org/10.1186/s41239-023-00420-7

Zhang, J. & Zhang, Z. (2024). AI in teacher education: Unlocking new dimensions in teaching support, inclusive learning, and digital literacy. *J. Comput. Assist. Learn.*, 40, 1871–1885. https://doi.org/10.1111/jcal.12988.

Zhang, W. & Hou, Z. (2024). College Teachers' Behavioral Intention to Adopt Artificial Intelligence-Assisted Teaching Systems. *IEEE Access*, 12, 152812–152824. https://doi.org/10.1109/ACCESS.2024.3445909.

APPENDIX

LIST OF SCALES AND CORRESPONDING ITEMS USED IN THIS STUDY

AI for Social Good (SG) (Chai, C. S., Wang, X. & Xu, C., 2020)

SG1 AI can be used to help disadvantaged people.
SG2 AI can significantly aid in treatment.
SG3 AI can promote human well-being.
SG4 The use of AI should aim to achieve common good.
SG5 I wish to use my AI knowledge to serve others.

Intelligent-Ethical TPACK (IETPACK) (Celik, I., 2023)
IETPACK1 I know how to use different AI-based tools for adaptive feedback in education.
IETPACK2 I know how to use different AI-based tools for personalized learning in education.
IETPACK3 I know how to use different AI-based tools for real-time feedback in education.
IETPACK4 I can teach a subject using AI-based tools with diverse teaching strategies.
IETPACK5 I can teach lessons that appropriately combine my teaching content, AI-based tools, and teaching strategies.
IETPACK6 I can take a leadership role among my colleagues in the integration of AI-based tools into our teaching field.
IETPACK7 I can select various AI-based tools to monitor students' learning in my teaching process.
IETPACK8 I can assess to what extent AI-based tools consider individual differences (e.g., race and gender) of all students in my teaching.
IETPACK9 I can evaluate to what extent AI-based tools behave fair to all students in my teaching.
IETPACK10 I can understand the justification of any decision made by an AI-based tool.

Subjective Norm (SN) (Chai, C. S., Wang, X. & Xu, C., 2020)
SN1 Most people I know believe that artificial intelligence should be used.
SN2 My colleagues from the studies believe that it is necessary to use artificial intelligence.
SN3 The people who are important to me believe that I should use artificial intelligence.

Anxiety due to Artificial Intelligence (ANX) (Chai, C. S., Wang, X. & Xu, C., 2020)
ANX1 When I think about AI, I cannot answer many questions about my future.
ANX2 When I consider the capabilities of AI, I think about how difficult my future will be.
ANX3 I have an uneasy, upset feeling when I think about AI.

Behavioral Intention (BI) (Chai, C. S., Wang, X. & Xu, C., 2020)
BI1 I intend to use artificial intelligence in my future educational work.
BI2 I intend to follow the latest applications of artificial intelligence in education.
BI3 I will probably use artificial intelligence in my future educational work.
BI4 I intend to spend time learning about the application of artificial intelligence in education in the future.
BI5 I intend to pay attention to new applications of artificial intelligence in education in the future.
BI6 I will use some form of artificial intelligence in my future work.

Competencies (COMP) measured from 1 – very low to 5 – very high
COMP1 Rate your level of competence in using computers for artificial intelligence.
COMP2 Rate your level of competence in using artificial intelligence in general.
COMP3 Rate your level of competence in using artificial intelligence in education.

Verica R. Milutinović[4]
Suzana M. Đorđević[5]
Ivana R. Obradović[6]
Univerzitet u Kragujevcu, Fakultet pedagoških nauka, Jagodina (Srbija)

FAKTORI KOJI UTIČU NA PRIHVATANJE VEŠTAČKE INTELIGENCIJE U OBRAZOVANJU

Sažetak: U svetlu sve većeg uticaja veštačke inteligencije (VI) u obrazovanju, ova studija istražuje faktore koji utiču na nameru budućih učitelja i vaspitača da integrišu alate zasnovane na VI u svoju nastavnu praksu, oslanjajući se na postojeća istraživanja o VI u obrazovanju. Analizira se kako promenljive, kao što su inteligentno-etičko tehnološko-pedagoško-sadržajno znanje (TPACK), anksioznost u vezi sa VI, subjektivna norma, VI za društveno dobro i samoprocenjena kompetencija u vezi sa VI, utiču na tu nameru. Istraživanje je obuhvatilo 157 budućih učitelja i vaspitača sa Fakulteta za obrazovanje u Jagodini i Beogradu. Analiza podataka metodom višestruke regresije pokazala je da predložene varijable objašnjavaju 72,9% varijanse u nameri korišćenja VI alata. Najveći uticaj imao je inteligentno-etički TPACK ($\beta = 0{,}501$, $p < 0{,}001$), zatim VI kao sredstvo za društveno dobro ($\beta = 0{,}296$, $p < 0{,}001$) i subjektivna norma ($\beta = 0{,}195$, $p < 0{,}01$). Ovi rezultati naglašavaju značaj unapređenja programa obrazovanja učitelja i vaspitača, posebno u razvoju inteligentno-etičkog TPACK-a, kao i podizanja svesti o ulozi VI u promociji društvenog dobra.

Ključne reči: veštačka inteligencija, budući učitelji i vaspitači, alati zasnovani na VI, prihvatanje VI, inteligentno-etički TPACK

4 verica.milutinovic@pefja.kg.ac.rs, https://orcid.org/0000-0003-0325-7285; date of birth 1972.
5 suzana.djordjevic@pefja.kg.ac.rs, https://orcid.org/0009-0007-7666-1269; date of birth 1993.
6 ivanaoinformatika@gmail.com, https://orcid.org/0009-0000-6499-8031; date of birth 1999.