Teachers' Attitude Towards the Instructional Role of AI Technologies

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Abstract

The rapid integration of artificial intelligence in education has transformed teaching and learning. This study explores teachers' attitudes towards the instructional role of AI technologies. Data were collected from 35 teachers across basic education through an online survey. Teachers have an understanding about AI concepts, tools, and its limitations and risks. The lowest-rated knowledge item concerns whether AI can reduce repetitive administrative work. They react to AI in a largely positive way. Behavioural intentions toward using AI are more cautious. They are only moderately willing to experiment with AI tools, join related training, or adjust teaching methods based on AI recommendations. The use of AI in the preparation of instructional materials and student assessments yields the lowest scores. The study concludes that teachers recognize the promise of AI technologies for education and organizational readiness is crucial for meaningful integration into instructional practice. However, the limitations and risks of AI technologies must be carefully managed. Ethical frameworks, equitable access policies, and robust teacher training are essential to mitigate the negative impacts.

Keywords: artificial intelligence, AI in education, behavioural intention, teachers' attitudes

1. Introduction

Artificial intelligence has now revolutionized in all sectors including teaching and teacher education. Teachers must engage students with modern classrooms by integrating digital tools, adaptive learning platforms, intelligent tutoring systems, generative AI, and other AI-driven technologies. AI technologies can enhance and alter teaching and learning through understanding by design (Thararattanasuwan & Prachagool, 2024). It can provide immediate feedback to students, encourage individualized learning, and support pedagogical techniques for modern teachers.

The new world of education is introducing artificial intelligence to basic education. As AI technologies advance, they can revolutionize instruction and improve student learning. Also, it is dynamically adapting to educational content and instructional strategies to meet student needs (Xu, 2024). AI-powered solutions can help teachers differentiate lessons. Policymakers, school administrators, and educational academics must collaborate to devise policies that combine infrastructure investment. Teacher capacity training and ethical governance should be used as part of creative, student-centered teaching to educate students (Nuangchalerm & Prachagool, 2023; Mnguni et al., 2024).

Teacher opinions, expertise, and attitudes are significant mediators due to their major role in education. They are sceptical, inexperienced, afraid, or unprepared may misapply or discard even the most modern technology. However, positive attitudes, proper training, institutional support, and resources paired with educational concepts can help integrate AI. More research is being conducted on teachers' views regarding AI and AI-enabled tools in education (Kim et al., 2022; Alwaqdani, 2025; Gayed, 2025). Several studies have examined both attitudes and their influencing factors. Perceived usefulness, convenience of use, technological readiness, and pedagogical views predict teachers' readiness to adopt AI in classroom assessment.

Artificial intelligence technology can help teachers succeed in their instructional practices. They are progressively perceiving AI as a driver for individualized learning, formative evaluation, and adaptable learning environments (Sadykova & Kayumova, 2024). Many educators explained that AI is a valuable educational resource, but teachers also lack proficiency and infrequent utilization, have deficiencies in digital skills, and have inadequate exposure to AI technologies (Nugroho et al., 2024). This evidence indicates the need for focused professional development and

continuous assistance for cultivating the confidence and technical expertise required for successful AI-enhanced learning. Teachers can engage AI technology-intensive fields more than their counterparts in conventional classrooms (Liu, 2024). In addition to technological adoption, experts indicate that educators play a crucial role in directing the ethical and responsible use of AI in educational settings. The teacher's readiness to engage in discussions about AI-aided instruction can contribute to the equitable implementation of AI and the safeguarding of student welfare (Fatima, 2024). The effective implementation of AI in the classroom is imperative to tackle these challenges through teacher training programs (Celik et al., 2022).

2. Method

2.1 Research Design

This study adopted a quantitative method and descriptive-based survey design to investigate teachers' attitudes toward the instructional role of artificial intelligence technologies. The survey approach was chosen to enable systematic collection of attitudes from a large sample and supports statistical analysis (Creswell & Creswell, 2017).

2.2 Participants

The participants consisted of 35 teachers working in primary and secondary schools that have begun experimenting with AI-supported instructional technologies. They enrolled during curriculum development, master's degree of education students from Mahasarakham University, Thailand. They participated in the study in the second semester of the 2024 academic year. They learn the essential abilities to use a variety of artificial intelligence tools for teaching and learning.

2.3 Research Instrument

The research instrument is an attitude of teacher's questionnaire that explore artificial intelligence technologies for education. The questionnaire consists of 3 components, 18 questions and a 7-point Likert-rating scale. The questionnaire has two sections: The first section of this study focuses on the attitude of teachers towards instructional role of artificial intelligence technologies. The quality of research instrument was validated by 5 experts. The index of congruence rang 0.60-1.00. The questionnaires were revised based on qualitative comments and then performing all items through Google Forms. A 7-level estimate scale, ranging from the strongly agree to the strongly disagree levels. The attitudinal orientation – a set of Likert-type statements employed for exploring cognitive, affective, and behavioural intentions toward using AI in teaching. In the second part of the survey, an open-ended questionnaire was used to collect free opinions on the knowledge of generative artificial intelligence technologies in teaching and learning.

2.4 Data Collection

The researchers collected data through online survey during May 2025. The accuracy and integrity of the data which can be analysed the data using basic statistics, including mean and standard deviations, and then compared the average scores obtained components of teachers' attitude level. The level of attitude can be calculated and interpreted mean ranges: Strongly Disagree (1.00-1.50), Disagree (1.51-2.50), Slightly Disagree (2.51-3.50), Neither Agree nor Disagree (3.51-4.50), Slightly Agree (4.51-5.50), Agree (5.51-6.50), and Strongly Agree (6.51-7.00). Data were analysed by preliminary screening included checking for missing values and outliers. Descriptive statistics were used through mean, standard deviation, and frequencies. Data were computed to summarize attitude scores and level of attitude towards instructional role of AI technologies. ANOVA was employed to explore attitude differences by components of attitudes. If the result of hypothesis testing answers the presence of significant differences, further post-hoc tests are required.

3. Results and Discussion

The advancement of artificial intelligence has created substantial prospects for revolutionizing education. This study categorizes the data into three components: knowledge, feeling, and behaviour. Each category has many assertions evaluated on a Likert-type scale ranging from severe disagreement to strong agreement. The findings indicate that teachers have a robust understanding of AI, and generally favourable sentiments on its use, and intentions to utilize AI are limited. The empirical study can be shown in Table 1.

Table 1. Teachers' Attitude Towards Instructional Role of AI Technologies

Component	Item	Mean	SD	Interpretation
Knowledge	I understand the working principles of AI that can help in improving teaching and learning	6.31	1.46	Agree
	I know that AI can analyze data to help plan the right instruction for each student	6.26	1.35	Agree
	I know that there are different AI tools that can be used to help with teaching and learning	6.57	1.29	Strongly Agree
	I understand the limitations and risks that can arise from using AI in teaching and learning	6.34	1.36	Agree
	I know that using AI will reduce the redundant workload of teachers	5.94	1.42	Agree
	Mean	**6.29**	**0.94**	**Agree**
Feeling	I feel that the adoption of AI in teaching and learning is essential for the modern classroom	6.37	1.43	Agree
	I feel confident to use AI in planning and organizing teaching and learning activities	6.00	1.34	Agree
	I was excited to learn AI technology that improves teaching and learning	6.51	1.24	Strongly Agree
	I was worried that AI might replace teachers in the future	4.46	2.00	Neither Agree nor Disagree
	I feel that AI helps make teaching more fun and effective	6.37	1.08	Agree
	I feel that implementing AI is too cumbersome and complicated	3.83	2.11	Neither Agree nor Disagree
	Mean	**5.59**	**1.74**	**Agree**
Behaviour	I am always trying new AI technologies to help improve teaching and learning	4.60	0.96	Slightly Agree
	I intend to attend a training or activity related to the use of AI	4.57	0.84	Slightly Agree
	I'm ready to adapt my teaching methods based on AI-powered recommendations or data	4.17	0.84	Neither Agree nor Disagree
	I'm ready to adapt my teaching methods based on AI-powered recommendations or data	4.40	0.79	Neither Agree nor Disagree
	I have a tendency to use AI to help me prepare teaching materials and classroom activities	4.51	0.65	Slightly Agree
	I have a tendency to use AI to help me prepare teaching materials and classroom activities	4.43	0.80	Neither Agree nor Disagree
	I am inclined to use AI to assess and track student progress	4.09	1.06	Neither Agree nor Disagree
	Mean	**4.40**	**0.78**	**Neither Agree nor Disagree**

The knowledge component of the dataset indicates a very high level of awareness among educators. The mean score indicated a widespread consensus. Teachers have a comprehension of the operational concepts of AI that can augment teaching and learning and acknowledge. AI can evaluate data to provide education tailored to specific students. The diverse array of AI tools available ranks highest, indicating that teachers are knowledgeable about the many technologies now accessible for educational purposes. They have an awareness of AI's limitations and potential threats. The component with the lowest score—belief that AI will alleviate duplicate workloads for them—indicates

agreement; however, it implies that some educators are sceptical about AI's potential to significantly diminish administrative responsibilities.

The emotional reactions of teachers to AI, as reflected in the emotion component. It reveals a complex landscape. A significant number of participants believe that integrating AI is crucial for contemporary classrooms, and they demonstrate trust in utilizing AI for lesson planning and organization. The enthusiasm for learning technologies that improve teaching and learning is rated at the highest level. Teachers concur with AI, which may enhance the enjoyment and efficacy of education. The most notable findings are in the behavioural aspect, where teachers stated behaviours and intentions about AI are significantly more cautious. Respondents showed a moderate inclination to engage with AI technologies or participate in training pertaining to AI use. Their willingness to modify teaching techniques according to AI-driven suggestions is neutral, with scores between 4.17 and 4.40. Similarly, the utilization of AI for the preparation of instructional materials scores between 4.43 and 4.51, and the application of AI for evaluating student development ranks lowest with a mean of 4.09. The findings indicate that they possess substantial knowledge and favourable sentiments toward AI for education. But some teachers may not yet have converted their AI interest into instructional practices.

Table 2. One-way ANOVA

Component	Mean	SD	df	F	p
Knowledge	3.00	1.58	2	0.404	0.678
Feeling	3.50	1.87			
Behaviour	4.00	2.16			

From Table 2. There is no significant difference in the mean scores of attitude components among the 3 components. Although the means increase slightly from knowledge to behaviour. This difference is likely due to chance because the p-value is high (0.678). Standard deviations are relatively large compared with the mean differences.

The teachers' attitudes towards the role of AI in education show there are no substantial discrepancies in mean scores across the three components. The average scores show a modest rise from knowledge to behaviour. This trend lacks statistical significance, which suggests a consistency in opinions among instructors. Research suggests that teachers often view AI as a valuable resource. While they voice apprehensions about its intricacy and their own limited proficiency in its successful use (Sadykova & Kayumova, 2024). The findings explore the need for specialized training programs to bolster teachers' confidence and proficiency in utilizing AI technology in learning environments (Aisulu, 2024).

The diversity among the 3 components provides further insight. Knowledge questions exhibit considerable consensus. The emotional component demonstrates the most variance. This report suggests that teachers vary in their enthusiasm or worry. However, the majority employ a comparable wait-and-see strategy for actual implementation. These dynamics are essential for educational leaders aiming to promote significant integration of AI. It reflects past trends in the adoption of educational technology, where excitement and understanding frequently surpass alterations in classroom practices. Policymakers and educational leaders may create methods that foster both cognitive acceptance and practical involvement.

The dataset depicts teachers as predominantly knowledgeable and positive toward AI, although reluctant to engage in significant behavioural transformation. They acknowledge the potential of AI to improve education, customize learning, and optimize workloads, although they also express apprehensions regarding complexity, workload consequences, and professional identity (Nuangchalerm et al., 2024). Bridging the divide between promise and implementation necessitates methodical endeavours to enhance instructors' confidence, provide supportive infrastructure, and position AI as a collaborator in the educational process. Only through such means can educators progress beyond mere consensus and excitement to using AI as an essential component of their teaching methodology.

The findings reflect teachers' attitudes toward AI integration in education. The technology acceptance model (Davis & Granić, 2024) raised the perceived usefulness and perceived ease of use influence on users' acceptance of technology. In this study, teachers' positive attitudes regarding AI's ability to reduce workload and help them in the teaching and learning process were examined. Teachers' willingness to adapt methods based on AI recommendations relates to self-efficacy (Bandura, 2006). This influences technology adoption. Teachers confident in their capacity to

integrate AI are more likely to modify instructional practices. Teachers' feelings about AI, including excitement and concerns about replacement, mirror the dual role of attitudes as predictors of behaviour (Ajzen, 1991; Ajzen, 1996). While many recognize AI's potential, they seem to worry about cumbersomeness, and the future impact reflects the need for supportive policies and professional development to shift attitudes positively (Kirk et al., 2015).

The knowledge component reflects a notably high level of awareness among teachers. They have operational concepts of AI and its potential to enhance teaching and learning processes. AI can analyse educational data and unit plan to tailor learning experiences to student needs. Teachers are familiar with various technologies available for pedagogical use through AI technologies (Qiang, 2025). However, many participants express their feeling to the trust in AI-assisted lesson planning and classroom organization. While teachers intellectually and emotionally support AI integration, practical adoption lags. Bridging this gap between understanding and action will be crucial for the meaningful integration of AI in education. Moreover, the limitations and risks of AI technologies for education must be carefully managed. It may reduce the human interaction between teachers and students (Dokmai & Sanrattana, 2025). The paradigm of learning is not only cognitive development, but also it involves emotional, social, and moral dimensions. AI tools can help teachers' success in essay writing, problem-solving, and information retrieval, but the excessive dependence may hinder students' development of critical thinking, creativity, and problem-solving skills. This may undermine teachers' professional autonomy, ethical dimension, and pedagogical creativity through authentic classroom.

4. Conclusion

The three attitudinal components—knowledge, feeling, and behaviour—show that teachers understand AI role in education and instructional potential in positively. However, they are mildly sceptical to AI uses in education by responsibilities. Teachers are somewhat interested in AI tools, training, and AI-recommended to teaching practices. The one-way ANOVA shows there is no significant differences between the three components. According to the Technology Acceptance Model, perceived utility and simplicity of use promote adoption. Whereas self-efficacy predicts instructors' readiness to change practice. Teachers who feel confident using AI are more likely to incorporate technology into courses. AI can enhance and personalize learning. Though they see its potential and embrace its role in modern classrooms. Schools and policy makers may assist teachers implement beyond conceptual agreement, habitual use of AI as an essential part of effective teaching and learning.

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