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Educators' Perceptions of AI and ChatGPT: Comfort, Ethics, and Readiness in Teaching

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Abstract
This study examines educators' perceptions of AI, particularly ChatGPT, focusing on comfort, ethical considerations, and teaching readiness within teacher education. The study responds to the rapid integration of AI in education and the need for its responsible and pedagogically meaningful use. An explanatory sequential mixed-methods design was employed. Quantitative data were collected through an online survey of 120 in-service educators from various educational levels in Indonesia, measuring technology comfort, perceived benefits and risks of AI, personal readiness, and institutional support. To deepen the findings, qualitative data were gathered through semi-structured interviews with 20 purposively selected participants. Quantitative data were analysed using descriptive statistics, exploratory factor analysis, reliability testing, and correlation analysis, while qualitative data were analysed thematically with support from LDA topic modelling. The results show that most educators hold positive attitudes toward AI and perceive ChatGPT as useful for instructional planning, writing assistance, and feedback provision. Nevertheless, ethical concerns, particularly related to plagiarism, fairness, and student dependency, remain significant. Although educators report moderate to high personal readiness to adopt AI, institutional support in terms of clear policies, ethical guidelines, and professional development is still limited. This study underscores the importance of strengthening AI literacy, developing ethical frameworks, and enhancing institutional support to ensure the sustainable and responsible integration of AI in teacher education.

Keywords: Artificial Intelligence; ChatGPT; Ethics; Teacher Education; Teaching Readiness

INTRODUCTION

Artificial Intelligence (AI) is defined as the simulation of human intelligence processes by machines, specifically computer systems, which includes the ability to learn, reason, and self-correct. This process allows machines to obtain information, apply rules to conclude, as well as improve performance through continuous feedback and improvement (Russell et al., 2021). In the context of education, AI is increasingly occupying an important position due to its potential to support the learning process and professional development of teachers (Seufert et al., 2021). AI is also understood as an algorithmic system that can reason, learn, and adjust itself to imitate human intelligence (Ng et al., 2021; Wang, 2019). With this ability, AI is seen as one of the most significant innovations in the digital era. The development of machine learning and generative language models, such as ChatGPT, has opened up new opportunities for teachers to analyze student needs, identify learning weaknesses, and provide rapid and adaptive individualized feedback (X. Chen et al., 2020; Ferguson et al., 2022; Huang et al., 2023; Schmidt & Strasser, 2022; Tang et al., 2023; Zhai et al., 2021).

More specifically, research has shown that AI can help teachers improve the quality of their teaching and achieve better learning outcomes in a variety of ways (X. Chen et al., 2020; Tang et al., 2023; Zhai et al., 2021). The broader field of research on Educational Technology and Computer-Supported Collaborative Learning (CSCL) has a long history of application to higher education and teacher training, and the literature shows its benefits in improving academic achievement and increasing students' motivation and confidence (Lee et al., 2014; Macaro et al., 2012; Zhang & Zou, 2022). This is increasingly relevant in the context of the need for teachers to master digital literacy skills and technology-based pedagogy in the era of globalization (Alam, 2023; Norman et al., 2024). For example, increased internet access and advances in mobile computing have given birth to online learning platforms as well as interactive applications that allow teachers and students to access a wide range of educational resources from anywhere (Criollo-C et al., 2021; Karakaya & Bozkurt, 2022; Morgana, 2019; Reinhardt, 2019; Şad et al., 2022; Zain & Bowles, 2021).

Although the studies described earlier provide a number of important findings regarding the use of AI in learning, these findings are still limited because they are mostly small-scale qualitative studies that only highlight the technical aspects of using ChatGPT and interactive visual media. These studies also still leave various questions that have not been answered thoroughly. As mentioned earlier, the definition of AI in the context of teacher education has not been fully formulated (Ng et al., 2021), so it is still unknown what teachers' views and experiences are when integrating AI into their teaching practices. Therefore, this study considers it important to understand more deeply how teachers define AI in their professional context (RQ1).

Based on these limitations, a number of research questions arise that need to be answered. First, how teachers define AI in the context of their educational practices (RQ1). Second, the extent to which teachers feel comfortable using ChatGPT and interactive visual media in teaching activities (RQ2). Third, how do teachers assess the balance between the benefits and risks of this technology (RQ3)? Fourth, the extent to which teachers feel prepared and supported in the AI adoption process (RQ4). Finally, how the relationship between teachers' perceptions, readiness, and positive attitudes towards AI can be understood comprehensively (RQ5).

The urgency of this research is even more evident considering the gap between research results and practice in the field. Teachers often do not adopt evidence-based methods or strategies due to limited time, technical support, and adequate training (Aljemely, 2024; Georgiou, 2020). In fact, previous research confirms that AI can significantly improve the quality of learning (Giannakos et al., 2025). Therefore, understanding of real experiences, reflections, and teachers' attitudes towards AI is very important to ensure that technology can be implemented effectively and sustainably in education.

To answer these problems, this study uses a mixed-method approach. Quantitative analysis was used to map teachers' general attitudes towards ChatGPT and interactive visual design, while qualitative analysis was directed to explore the experiences, reflections, and reasons underlying their attitudes (Dawadi et al., 2021). This approach allows for data triangulation, thus providing a more complete picture of the phenomenon being studied. The purpose of this study is to make a theoretical contribution to enriching the literature on the integration of AI in teacher education, as well as practical benefits in the form of recommendations for more innovative learning strategies.

RESEARCH METHODS

The American Psychological Association's (2020) mixed method article reporting standards are used as a guideline in explaining the methodology of this study (Levitt et al., 2018). Quantitative data were collected using multiple-choice closed-ended questions and a Likert scale in an online survey. Qualitative data were obtained through open-ended questions in the same survey and follow-up interviews via video conference. From a pragmatic perspective, this combination of data is seen as the most appropriate to answer the exploratory nature of the research. Researchers first collect survey data, then conduct interviews to deepen information.

Participants and Sampling Procedures

This study employed a non-probability convenience sampling strategy. The target population comprised in-service teachers and school leaders working at different educational levels (early childhood, primary, lower and upper secondary, and vocational education) in Indonesia. Convenience sampling was considered appropriate for several academic reasons. First, the study has an exploratory character, aiming to obtain an initial mapping of educators' perceptions of AI rather than to produce statistically generalisable estimates. Second, there is no single, accessible sampling frame of teachers who are currently exposed to or using AI tools, which makes the implementation of probability sampling procedures difficult in practice. Third, practical constraints related to time, funding, and access to schools required the researchers to rely on existing professional networks and social media channels (e.g., WhatsApp, Telegram, Facebook, LinkedIn) to recruit participants who were available and willing to participate. At the same time, the recruitment strategy deliberately targeted teachers from different school levels and institutional contexts in order to capture a wide range of backgrounds and experiences.

The online survey was conducted using a Google Form, and the link was shared through social networks (WhatsApp Group, Telegram, Facebook, and LinkedIn), as well as through e-mails sent to the teacher's network. Researchers received responses over four months, from November 2024 to February 2025. After the data collection period closed, the number of participants (N) was 120. The data is then exported to the statistical analysis package. The sociodemographic characteristics of the study participants are shown in Table 1.

Table 1. Sociodemographic characteristics of participants (n = 120)

Category	Sum	Percentage (%)
Position		
Teacher	1.734	80.13
Principal	307	14.19
Vice Principal	93	4.30
Education Personnel	30	1.39
Teaching Level		
SD	1.285	59,38
SMP	425	19.64
SMA	253	11.69
SMK	142	6.56
Early Childhood Education	33	1.52
PNF	17	0.78
SLB	10	0.46
Experience Using ChatGPT		
Totally agree, have tried	1.100	50.83
Agree Have Tried	645	29.79
Neutral / Hesitant	250	11.55
Disagree	120	5.55
Strongly Disagree	50	2.31

In addition, in-depth interviews were conducted with 20 participants who were purposively selected from the survey respondent group, taking into account variations in the field of study, teaching experience, and level of use of AI. The interview was conducted online through the Zoom application, with a duration of 40–60 minutes. Descriptive information about the interview participants is shown in Table 2.

Table 2. Interview participant description (n = 20)

Participant Code	Gender	Age	Position	Educational Level	ChatGPT Experience	Teaching experience
P1	Woman	31-40	Vice Principal	SD	Used	6-10 years
P2	Man	<30	Principal	SMA	Just Tried	11-20 years
P3	Woman	>50	Vice Principal	SMK	Never	11-20 years
P4	Woman	>50	Principal	SMK	Just Tried	6-10 years
P5	Man	<30	Teacher	SMA	Used	6-10 years
P6	Man	41-50	Teacher	JUNIOR	Never	>20 years old
P7	Woman	31-40	Teacher	SD	Just Tried	6-10 years
P8	Man	41-50	Teacher	SMK	Used	11-20 years
P9	Woman	31-40	Guru	SMP	Just Tried	<5 years old
P10	Man	>50	Guru	SMA	Never	>20 years old
P11	Woman	31-40	Teacher	SMP	Used	6-10 years
P12	Man	41-50	Principal	SD	Just Tried	11-20 years
P13	Woman	31-40	Teacher	SMA	Used	<5 years old
P14	Man	<30	Teacher	SMK	Never	<5 years old
P15	Woman	41-50	Vice Principal	SMA	Just Tried	11-20 years
P16	Woman	31-40	Teacher	SD	Used	6-10 years
P17	Man	>50	Principal	SMK	Just Tried	>20 years old
P18	Man	31-40	Teacher	JUNIOR	Used	6-10 years
P19	Woman	41-50	Teacher	SMA	Never	11-20 years
P20	Man	<30	Teacher	SD	Just Tried	<5 years old

Research Instruments

The survey was designed to measure how teachers view the use of AI technology, particularly ChatGPT and interactive visual design, in learning. Since there is no validated standard instrument for this context, the researcher developed a questionnaire specifically. The first section (10 questions) contains the demographic data of the participants. Questions 11–16 measure teachers' comfort in using learning technology. Questions 17–22 examine teachers' assessments of the advantages and disadvantages of AI. Questions 23–27 highlight the extent to which teachers feel prepared and supported by the institution. Question 28 asked about teachers' interest in deepening the use of AI in teaching, while question 29 assessed their optimism about the future of AI in education. All items are arranged to have high face validity. Next, exploratory factor analysis is used to assess the dimensionality of the scale before constructing the subscale, and the internal reliability is tested using Cronbach's alpha.

Table 3. Structure of the survey instrument

Section	Item Numbers	Number of Items	Description
Demographic information	1–10	10	Participants' background (e.g., position, teaching level, years of experience, AI use).
Comfort with technology for teaching	11–16	6	Teachers' comfort using digital tools and technology-based practices in instruction.
Perceived advantages and disadvantages of AI	17–22	6	Teachers' evaluations of the benefits and risks of AI (e.g., efficiency, plagiarism, bias).

Section	Item Numbers	Number of Items	Description
Readiness and institutional support	23–27	5	Perceived personal readiness and the extent of institutional vision, guidance, and support.
Interest in further AI use	28	1	Teachers' interest in deepening their use of AI in teaching.
Optimism about the future of AI in education	29	1	Overall optimism regarding the role of AI in the future of education.

The semi-structured interview was conducted in Indonesian, with five main questions: (1) Do you think AI will become a widely used technology in education, or remain a niche technology? (2) What do you think are the most successful AI applications in the context of teaching? (3) What are the key ethical issues to consider when AI is used in education? (4) From a professional perspective, do you see AI as a threat to the role of teachers? Why or why not? (5) Have you seen any improvement in student learning outcomes or in your professional workload after using AI? All interviews were recorded and transcribed using Otter.ai, then manually verified by researchers to correct transcription errors.

Table 4. Semi-structured interview questions

No.	Main interview question	Focus
1	Do you think AI will become a widely used technology in education, or remain a niche technology?	General perception of the future role and diffusion of AI in education.
2	What do you think are the most successful AI applications in the context of teaching?	Perceived useful and effective AI applications in teaching practice.
3	What are the key ethical issues to consider when AI is used in education?	Ethical concerns (e.g., plagiarism, fairness, student autonomy) related to AI use.
4	From a professional perspective, do you see AI as a threat to the role of teachers? Why or why not?	Perception of AI as a potential threat or complement to teachers' professional roles.
5	Have you seen any improvement in student learning outcomes or in your professional workload after using AI?	Perceived impact of AI on student outcomes and teachers' workload/well-being.

Data Analysis

This study adopted an explanatory sequential mixed-methods design (QUAN → qual) (see Figure 1). In Phase 1, an online survey generated quantitative data on comfort with technology, familiarity with AI, ethical concerns, readiness, and institutional support, together with open-ended responses. Preliminary analysis of these results (descriptive statistics, factor scores, and patterns in the open-ended items) was then used to purposively select interview participants with contrasting profiles (e.g., high vs. low readiness, frequent vs. non-users of AI) and to refine the interview protocol. Thus, the core interview questions followed the same constructs as the survey but were adapted to probe the reasons behind particular response patterns, ethical dilemmas, and concrete examples of AI use in teaching. In Phase 2, semi-structured interviews were conducted and analysed thematically, and finally the quantitative and qualitative findings were integrated in the Results and Discussion to provide an overall interpretation of educators' perceptions of AI.

Qualitative data were analysed using thematic analysis following the stages of Miles, Huberman, and Saldaña (2014): data reduction, data display, and conclusion drawing. Themes were identified from respondents' written answers and post-survey interview transcripts through a layered manual coding process (open, axial, and selective coding). To complement this manual analysis, Latent Dirichlet Allocation (LDA) topic modelling was applied to the interview transcripts (Jelodar et al., 2019; Zhai et al., 2021). Several candidate models with different numbers of topics (e.g., k = 3–7) were compared using topic coherence scores and substantive interpretability, and a four-topic solution was retained because it showed the best balance between coherence and thematic clarity.

Triangulation between LDA output and manual coding was conducted by having two researchers independently code the data, compare their codes with the LDA-derived topics, and discuss discrepancies. Intercoder reliability was assessed using Cohen's kappa, and disagreements were resolved through discussion and refinement of the codebook until consensus was reached.

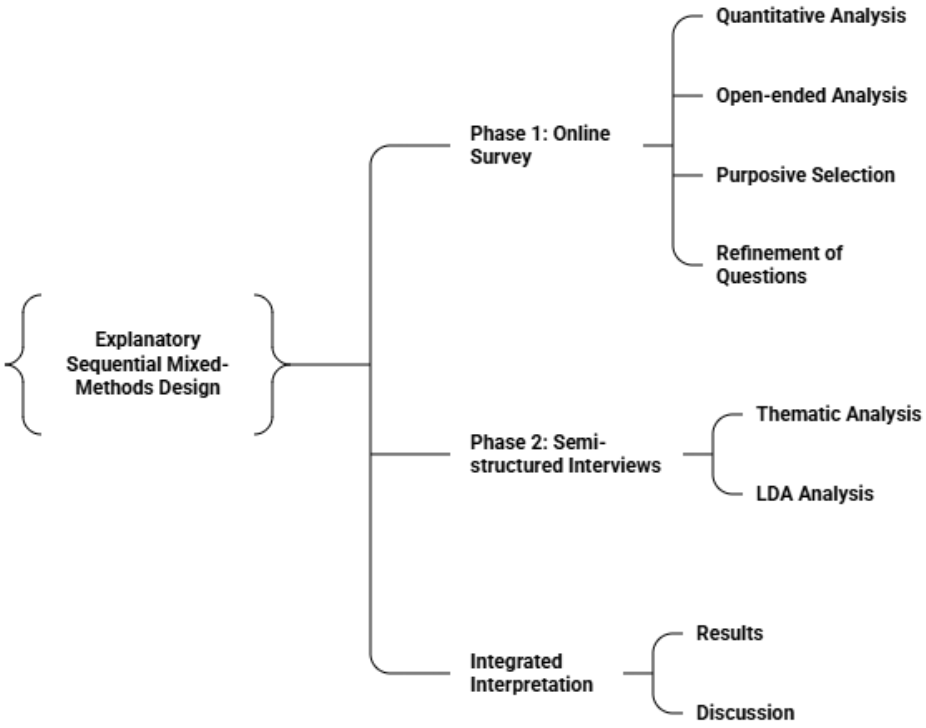

Figure 1. Explanatory Sequential Mixed-Methods Design and Integration

Qualitative data were analysed using thematic analysis following the stages of Miles, Huberman, and Saldaña (2014): data reduction, data display, and conclusion drawing. Themes were identified from respondents' written answers and post-survey interview transcripts through a layered manual coding process (open, axial, and selective coding). To complement this manual analysis, Latent Dirichlet Allocation (LDA) topic modelling was applied to the interview transcripts (Jelodar et al., 2019; Zhai et al., 2021). Several candidate models with different numbers of topics (e.g., k = 3–7) were compared using topic coherence scores and substantive interpretability, and a four-topic solution was retained because it showed the best balance between coherence and thematic clarity. Triangulation between LDA output and manual coding was conducted by having two researchers independently code the data, compare their codes with the LDA-derived topics, and discuss discrepancies. Intercoder reliability was assessed using Cohen's kappa, and disagreements were resolved through discussion and refinement of the codebook until consensus was reached.

This study has several methodological limitations. The use of convenience sampling and voluntary online participation limits the representativeness and generalisability of the findings. The self-report survey and interview data may also be subject to social desirability and recall bias, and the newly developed questionnaire has only been tested in one sample. In addition, the cross-sectional design captures educators' perceptions at a single point in time, so changes in attitudes as AI and institutional policies evolve could not be examined.

RESULTS AND DISCUSSION

RESULTS

How Do Educators Define AI?

A total of 111 participants provided definitions of artificial intelligence (AI). The main themes that emerge can be seen in Table 5. The first three themes are in line with the definition of AI according to Ng et al. (2021) presented in the introduction, while the fourth theme emphasizes the practical purpose of using AI, namely, to increase the effectiveness and efficiency of teachers' tasks.

Table 5. LDA analysis of Artificial Intelligence (AI) definitions by participants

Theme	Description	Percentage (%)	Example Statement
AI as an intelligent system	Machines/algorithms that mimic human capabilities	35.1	"A technological entity that has human-like skills."
AI as a learner	Systems that can learn from data and experience	28.4	"A program that can recognize patterns and improve their function."
AI as a predictive tool	Technology that makes predictions from big data	22.9	"A system that processes complex data to generate predictions."
AI as an effectiveness enhancer	Tools to speed up and simplify tasks	13.6	"AI is used to make teachers' jobs easier to be more efficient."

While most definitions cover only one or two aspects (e.g., *"smart technology with human-like skills"),* there are also more comprehensive definitions. Some examples of participant statements are as follows:

> "Computer programs that can-do limited reasoning, recognize patterns, make predictions, and gradually learn from complex data sets to improve their performance."
> "AI is a self-learning system, but it still requires continuous human input, and based on that, it continues to learn and refine itself. AI may be superior to the human brain in terms of knowledge, but inferior in emotional intelligence."
> "AI is a system that can fully see large amounts of data and make accurate predictions and inferences to be used in learning development."

In addition to this advanced definition, some participants define AI simply as *"software"* or *"smart robots"*. Meanwhile, 13.6% of respondents were unable to define at all. This shows that although AI is becoming increasingly popular in educational discourse, educators' understanding of this concept is still varied and uneven.

Do Educators Feel Comfortable Using Technology for Education?

In this study, participants were asked to assess technology-based learning practices under the categories *of "Technology-Based Instructional Planning"* and *"Technology in Assessment"* using a 6-point Likert scale. Analysis of exploratory factors using *the maximum likelihood method* showed that the data structure was most accurately described by one dominant factor with an eigenvalue above 1 (3.02), explaining 49.8% of the data variance. The two-factor model (eigenvalue 0.91) did add 15.1% variance, but it resulted in *strong cross-loading,* so it was decided to use a single-factor model.

The reliability value of the instrument shows Cronbach's $\alpha = 0.83$, which signifies excellent internal consistency. The participants' score range was 2.67–6.00, with a mean of $M = 5.04$ and $SD = 0.81$. The score distribution showed *negative skewness* (skewness = -0.98, SE = 0.22, z = -4.45) and slightly leptokurtic (kurtosis = 0.84, SE = 0.43, z = 1.95), with the percentile range of 25–75 being at 4.68–5.71. This indicates that the majority of teachers are in the comfortable to very comfortable category of using technology in learning.

Table 6. Results of analysis of factors and instrument reliability

Statement item	Communality	Factor loading
Technology-driven instructional planning	0.62	0.79
Digital technology-based assessment	0.58	0.76
Utilization of LMS for learning	0.67	0.82
Utilization of mobile devices (smartphones)	0.60	0.77
Familiarity with the use of AI	0.64	0.81

Cronbach's α = 0.83; Varians explained = 49.8%

In addition to quantitative data, qualitative findings show that most teachers use computers, Learning Management Systems (LMS), and smartphones as integral parts of their learning practices. Only a small percentage (±2%) of respondents stated that they do not use technology at all.

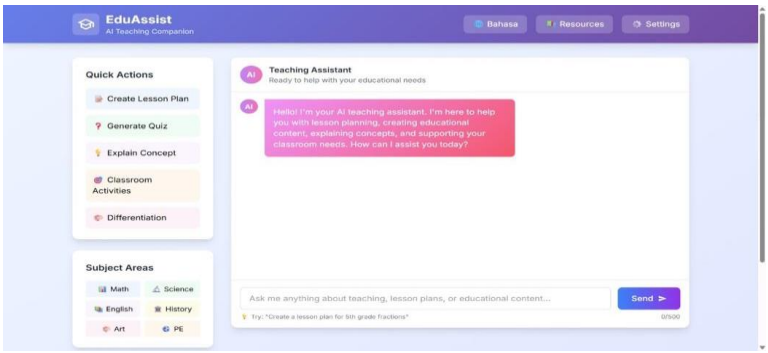

Figure 2. Edu Assist Displays as an Example of the Use of AI-based Technology in Supporting Teachers

As a concrete example, Figure 2 shows the EduAssist interface, an artificial intelligence-based application that allows teachers to create lesson plans, create quizzes, and explain material. This view shows how AI can function as a *teaching assistant* that supports the learning planning process.

Furthermore, the use of AI technology in teacher training is shown through the South Sumatra BGTK Learner platform (see Figure 3). This application provides a chatbot service that helps teachers understand training modules, discuss class problems, and obtain learning strategies that are appropriate to field conditions.

Focusing on the use of AI, it was found that 41.2% of teachers have used AI-based applications in learning practices, 42.7% have not used them, and 16.1% do not know for sure. The Kruskal-Wallis test showed that the use of AI was positively correlated with technology-based learning practices, $\chi 2(2) = 19.87$, $p < 0.001$. Teachers who use AI report higher technology-based learning practices (Mdn = 5.51) than those who do not (Mdn = 4.84), $p < 0.001$, while the group that does not know is in the middle position (Mdn = 5.12).

Open-answer analysis also shows the most used app is Grammarly, followed by Google Translate, Google Voice Recognition, and chatbots like Alexa. Some representative responses are:

"I use Grammarly to help students write English texts and Alexa to practice listening skills."

"Students use Google Translate and Google Classroom to improve their writing, while I use voice recognition for speaking exercises."

"I'm trying to implement an AI-based dialogue system as an out-of-class conversation exercise. Grammarly is an app that I highly recommend."

Overall, these results show that teachers feel comfortable using technology, and some have even started to use AI in learning. These findings confirm the practical readiness to adopt digital innovations in improving the quality of education.

Educators' Attitudes to the Advantages and Disadvantages of AI

The *Latent Dirichlet Allocation* (LDA) analysis of participants' explanations of the use of AI (see Table 7) revealed four main themes that demonstrate the advantages of AI in the context of education, namely: (1) assistance in writing and editing, (2) data collection and monitoring of student performance, (3) creating interactive and engaging learning, and (4) ethical considerations of using AI.

Table 7. LDA's analysis of how AI influences teaching practices (n = 79)

Main theme	Description	Frequency (%)
Writing & editing help	AI helps teachers and students in grammar, text correction, and overall text quality improvement	32.5
Student performance data collection	AI is used to monitor learning outcomes, identify difficulties, and evaluate students' progress	26.1
Interactive & engaging learning	AI creates varied learning activities based on quizzes, simulations, conversations, and digital media	21.7
Ethical considerations & prudence	Teachers emphasize the importance of limiting dependency on AI and maintaining academic integrity	19.7

Some representative quotes from respondents reflect the above findings:

"AI helped me consider innovative ways to improve students' writing skills."

"Data from apps like Quizizz makes it easier for me to know which areas are difficult for students and can be followed up on immediately in class."

"As a teacher, I also sometimes follow AI recommendations. This changed my teaching behavior, and I needed to test whether my didactic decisions remained the same without the AI's suggestions."

"I am aware that students can use AI, such as Google Translate, to do assignments. It makes me worry about plagiarism and fairness."

These quotes show that educators view AI not only as a technical tool but also as a factor that has the potential to change students' teaching patterns and learning behaviors. Furthermore, descriptive statistics related to ethical attitudes towards the use of AI in the classroom are shown in Table 8.

Table 8. Descriptive statistics and correlation of ethical attitudes towards AI in education

Ethical indicator	M	SD	Correlation with general attitude
General attitude (neutral)	3.52	0.88	–
Plagiarism	3.41	0.95	0.52**
Injustice	3.21	0.96	0.21*

Note: $p < .01$; $p < .05$.

The distribution of the data shows an average near the midpoint of the scale (neutral) for general attitudes and plagiarism, and slightly below the middle for the issue of injustice. The paired t-test showed that the issue of injustice was considered less negative than plagiarism, $t(131) = 2.46$, $p = .015$, $d = 0.21$ (small effect).

The results of the interviews also show that ethical issues are often mentioned, but justice is rarely the main concern. The analysis of word frequency in interview answers is shown in Table 9.

Table 9. Analysis of the frequency of participants' interview responses

Keyword	Frequency
Machine translation	21
Plagiarisme	18
Ethics of use AI	14
Learning independence	11

As a complement, the visualization of the results of frequency analysis can be seen in Figure 3, which shows an example of the use of learning strategy features in the *South Sumatra BGTK Learner* application.

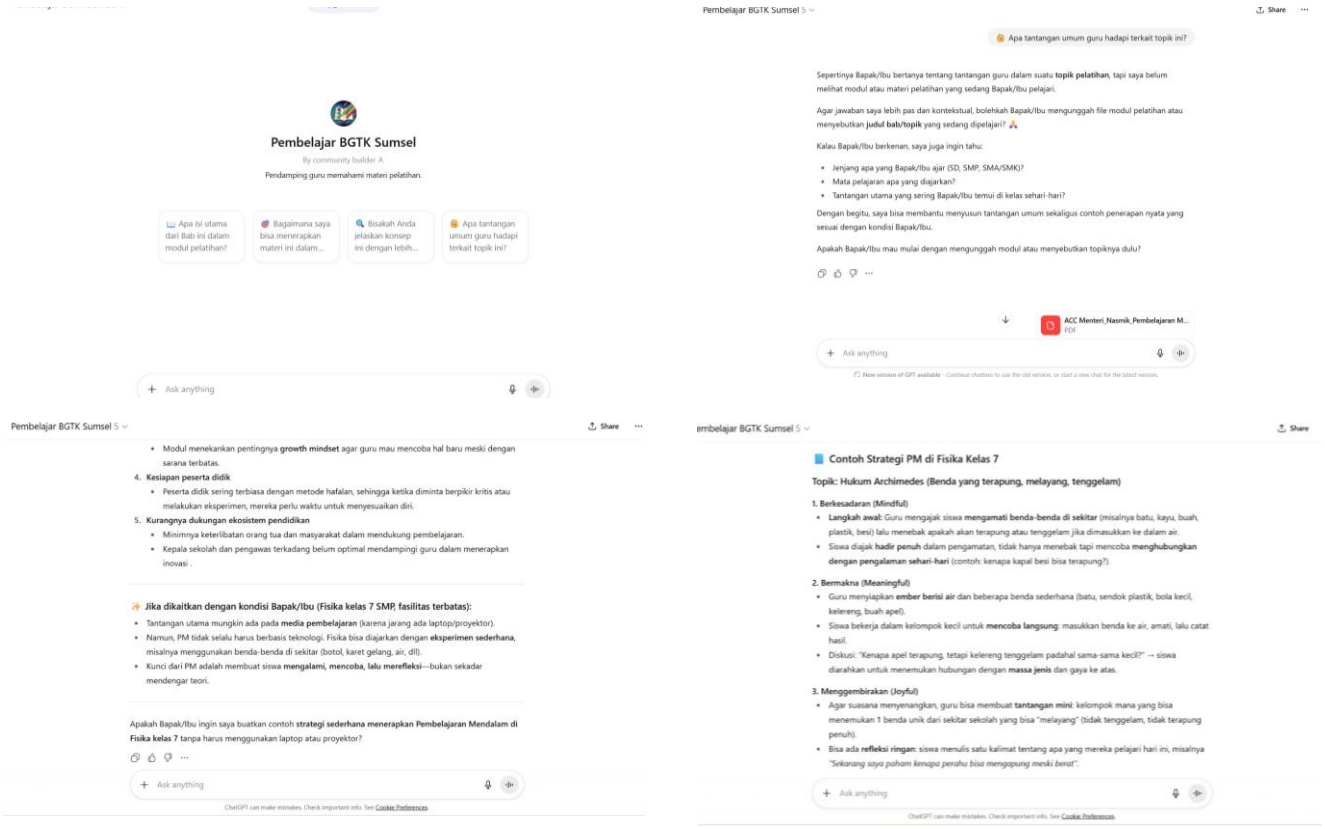

Figure 3. Visualization of the Use of AI in Learning Strategies in the South Sumatra BGTK Learner Application

In addition, LDA's analysis of all interview responses resulted in four topics that corroborate the survey findings, as shown in Table 10.

Table 10. LDA analysis of post-survey interview results

Topic	Interpretation
Topic 1	AI as a language writing and proofreading tool
Topic 2	Utilization of AI in large classes for feedback personalization
Topic 3	Controversy of automatic translation apps in student assignments
Topic 4	AI as a complement to teachers' work, not a threat

To provide more in-depth insights, here are some interview quotes that fit the topics above:
"I think AI will be used more and more, especially in large classrooms where teachers alone are unlikely to provide personal feedback quickly." (Topic 2)
"Translation apps are helpful, but if students use them to write three full pages, it's like using steroids to hit a home run." (Topic 3)
"For me, AI is not a threat, but a complement. With the help of AI, I can focus more on designing the curriculum rather than just proofreading thousands of students' writing." (Topic 4)

Overall, these findings suggest that educators put AI in an ambivalent position: as a pedagogical partner that is very helpful, but at the same time poses ethical challenges that need to be managed.

To What Extent Do Educators Feel Prepared and Supported?

Data analysis shows that most educators have a moderate level of readiness in using technology and AI in the classroom, but institutional support is still limited. Only 10.6% of respondents said that there is a clear institutional vision related to learning technology, while 61.4% stated that there is no vision or they do

not know its existence. A lower condition was found in specific guidelines for the use of AI, where only 8.3% of respondents reported the existence of written rules.

Table 11. Descriptive statistics of educator readiness and support in the use of technology and AI

Indicator	Average (M)	SD	Information
Personal readiness using AI	3.14	1.02	Quite ready, even though there are variations between teachers
Institutional support (vision)	2.87	0.95	Low, majority unclear
AI-specific guidelines	2.61	1.10	Low, minimal written rules
Sense is supported in innovation	3.42	0.88	Most feel quite supported

The score distribution shows that the majority of educators feel more prepared individually than institutionally. The Spearman correlation test showed that personal readiness was positively associated with confidence in using technology ($\rho = 0.41$, $p < .01$), while institutional support had no significant correlation with readiness levels. This indicates a gap between individual motivation and structural policies.

Most respondents (55.3%) said they felt sufficiently supported, even 16.7% felt valued when adopting innovative strategies. However, 22% only felt tolerant without any real encouragement, and 6.1% stated that they felt hampered.

Some representative quotes from interviews support these findings:

"If there are no official rules about AI, at least the leaders give space to try new things in the classroom."

"I need written guidance, especially regarding the ethics of using ChatGPT. If you only rely on the teacher's initiative, the results can be different."

"Institutions support in terms of motivation, but support in the form of training or workshops is still very lacking."

This picture confirms that although educators feel relatively personally prepared, institutional support has not been well structured. The lack of vision, guidelines, and formal training makes teachers' readiness not always maximized in daily learning practices.

The Relationship Between Aspects of Educator Perception

At the end of the survey, educators were asked to assess the relationship between aspects of their perceptions of the use of technology and artificial intelligence (AI) in education, such as personal readiness, institutional support, familiarity, ethical attitudes, and optimism about the future of AI. Spearman's correlation analysis is used to test the relationship between these aspects.

Table 12. Spearman's correlation between aspects of educators' perceptions of AI

Perception Aspect	Readiness	Institutional Support	Familiarities AI	Ethical Attitude	Optimism
Personal readiness	1	0.18	0.34	0.09	0.41
Institutional support		1	0.12	0.15	0.08
Familiarity of AI technology			1	0.19	0.29
Ethical attitudes (plagiarism, fairness, etc.)				1	–0.22
Optimism about AI technology and the future					1

Note: *p < .01; p < .05.*

The correlation results showed that personal readiness had a positive relationship with AI familiarity ($\rho = 0.34$, $p < .01$) and optimism about the future of technology ($\rho = 0.41$, $p < .01$). AI familiarity also correlates with optimism ($\rho = 0.29$, $p < .05$). In contrast, more critical ethical attitudes were negatively associated with optimism ($\rho = –0.22$, $p < .05$). Institutional support, while theoretically important, does not show a significant relationship with other aspects.

Overall, this pattern suggests that teachers who have a high level of readiness and greater familiarity with AI tend to be more optimistic about the future of its use in education. However, ethical concerns are still a balancing factor that can reduce optimism. This confirms that, in order to positively increase the acceptance of AI, in addition to increasing personal readiness, it is also important to strengthen a clear ethical framework in educational practice.

DISCUSSION

The findings of this study are in line with previous studies that generally show that educators have a positive view of AI and its potential to support the teaching and learning process (Jeon & Lee, 2023; Kohnke et al., 2023; Mohamed, 2024). Nevertheless, previous research has rarely addressed how educators define AI itself. The results of this study show that many teachers have a comprehensive definition of AI, including elements such as intelligent agents, learning algorithms, data analysis, as well as the main goal to improve task effectiveness. This study explores educators' perceptions of the use of Artificial Intelligence (AI) and interactive digital resources in educationHowever, some respondents were also unable to provide a clear definition, which indicates that there is still an AI literacy gap among educators. This shows the need for more systematic conceptual training in order to create a shared understanding of AI in the context of education.

In contrast to the diversity of definitions of AI, the results of the study show that educators feel quite confident in the use of educational technology in general. The average score indicates that they are moderately to high in their comfort with using technology-based learning practices. The technologies used include computers, Learning Management Systems (LMS), and smartphone-based applications. Furthermore, educators also identified a number of key advantages of AI, such as aiding writing, providing student learning data, and creating interactive and engaging learning experiences. The results of the interviews reinforce these findings, where teachers expect the use of AI to continue to grow, particularly to help write, translate, and create computer-based forms of learning. This is in line with a global trend that shows that AI is increasingly inevitable in the world of education and is seen as a strategic partner for teachers (Huang et al., 2023).

As explained in the introduction, stakeholder perspectives are critical for AI adoption to be socially responsible and pedagogically meaningful (X. Chen et al., 2020; Dekker & Meeter, 2022). However, while educators are optimistic, they also reveal that institutional support is still limited. The majority of respondents stated that they have not received formal training or clear guidance from their institutions regarding the use of AI, although they feel informally encouraged to use digital technology. This gap between individual readiness and organizational support has also been seen in previous studies (Diery et al., 2020; Rolston, 2009). In this study, most educators expressed a desire to understand the ethical, legal, and social issues of the use of AI. However, this attention has not been integrated into institutional policies or teaching standards. This underscores the importance of building a dialogue between AI developers, policymakers, and educators.

Ethical issues emerged as one of the most important themes. Teachers acknowledge that AI helps the learning process, but they also pay attention to the issues of plagiarism, fairness, and reduced student independence. These findings are in line with Mohammadkarimi's (2023) research has found that AI makes academic dishonesty practices more accessible. However, in contrast to the study, the results of this study show that many teachers are starting to take a more pragmatic position: it is no longer a question of *whether* students will use AI, but *rather how* its use can be directed to remain pedagogically useful. This shows a shift in teachers' attitudes that are increasingly realistic towards ethical challenges.

The use of Artificial Intelligence (AI) in education not only has an impact on students but also contributes significantly to easing the workload of teachers. Studies have shown that AI is able to automate administrative tasks, support learning planning, and help personalize teaching so that teachers have more time to focus on the curriculum and student needs. Duan and Zhao (2024) found that AI-based applications can reduce the symptoms of *digital burnout* while increasing the professional autonomy of teachers, while Chen (2024) asserts that the integration of GPT technology can reduce work stress and the risk of burnout. In line with that, Tan (2025) emphasizes the role of AI in question generation, while the study Further research by Machado (2025) testing workload perception in automation scenarios (manual vs semi-automatic vs automated) also showed that teachers reported reduced time load and frustration in a semi-automated environment compared to a fully manual environment. Thus, AI's support for teacher well-being not only helps to reduce the risk of stress and burnout but also indirectly supports students' academic success.

Despite these contributions, the findings should be interpreted in light of several methodological limitations. The use of convenience sampling and voluntary online participation restricts the representativeness of the sample and may introduce self-selection bias. In addition, the self-report nature of the survey and interviews is vulnerable to social desirability and recall bias, and the newly developed questionnaire has only been tested in a single context. Finally, the cross-sectional design provides a snapshot of educators' perceptions at one point in time, so causal inferences and changes in attitudes as AI tools and institutional policies evolve cannot be established.

Overall, the results of this study show that educators' perceptions are evolving along with the development of AI technology. Teachers see AI as a pedagogical partner that offers great opportunities, while posing ethical challenges that must be managed. However, the absence of a clear institutional framework makes them feel unprepared. Therefore, this study emphasizes the importance of improving AI literacy for educators, starting with practical training on AI-based digital assistants, learning analytics, and classroom applications. In addition, the results of this study also provide encouragement for the involvement of educators in the development of AI and in the formulation of educational policies oriented towards the responsible and effective use of technology.

CONCLUSION

This study shows that educators generally hold positive yet nuanced views of AI in education: many are able to define AI in relatively comprehensive terms and feel comfortable using technology in their teaching, perceive clear pedagogical and workload-related benefits, but at the same time express ethical concerns and experience limited institutional support. However, the findings must be interpreted in light of several methodological limitations, including the use of convenience sampling and voluntary online participation, the reliance on self-report data, the use of a newly developed (and context-specific) questionnaire, and the cross-sectional design. These limitations directly point to future research opportunities: subsequent studies should employ more representative sampling strategies, validate and refine the measurement instruments across different regions and disciplines, and use longitudinal or intervention designs to examine how training programmes, institutional policies, and exposure to various AI tools shape educators' attitudes and practices over time.

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