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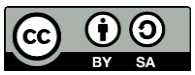

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Exploring Indonesian EFL Teachers' Agency and Self-Efficacy in Using Artificial Intelligence Tools

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Abstract

Despite numerous studies on teacher's agency and self-efficacy, little attention has been given to examining how teachers' agency manifests in the use of artificial intelligence and how it influences teachers' self-efficacy. Teachers as active agents are demanded to effectively and independently exercise their digital agency in teaching. In essence, teacher's agency allows them to make informed choices about using artificial intelligence to promote their teaching, which might influence their perceptions of their self-efficacy. Thus, this study aims to fill the gap by examining how EFL teachers' agency manifests in the utilization of AI tools and how they perceive their self-efficacy. Employing a qualitative study, this research employed open-ended questionnaires and semi-structured interviews to gather the data. Five EFL teachers who have used artificial intelligence in their teaching participated in this study. To analyze the data, the researcher employed selective coding. The data revealed two teacher agency drove three participants to use artificial intelligence in three parts namely lesson planning, implementation, and assessment, and the other two participants used it for lesson planning and assessment. Furthermore, this study found that the five participants perceived high self-efficacy towards their use of artificial intelligence. Thus, schools and teacher educational programs should provide targeted professional development programs that emphasize the importance of teacher agency. In particular, training should focus on how teachers can utilize artificial intelligence tools to enhance their pedagogical practices that contribute to building high self-efficacy.

Keywords: *EFL teacher, teacher agency, teachers' self-efficacy, artificial intelligence*

Introduction

Artificial intelligence has significantly influenced how teachers construct their professional identity. Integration of artificial intelligence is no longer only an add-on; however, it is now acknowledged as a powerful tool and a key aspect that provides numerous opportunities for improving English language teaching and learning (Xue & Wang, 2022; Sun et al., 2020; Campoverde-Quezada & Valdiviezo-Ramírez, 2024). Beijaard et al. (2000) mentioned that teacher professional identity is influenced by their skills, values, and beliefs about teaching in understanding the meanings of "who one is" as a professional. In particular, Beijaard et al. (2000) underscore the four essential features of a teacher's professional identity. First, teacher's professional identity is a continuous process of understanding and interpreting experiences. Secondly, it encompasses both the individual and the surrounding context. Furthermore, it also comprises sub-identities that are more or less in harmony. Lastly, it requires teachers to actively participate in this process. Thus, teacher agency plays a significant role in helping teachers improve their professional identity since it enables them to respond critically to challenging situations (Ryan & Deci, 2000; Ryan et al., 2008) and to take action and initiate changes in their practice (Ghamoushi et al., 2022; Leijen et al., 2021).

In this sophisticated era, teachers are demanded to be ready and independently exercise their expertise in teaching (Hemi et al., 2021) to adapt to the influence of technology in the teaching-learning context. Granziera et al. (2019) mentioned that teacher should have the capacity to adapt their thoughts, emotions, and actions to effectively respond to changing learning circumstances. In essence, teacher agency that refers to their ability to make an informed choice about their teaching are crucial to conduct the teaching learning activities (Kusters et al., 2023; Sfard & Prusak, 2005; Bandura, 1999; Hemi et al., 2021, Clavert, 2016). In this case, teachers' digital competence becomes more obvious for teachers to possess to foster their professional identity (Lund & Agard, 2020; Brevik et al., 2019; Liu & Li, 2022; Ally, 2019). Moreover, it implies that teachers as active agents need to understand the technical aspects of digital technology and possess the adaptive ability to pedagogically utilize it in teaching (Korhonen et al., 2006). In essence, their acceptance and disposition could be a pointer to their interests in technology, which impacts their teaching practices (Nikolopoulou et al., 2021). Moreover, with the rise of artificial intelligence, it becomes more obvious for teachers to have digital competencies to effectively integrate artificial intelligence as part of their proficiency (Chiu & Chai, 2020; Ayanwale et al., 2022) although some studies still

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found the absence of the use of artificial intelligence among EFL teachers (Chounta et al., 2022; Atlas, 2023; Gianni, 2023). This proficiency includes cultural competence and ethical considerations to ensure the effective use of artificial intelligence which strives to balance between technology and the human element in education (Sanusi & Olaleye, 2022; Baskara, 2023).

Since artificial intelligence within the educational context is rapidly growing, teacher's agency can be examined through how teachers integrate it as a tool to support their practice. Celik et al. (2022), through reviewing empirical research on how teachers interacted with artificial intelligence, explained that artificial intelligence provides teachers valuable opportunities in planning, implementation, and assessment in their teaching. Planning refers to teachers' utilization of artificial intelligence before conducting the teaching practice. In particular, this utilization involves finding ideas for teaching activities, classifying learning material, and ordering the learning activities. Implementation refers to how artificial intelligence promotes enjoyable learning as it increases teacher-student interaction by capturing and analyzing data from productive moments, tracking students' progress, and providing feedback. Besides, assessment refers to how teachers use artificial intelligence to help them check students' written work authenticity and create objective scoring rubrics. Within this context, Pelham et al. (2020) found that artificial intelligence fosters the planning phase of teaching as it helps teachers get students' background information. Similarly, Van Den Berg and Du Plessis (2023) found that ChatGPT can provide specific materials in lesson planning. In the implementation phase, some studies revealed that teachers at different level of teaching used artificial intelligence to improve students' speaking performance (Junaidi, 2020; Makhlouf, 2021), listening skills (Ghoneim & Elghotmy, 2021; Suryana, et al., 2020), critical thinking skills (Baskara, 2023) and writing skills (Mahfud, 2023; Nguyen Thi Tra My, & Trinh Thi Ha, 2024; Lu, 2019). In the assessment phase, some studies reported that teachers used an automatic correction assignment system (Xue & Wang, 2022; Bekou et al., 2024; De Haas et al., 2020; Srinivasa et al., 2022; Xu et al., 2022; Porter & Grippa, 2020; Huang et al. 2011) and provide essay scoring (Kersting et al. 2014).

Since the rise of artificial intelligence explicitly demands teachers as active agents to possess a particular agency, it implicitly influences their belief in their own ability to perform a particular action (Utami & Kuswandono, 2023; Zhang et al., 2021). In line with Bandura (1997), he explained that self-efficacy refers to one's confidence about his or her ability that may impact his or her thoughts, feelings, motivation, and actions. Accordingly, it is believed that teachers with high self-efficacy have more encouragement. Meanwhile, teachers with low self-efficacy might struggle with the decision-making process. Moreover, Bandura (1997) underscores that mastery experience greatly influences one's self-efficacy. In this case, mastery experiences culminate in the knowledge and skills acquired in prior interactions with the subject. Individuals who have previously accomplished a task successfully are more likely to exhibit self-efficacy when confronted with the same subject matter in the future. Besides that, Sumandal (2023) mentioned that teacher's self-efficacy is affected by their capabilities to positively impact students' learning and outcomes. Within this context, Pelaez et al. (2022) argued that technology integration positively fosters teacher's self-efficacy.

Since artificial intelligence has become more obvious within the educational context, it has drawn great research attention. Many studies have explored teachers' understanding of artificial intelligence, its implication for teaching and learning activities (e.g. Velander et al., 2023; Kim & Kwon, 2023), and teachers' perception of artificial intelligence as a tool to support their teaching practice (e.g. Counta et al., 2021; Davis, 2024). With regard to teacher's self-efficacy, limited research has reported how the integration of artificial intelligence influences teachers' self-efficacy. In the global context, Lu et al. (2024) through experimental studies among Chinese preservice teachers revealed that the experimental group perceived higher self-efficacy as they used generative AI for teachers' professional development. Besides that, Sumandal (2023), who conducted quantitative research among Philippines teachers, found that the teachers have a high self-efficacy. Furthermore, Chou et al. (2022) found that there were differences in the perceived efficacy of AI-based teaching applications among teachers in Taiwan regarding several variables.

The investigation of the influence of artificial intelligence on EFL teachers' agency and efficacy in the Indonesian context remains inadequately explored. To fill the gap, this research aims to delve further into the extent to which EFL teachers manifest their agency in using artificial intelligence in teaching and how they perceive their self-efficacy towards the use of artificial intelligence. Thus, this study investigates these two research questions:

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1. How do EFL teachers manifest their agency in the utilization of artificial intelligence in teaching?
2. How do EFL teachers perceive the impacts of the utilization of artificial intelligence on self-efficacy?

Method

The research was undertaken as a qualitative study for it focuses on certain events that happened, and the researcher tried to explain and understand them using some theories. By employing a narrative inquiry method, which focuses on the narratives of experiences, this study aimed to find out how Indonesian EFL teachers manifest their digital teacher agency through the utilization of AI tools in teaching practice and their perceived professional identity.

To conduct the study, the researcher utilized purposive sampling as there was a major criterion applied. Purposive sampling was used to choose the research participants based on their experience and knowledge in a certain context (Creswell, 2014). This study examined 5 EFL teachers who have integrated artificial intelligence tools to promote their role as EFL teachers. A preliminary survey was conducted to ascertain whether the participants met the criteria for the current study as well as the trustworthiness of the study. Particularly, the initial survey was employed to determine whether participants utilize artificial intelligence in teaching. Then, selected participants were given a consent form to determine their willingness to contribute to completing the questionnaire and agreed to be interviewed in this study. The participants were coded into P1, P2, P3, P4, P5.

The data has been collected using a document. The document in this research was in the form of a transcript of the movie. The transcript was the tool for the researchers to analyze the movie deeply.

Table 1: *Participants' Demography*

Participants	Gender	Teaching Level	Years of Teaching
P1	Male	English lecturer	3
P2	Male	Junior high school	3
P3	Female	Junior high school	5
P4	Female	Senior high school	6
P5	Male	Senior high school	11

To collect the data, the researcher employed an open-ended questionnaire and semi-structured interview. In particular, to find out how the teacher's agency manifests in the use of artificial intelligence among the EFL teachers, the researcher designed the questionnaire and the interview questions by adapting a framework by Celik et al. (2022) which was originally drawn from Bandura (1999). In addition, to find out how teachers perceive their self-efficacy regarding their use of artificial intelligence, the researcher employed the framework of teacher self-efficacy by Beijaard (1997). The questionnaire and the interview guideline similarly consist of 7 items that focus on finding teachers' use of artificial intelligence and their perceived self-efficacy as presented in Table 2.

Table 1: *Open-ended Questionnaire and Interview*

Aspects	Items
Teacher's Agency (Bandura, 1999) AI Use in Teaching; Planning, Implementation, Evaluation (Celik et al., 2022).	1,2,3,4,5,6
Teacher's Self-efficacy (Beijaard, 1997)	7

The researchers first distributed the open-ended questionnaire. Then, a semi-structured interview was conducted to complete the richness of the data and triangulate the data information from the participants that might not have been captured in the open-ended questionnaire. The data collected from the questionnaire and semi-structured interview was processed by using selective coding. It aims to generate categories or themes for analysis and interpret the data. According to Corbin and Strauss (1990), selective coding involves the reorganization of all categories around a specific core category. The core category is employed to depict the primary phenomenon of the research. The categories or themes refer to the use of artificial intelligence by the teachers and the perception of their self-efficacy as presented in Table 3.

Table 3: *Example of Coding*

Participants	Teacher's Use of AI Tools			Teacher's Self-Efficacy
P1	Utterance: I usually	Utterance: I instruct my	Utterance: I use quiz	Utterance: I think

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	use artificial intelligence to help me find some ideas for teaching-learning activities	students to use artificial intelligence such as Chatgpt or Grammarly to brainstorm ideas or check their sentences. It helps me explain what should be included in their content.	analysis provided by Kahoot to help me analyze students' comprehension.	artificial intelligence makes me feel more self-efficacious since I can provide more examples with AI.
	Planning	Implementation	Assessment	

Results

In this section, the researcher presents how teacher agency manifests in the use of artificial intelligence by the teachers and how they perceive their self-efficacy in the influence of their use of artificial intelligence. The participants were initially asked whether they used artificial intelligence to promote their role as teachers. The results revealed that the all of the participants used artificial intelligence tools and found that they offer invaluable assistance. Furthermore, they were asked how their agency manifests in the use of artificial intelligence and to explain their perception of their self-efficacy.

Teacher Agency Manifestation on the Use of Artificial Intelligence

To figure out how teacher agency manifested in the use of artificial intelligence tools among the participants, they were asked to recall their experience in using artificial intelligence in three aspects of teaching, including planning, implementation, and assessment. In particular, participants mentioned what artificial intelligence tools they used and how they used them in their teaching. From the open-ended questionnaire the participants mentioned several artificial

intelligences that they used and how they used them to promote their role as teachers as presented in Table 4.

Table 4: *EFL Teachers' Agency on the Use of AI-Tools*

Participants	Planning	Implementation	Assessment	AI Tools
P1	finding ideas for classroom activities, summarizing teaching material, making questions	-	Checking plagiarism, checking students' work	ChatGPT, Copilot, Chatpdf, Concencus, Magicschool, Turnitin, Grammarly
P2	finding ideas for classroom activities, making questions	-	Analyzing students' work	Quizziz Question Generator, ChatGPT, Copilot, Quizizz Quiz Analysis
P3	finding ideas for classroom activities, making questions	-	Analyzing students' work	Canva, ChatGPT, Quizizz, Kahoot, Grammarly
P4	finding ideas for classroom activities, making questions/ instruction	finding ideas, writing practice, speaking practice	checking students' work, Checking plagiarism,	ChatGPT, Copilot, Canva, Gilglish, Turnitin, Grammarly
P5	creating additional	writing practice	-	ChatGPT

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	material, creating rubric	a

Table 4 shows how teacher agency drove EFL teachers to use artificial intelligence to foster their role as teachers. Similarly, the interview result emphasized the artificial intelligence tools used by the participants. In the lesson planning, P1 emphasized that artificial intelligence provides valuable help in planning his teaching.

> In the lesson planning, I choose the topic or the learning goals by myself. Then, I usually use artificial intelligence to help me find ideas for class activities based on the prompt that I write. I usually use ChatGPT or Copilot to get some examples of activities that are related to the learning goals or the material that I want my students to learn such as the warm-up activities and group work activities. Besides, I also usually use ChatPDF to help me summarize the reading material that I will use for the class material. Since I teach a Research Proposal class in which there are several books that I need to read, I find that artificial intelligence really helps me find ideas and leads me to be more productive. (P1)

From the excerpt above, P1 explained how artificial intelligence was used to help him in lesson planning. P1 manifested his agency as a teacher by deciding to use artificial intelligence to get some examples of class activities and prepare the material that he would use for the class. P1 acknowledged that artificial intelligence significantly helped him as he could find some options and be more productive. However, teacher agency manifested in P1 was also shown by his consideration of the response that was provided by artificial intelligence. In this case, he analyzed and chose the appropriate activities for his class. Similarly, P2, P3, and P4 stated that they used artificial intelligence to help them in lesson planning, which includes preparing questions using question generator and generate more examples that they could present and explain during the classroom activities.

On the other hand, how teacher agency manifested in the teaching-learning activities among participants was different from how it was in the planning section. Among the five participants, P4 and P5 were the only participants who used

artificial intelligence during the teaching-learning activity in the classroom. Their agency drove them to utilize some artificial intelligence to help students easily understand the concept of what they were learning.

> P4: Since writing is one of the concerns for the students to master in grade 11th, I allow my students to use ChatGPT to help them brainstorm ideas. I believe that ChatGPT can provide students with more examples that allow them to get the idea. In addition, I also encourage students to compare their own ideas with what ChatGPT provides for them. I believe that it allows students to think more critically. Moreover, I used Gilgish for the students to practice their speaking. Not only does it help students practice their pronunciation, but it can also foster students to communicate effectively through the questions they give while doing the conversation.

As a senior high school teacher, P4 and P5 emphasized that writing and speaking become more significant for the students to master. Drawing upon the students' needs, P4 and P5 believed that artificial intelligence also fosters their teaching. In this case, it was apparent that their teacher agency drove them to utilize artificial intelligence as a tool in their classroom activities to deliver material and provide practice for the students. Meanwhile, the other three participants generally found that integrating artificial intelligence during teaching-learning activities is still not obvious and necessary.

In addition to the planning and the implementation, the teacher agency drove P1, P2, P3, and P4 to make informed choices on utilizing artificial intelligence tools for assessing students' progress. P1 and P4 similarly utilize ChatGPT and Grammarly to provide feedback on students' writing. Besides that, P2 and P3 utilize quiz analysis reports offered by Quizzes and Kahoot to automatically find students' difficulties on certain topics. On the other side, P5 mentioned that he had not used any artificial intelligence for the assessment aspect.

Teachers' Perception of Self-Efficacy in The Influence of AI Tools

To figure out how the participants perceived self-efficacy regarding their use of artificial intelligence, the participants were asked to describe how the use of artificial intelligence influenced their beliefs about their ability. In the open-ended questionnaire, the participants mentioned that artificial intelligence fosters their self-efficacy. The overview of the result was presented in Table 5.

Table 5: *EFL Teachers' Agency on the Use of AI-Tools*

Participants	Responses

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P1	perceived high self-efficacy, especially discovered professional growth, automation of administrative tasks
P2	found enhancement of sense of self-efficacy, improved capability as a teacher
P3	had high self-confident, became more creative, enhanced students' outcome
P4	possessed a strong belief in her ability, gained enhancement of students' engagement, uncovered opportunities for professional development
P5	gained high sense of confidence, adaptive to technology, experienced improved classroom engagement

In addition, the results of the semi-structured interview further elaborated their perception on their self-efficacy. Similarly, the five participants emphasized that artificial intelligence significantly influenced how they become positively perceive their capability as teachers.

> P1: Artificial intelligence helps me greatly with my English lecturer jobs. With the help of artificial intelligence, I can summarize learning material and create lesson plans with various interesting activities. In addition to that, I have the ability to create thoughtfully designed worksheets that are tailored perfectly to the learning goals and complete with supplementary materials and other resources beyond traditional textbooks. I am also able to immediately identify and address my students' challenges and offer them constructive feedback. Thus, I found that it fosters how I see myself as a teacher with a sense of professional development. Artificial intelligence boosts my ability.

The excerpt above shows how P1 perceived his self-efficacy. He mentioned that artificial intelligence boosts his confidence since he found himself can summarize learning material and designed a lesson plan with more various interesting activities. Besides that, he also found that he could create worksheets for his students that were in line with the learning goals and provide supplementary materials. Additionally, he stated that artificial intelligence gave

him a sense of professional development as he could promptly provide feedback to the students.

Similarly, P2 and P3 stated that artificial intelligence influences their perception of their ability as teachers. P2 and P3 similarly mentioned that the assistance of artificial intelligence in lesson planning and evaluating their students makes them feel more confident as teachers to conduct teaching-learning activities. Particularly, artificial intelligence tools provide them with various ideas for teaching-learning activities. With the help of ChatGPT, P3 could design his classroom activities interestingly which boosts his self-confidence to conduct the teaching-learning activities. In the same line, P4 and P5 mentioned that artificial intelligence helps them provide more examples and explain of particular part of the topic.

Considering the use of artificial intelligence by the participants, it shows that artificial intelligence tools positively impact the participants' agency through the provision of personalized professional development, enhancement of classroom management, and automation of administrative tasks. Thus, it is obvious that artificial intelligence tools boost their self-confidence and promotes a sense of professional development within themselves as an English teacher as they feel that they are adaptive to technology as part of the ever-changing educational context.

Discussion

The results of the data analysis revealed how the five EFL teachers manifested teacher agency by using artificial intelligence to promote their roles. Since a teacher is perceived as an active agent, it is obvious that P1, P2, and P3 manifested their agency by using artificial intelligence in the planning and assessment parts. Besides that, P4 and P5 manifested their agency as a teacher by making an informed choice of using artificial in all parts namely planning, implementation, and assessment (Celik, 2022). The artificial intelligence tools used by the participants are ChatGPT, Copilot, Chatpdf, Concencus, Magicschool, Turnitin, Grammarly, Question Generators, and Gilgish. Hemi et al. (2021) explain that teacher should have the capacity to independently and effectively implement pedagogical modification and exercise their autonomy and expertise in aligning their teaching method and curriculum with the specific needs of their students. Accordingly, the use of artificial intelligence in the planning, implementation, and assessment reveals their agency that supports Clavert (2016) who argued that teachers should take deliberate and constructive action in guiding their professional development.

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Entering the context where artificial intelligence has been greatly acknowledged as a powerful tool, all participants perceived that artificial intelligence provides numerous opportunities for improving their teaching. As stated by Xue and Wang (2022), a teacher should actively change their way of thinking, and explore new forms of combining artificial intelligence and teaching. From the data above, all of the participants similarly used artificial intelligence to help them plan the lesson. Particularly, they acknowledged that artificial intelligence helped them plan their teaching. In this case, all of them asked artificial intelligence to provide them with ideas for classroom activities that are related to the learning goals. The use of artificial intelligence by the five participants was in line with some previous studies. The current study similarly found that artificial intelligence fosters the planning phase of teaching as it helps teachers get students' background information as found by Pelham et al. (2020). In addition, how P5 used ChatGPT for generating text for the students to learn certain types of text was in line with a study done by Van Den Berg and Du Plessis (2023), who found that ChatGPT can provide specific materials in lesson planning. Slightly different from the previous studies, the current study also found that teacher's agency could drive teachers to use artificial intelligence for summarizing learning material with document summarization, generating some questions with some quiz generators, and creating scoring rubrics with content creators such as ChatGPT that foster the planning part.

Moreover, their agency also expands the participants' acknowledgment of artificial intelligence in fostering the teacher's role in the teaching-learning process. Although it was found that only P4 and P5 had integrated artificial intelligence in the implementation part, it is clear that their agency drove them to exercise their autonomy. Specifically, P4 and P5 highlighted that their students' needs were the primary motivation for integrating artificial intelligence into the teaching-learning process. The use of artificial intelligence by P4 and P5 supports Hemi et al. (2021) who argued that teachers should exercise their autonomy and expertise in aligning their teaching method and curriculum with the specific needs of their students. Besides that, the teacher's agency that drove P4 and P5 to use artificial intelligence in fostering students' writing skills and speaking skills was also in line with the previous studies (Junaidi, 2020; Makhlouf, 2021; Baskara, 2023; Mahfud, 2023; Nguyen Thi Tra My, & Trinh Thi Ha, 2024; Lu, 2019). Nevertheless, it is worth noting

that the absence of artificial intelligence integration in the teaching practices of P1, P2, and P3 can potentially be attributed to the teachers' limited understanding of how artificial intelligence can effectively assist them in their teaching-learning (Chounta et al., 2022), and the teachers' perception of its potential to negatively change people's view on education and learning among individuals (Atlas, 2023). Thus, it supports Gianni (2023) who highlights the need to develop a clear understanding of when, by whom, and for what purpose artificial intelligence should and should not be utilized in education.

In addition, participants' use of artificial intelligence in the assessments highlights digital competence as part of their agency. Lund and Agard (2020) mentioned that teachers' digital competence becomes more obvious for teachers to foster their professional identity. The manifestation of the teacher's agency is evident in P1, P2, P3, and P4 through the utilization of artificial intelligence for the analysis and evaluation of students' work. The findings of the current study were in line with some previous studies which reported that teachers used an automatic correction assignment system to help them assess their students' progress (Xue & Wang, 2022; Bekou et al., 2024; De Haas et al., 2020; Srinivasa et al., 2022). Accordingly, the findings support Nikolopoulou et al. (2021) who argued that teachers' use of technology could be a pointer to their interest in technology. Moreover, the teacher's agency manifested in the particpants obviously in line with the idea that using artificial intelligence provides numerous opportunities for improving English language teaching and learning (Xue & Wang, 2022; Sun et al., 2020; Campoverde-Quezada & Valdiviezo-Ramírez, 2024).

Regarding teacher's agency, the five participants explained how their use of artificial intelligence influenced their perception on their self-efficacy. Utami and Kuswandono (2023) highlighted that teachers as active agents should possess a particular agency that implicitly influences their belief in their own ability to perform a particular action. In the same line, the five participants explained that their use of artificial intelligence positively influenced their perception of their own self-efficacy. Bandura (1997) explained that self-efficacy refers to one's confidence in his or her ability that may impact his or her thoughts, feelings, motivation, and actions. In this context, P1 perceived that artificial intelligence boosts his confidence since he found himself can summarize learning material and designed a lesson plan with more various interesting activities. Similarly, P2 and P3 also found that the assistance of artificial intelligence in lesson planning and evaluating their students makes them feel more confident as teachers to conduct teaching-

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learning activities. Besides that, the use of artificial intelligence significantly boosts their self-confidence and promotes a sense of professional development. They explained that they found themselves could be adaptive to technology.

Regarding the use of artificial intelligence among the five participants, it obviously put technology as an integral part that influences participants' self-efficacy. Accordingly. the participants' perceptions of their self-efficacy supports Pelaez et al. (2022) who argued that technology integration positively fosters teacher's self-efficacy. Furthermore, the findings of the current study is also in line with some previous studies which delved further into how artificial intelligence significantly influences teachers' perception of their self-efficacy. Similar with Counta et al. (2021) and Davis (2024), the five participants of the current study found that artificial intelligence is a tool that supports their teaching practice. Besides that, it is also in line with Lu et al. (2024) who found higher self-efficacy among Chinese preservice teachers as they used artificial intelligence in their teaching. Furthermore, Summandal (2023) similarly found that EFL Philippines teachers perceived high self-efficacy in the use of artificial intelligence in their teaching. Additionally, the findings of the current study support Chou et al. (2022) who found that teachers with more than three experience teaching with artificial intelligence see a greater need for integrating artificial intelligence as it significantly gives high self-efficacy and contributes to mastery experience. In essence, the five participants' positive perception of their self-efficacy leads them to get a sense of mastery experiences (Bandura, 1997). Thus, teachers who have previously accomplished a task successfully are more likely to exhibit self-efficacy when confronted with the same subject matter in the future.

Conclusion

The research was conducted to examine how teacher's agency manifested in the teachers' use of artificial intelligence and how teachers perceived their self-efficacy. As an active agent, the five participants explained how teacher's agency drove them to use artificial intelligence in to foster their role as teachers. The five participants used artificial intelligence for the lesson planning where they utilized some artificial intelligence tools to find some ideas for the classroom activities, summarizing teaching material, and making questions and worksheets. Furthermore, the teacher's agency manifested in P4 and P5 directed them to

integrate artificial intelligence in the implementation of teaching-learning activities. In this case, P4 and P5 mentioned they used some artificial intelligence such as ChatGPT to help students practice writing, and Gilgish to help students practice speaking. Moreover, the teacher's agency directed P1, P2, P3, P4, and P5 to expand the use of artificial intelligence to assess students' learning progress. In the assessment part, the five participants similarly used quiz analysis reports to examine students' progress. Besides that, P1 and P4 used similarity and artificial intelligence reports to check students' work originality. In addition, P1, P2, P3, and P4 used automated grammar checkers to evaluate students' writing regarding grammar use.

In addition to teacher's agency, the research found that the five participants perceived that the use of artificial intelligence positively influenced their self-efficacy. In detail, all participants perceived that artificial intelligence boosts their self-confidence. The five participants explained that by using artificial intelligence, they are able to allocate their efforts towards their core strengths. In detail, they become more confident about their own ability and positively view themselves as a teacher since artificial intelligence fosters lesson planning where they can conduct teaching-learning activities with various activities as suggested by artificial intelligence. In addition, artificial intelligence gave them a sense of professional development as they could provide more examples and explain particular parts of the topic, foster students' practice for improving their skills, and promptly provide feedback to the students. In other words, the five participants perceived high self-efficacy as it develops a sense of personalized professional development, enhancement of classroom management, automation of administrative tasks, and becoming more adaptive to technology as part of the ever-changing educational context.

Consequently, the study offers a pedagogical implication for schools and teacher education programs. Firstly, schools and teacher training programs may provide targeted professional development programs that emphasize the importance of teacher agency. In particular, training should focus on how teachers can utilize artificial intelligence tools to enhance their pedagogical practices that contribute to building their high self-efficacy. Besides that, the finding of the study also suggests that teachers should actively exercise their agency by joining communities of practice that can facilitate the sharing of experiences and strategies for integrating artificial intelligence into teaching. Therefore, teachers can reinforce their sense of agency and confidence in using artificial intelligence as an integral

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part of teaching-learning activities.

Despite the encouraging findings, this research has some limitations. Firstly, this research was still limited to a small number of participants. Secondly, the researcher did not observe the teachers directly and relied on participants' data. Hence, future research may use a large number of participants to increase the external validity of the findings. Besides, future research may conduct observational studies to examine how teacher agency drives teachers to use artificial intelligence and its impacts on teacher's self-efficacy.

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