Ranau Primary School Teachers' Perceptions of Artificial Intelligence Integration in English as a Second Language Classroom

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DOI: https://doi.org/10.47772/IJRISS.2026.10100525

Received: 21 January 2026; Accepted: 29 January 2026; Published: 16 February 2026

ABSTRACT

In ESL education, practitioners now recognizing Artificial Intelligence (AI) as a tool to improve student engagement and provide personalized learning experiences while also increasing the efficiency of instruction. On the other hand, for AI to be effectively integrated into classrooms, it is essential that teachers accept the technology, particularly in lower-resourced, rural environments. Therefore, this study seeks to investigate the perceptions of primary ESL school teachers in Ranau, Sabah regarding the incorporation of AI into their classrooms through an examination of attitudes surrounding perceived usefulness (PU) and perceived ease of use (PEOU) guided by Technology Acceptance Model (TAM). The research implemented a quantitative exploratory approach that utilizes surveys with 12 ESL Teachers from 4 primary schools located within the rural areas. The results analysed teachers' responses to the survey to determine any trends based on teachers' perceptions of using AI in the classroom. The results of this study indicate that teachers perceive AI as supportive teaching and learning tool. Respondents' confidence level of their ability to learn using AI tools was considered moderate. In addition, comments arose regarding the integration of AI in the classroom, long-term skill development, and a need for sufficient cognitive effort when utilising AI.

Keyword: Artificial intelligence in education, English as a Second Language (ESL), Technology Acceptance Model (TAM), Teachers' perceptions

INTRODUCTION

Artificial Intelligence (AI) has the potential to change the teaching of English as a Second Language (ESL). AI aids in various aspects namely, the way pupils receive lesson tailored according to their needs and receiving feedback in real time. (Al-Smadi et al., 2024; Tiwari, 2024). Because ESL classrooms commonly contain learners from a variety of linguistic and proficiency backgrounds, AI technologies can help overcome uneven learning difficulties, differentiated instruction, and overall learning outcomes to foster more effective (Uwosomah & Dooly, 2025).

AI systems also help automate many repetitive teacher tasks, such as grading, and provide analytics that help streamline lesson planning so that more time can be spent facilitating engagement with students (Al-Smadi et al., 2024; Klímová et al., 2023). These features are especially useful in ESL settings, where learners require extensive practice and feedback to progress (Niemi et al., 2022). While the integration of AI has many potential pedagogical benefits, the successful adoption of AI in ESL classrooms is often contingent upon teachers' perceptions of, attitudes toward, and readiness to use such technologies (Kohnke et al., 2023; Uwosomah & Dooly, 2025).

Both internal and external elements influence teachers' acceptance of AI. Perceived usefulness and perceived ease of use are internal predictors of willingness, and acceptance of AI technology in teaching (Davis, 1989, Khandaker & Aktaruzzaman, 2025). When teachers tend to believe that AI technology leads to positive learning outcomes, greater student engagement, and greater instructional efficiency, they are likely to be more adopters of AI technology. Unwillingness to take the necessary risk, associated with the absence of relevant instructional

technology, the complexity of the AI tools, and the lack of confidence, especially on the part of teachers who have not had the opportunity to work with sophisticated or high-level instructional technology, has been documented in the literature (Kohnke et al., 2023; Wang et al., 2024).

The Technology Acceptance Model (TAM) is of great help in analyzing these issues since it focuses on perceived ease of use and perceived usefulness of technology (Davis, 1989; Sánchez-Prieto et al., 2020). Several studies have addressed the use of Artificial Intelligence in Teaching and Learning; however, studies that address the use of AI technology in teaching primary school ESL (English as a Second Language) teachers in rural Malaysia, and particularly in the state of Sabah, remain understudied.

This study aims to understand the perceptions of primary school teachers on the possible integration of AI technologies in ESL learning in Ranau, Sabah, by assessing the perceived usefulness and perceived ease of adoption of AI in ESL rural classrooms. This study had two primary objectives: the first was to assess the perceived usefulness (PU) of AI adoption in ESL classrooms of Ranau teachers, and the second was to assess the perceived ease of use (PEOU) of AI adoption in ESL classrooms of Ranau teachers.

LITERATURE REVIEW

Artificial Intelligence in Education and ESL Learning

The term Artificial Intelligence (AI) can be understood as the study and design of systems that exhibit behaviours intelligent enough to simulate human learning, reasoning, problem solving, and comprehension of natural language (Wafa & Hussain, 2021; Wijayati et al., 2022). In educational settings, to avoid misunderstandings that suggest the removal of teachers, AI technologies are designed to complement and improve instructional practices by increasing efficiency, personalisation, and engagement (Zhang & Aslan, 2021).

AI technologies in language education, and most recently, in the teaching and learning of English as a Second Language (ESL) have been increasingly developed and adopted primarily due to the technology's capacity to support adaptive learning. ESL learners, due to their diverse linguistic backgrounds, learning styles, and levels of linguistic proficiency, present teachers with challenges in adjusting and responding to differentiated levels of instruction. In comparison to traditional instruction, AI systems can better respond to the individual learning needs of ESL learners by analysing learner data, assessing, and tracking their progress, and providing customised content, learning activities and feedback (Rukiati et al., 2023; Tiwari, 2024).

According to Zhou et al. (2024) and Phan (2023), intelligent tutoring systems, chatbots, automated writing evaluations, and language learning apps that foster self-regulated learning and provide instantaneous feedback increase user engagement. These features, including real-time corrective feedback, are extremely helpful for English as a Second Language (ESL) learners. Furthermore, AI tools that employ natural language processing (NLP) provide students with more meaningful and interactive (Niemi et al., 2022) experiences for practice in each of the areas of language; reading, writing, listening, and speaking.

AI technology and its pedagogical features remain underutilized in ESL classrooms. While urban, affluent schools have the resources to incorporate advanced technologies, rural, low resource areas have inadequate technology, deficient infrastructure, and unprepared teachers (Amdan et al., 2024). These factors are necessary in the examination of technology integration from a more humanistic, contextual, and, particularly, pedagogical, standpoint to analyse teachers' perspectives.

Role of AI in Enhancing Language Learning

Personalization, assessment, provision of feedback, and management of classrooms are just a few of the numerous tasks that AI takes on while assisting learners of ESL. AI's ability to personalize learning experiences is, perhaps, one of the strongest advantages of AI. AI identifies areas of strength and weakness, as well as determines learning patterns, by analysing learner performance data (Maghsudi et al. 2021; Zhou et al. 2024). ESL learners frequently require help with their language skills, and personalized learning is the best strategy.

One of the most crucial factors to consider when integrating AI in a language learning setting is feedback. For example, automated essay assessment tools provide students with feedback on their vocabulary, grammar, and general essay structure and organisation. This enables students to edit their work, improving their language expression skills and even their fluency (Zhou et al., 2024). Self-regulated learning behaviors (Niemi et al., 2022) are the result of the immediate feedback learners receive in response to their errors. Most importantly, learners are motivated and engaged when AI uses interactive and gamified learning. Active participation is encouraged using quizzes, simulations, and dialogue agents (Adeshola & Adepoju, 2023). Providing learners with the opportunity to use language in realistic situations is the communicative competence that the interactive features give (Rusmiyanto et al., 2023).

The advantages that AI provides in automating administrative tasks such as grading, attendance, and performance analytics, and ultimately provides teachers with the ability to focus more on instructional planning and learner support (Klímová et al., 2023; Ma et al., 2024). However, the benefits that AI provides teachers are only as great as the teacher's knowledge and confidence in using AI.

Technology Acceptance Model and AI Adoption in Education

The Technology Acceptance Model (TAM) is used with most new technology initiatives in predicting acceptance and subsequent use of the new technology. TAM suggests that the two variables of (1) perceived usefulness and ease of use, ultimately determine the intention to use a given technology (Davis, 1989). In the educational context, teachers' perceptions of these variables often determine the degree to which the educational innovations are adopted and the extent to which they are sustained.

The extent to which AI will use positively impact teaching and learning as perceived by the teachers is the definition of perceived usefulness. Research is clear that AI acceptance is positively affected when teachers experience instructional benefits, such as teaching that is more effective, less work for the teacher, more interaction from the learners, and personalized feedback to the learners (Ma et al., 2024; Khandaker & Aktaruzzaman, 2025). AI offers strong support for differentiated instruction and practice in the language of learners in ESL classrooms.

The perceived ease of use means how much teachers believe the AI tools are easy to use. When teachers lack significant tech skills, they are unlikely to use tech thought to be complex (Kohnke et al., 2023). Positive perceptions of ease of use are influenced by simple interfaces, good directions, and technical support (Bressane et al., 2023). The Rural areas where resources are scarce and training opportunities are lacking, the external factors described by TAM become very important.

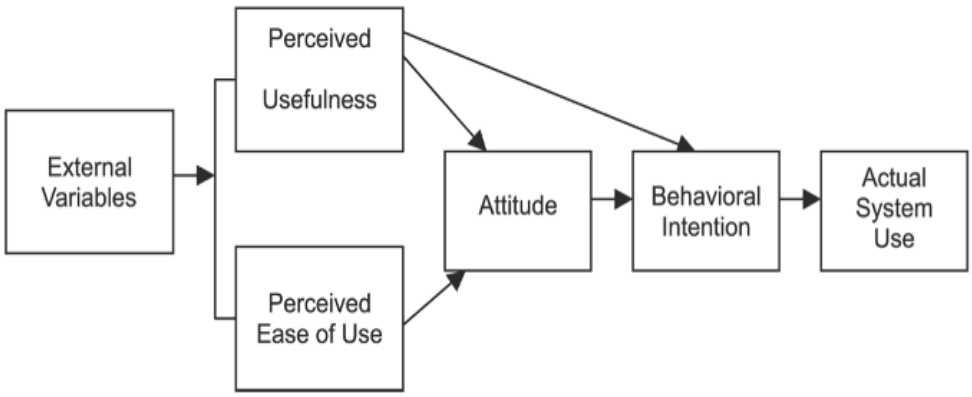

Figure 1: Technology Acceptance Model

Teachers' Perceptions of AI in ESL Learning

The successful integration of artificial intelligence in ESL classrooms depends heavily on the perceptions of teachers. Research shows that though several teachers understand the potential advantages of AI, their worries

about the complexity of the technology, potential ethical dilemmas, and teaching methods remain (Gustilo et al., 2024; FILIZ et al., 2025).

In relation to perceived usefulness, teachers appreciate AI tools that positively impact learning and contribute to teaching efficiency. More teachers appreciate AI tools because they provide, instant feedback, customize instruction, and reduce the volume of administrative work that teachers must do (Zhang & Aslan, 2021). Even so, teachers may continue to be sceptical when the positive impacts of the technology do not address the curriculum needs and AI tools create a disruption in the teaching practices that teachers are used to (Jose & Jose, 2024).

Perceived ease of use is remained as an obstacle to the integration of AI into classrooms. AI tools that are user-friendly, dependable, easy to customize, and adaptable to most teaching strategies will be the most welcomed by teachers (Maola et al., 2024). A teacher's lack of training and their limited ability to use technology will increase their belief that AI tools are difficult to use and will result in a reluctance to use AI, or they may only use the technology in a very limited way (Harry & Sayudin, 2023).

Huertas-Abril & Palacios-Huildago (2023) and Phua et al. (2025) outline a few of the many AIs related worries teachers face including the privacy of student data, the accuracy of evaluation feedback generated by AI and the possible erosion of student critical thinking. These and the many additional AI related worries faced by teaching professionals highlight the critical need of AI related policy and guidance in the educational domain to address AI related ethical policy concerns.

AI Integration in Rural and Under Resourced Contexts

The integration of AI in the educational process is even more complicated in the rural context. Amdan et al. (2024) highlight the rural educational context's poor infrastructure, country traffic, lack of teaching and learning tools, and an AI tools resource poor learning classroom. Rural educators also must manage large number of students in the classroom, a lack of staff development, and a total absence of educational technology support.

Uwosomah and Dooly (2025) document the institutional support in the rural context and the lack of educational institutional support in the rural context, they document teacher's confidence and the adoption of AI related educational tools. Programs of professional educational staff development that focus on the use of technology to address educational pedagogy, AI ethical policies, and the integration of AI educational tools will be developed educational staff attitudes toward AI in a more positive manner (Yang et al., 2025).

The rural educational context of Ranau, Sabah is designed to meet teacher expectations in policy formation and practice. It will be possible for the stakeholders to devise a means of positive educational change that addresses the use of AI in teaching and the rural educational context of Ranau, to achieve educational change that is positive and continuous in the use of AI educational tools in the teaching of English as a Second Language (ESL).

Previous studies lacked focus and described the perceived usefulness and perceived ease of use, while there have been even fewer studies about the external context in under-resourced environments. Particularly, previous studies have focused more geographically and have described the urban, higher education context with a notable absence of primary school ESL teachers in rural settings. The literature suggests that AI has the potential for personalisation, feedback, and improving the efficiency of instruction when applied to learning.

METHODOLOGY

Research Design

A quantitative exploratory approach was used in this study to investigate how primary school teachers in Ranau, Sabah, Malaysia perceives the inclusion of AI in ESL education. Due to the lack of a significant amount of research surrounding this topic within primary schools in rural ESL contexts, an exploratory approach was used to gather quantitative data about how teachers view AI as an educational tool. Survey methodology was employed to gain insight into teachers' perceptions using quantitative analyses. Researchers used Technology

Acceptance Model (TAM) as a framework for their study; therefore, adopting new technology depends on two main components: perception of usefulness and perception of ease of use.

Research Context

The research was conducted in Ranau which is a rural district in the state of Sabah, Malaysia. The schools in this area encounter several difficulties, such as technological facilities, poor internet access, and limited schoolteachers' trainings. These factors make Ranau an appropriate area to study teachers' perceptions of the use of AI in ESL teaching.

Participant and Sampling

Primary school teachers of English as a Second Language working in four government-aided primary schools within the district of Ranau were the subject of this investigation. Data for this research were gathered using purposive sampling. Purposive sampling is used based on inclusion criteria as determined by the researcher. The participants had two requirements to participate, they must be currently teaching ESL at the primary school level; and the participants had to have had some form of exposure, familiarity, or experience using AI.

Instruments

The survey was divided into three parts. In Section A, respondents specified their gender, years of teaching, educational degrees, and familiarity with AI tools. The second Section addressed the perceived usefulness of AI in ESL teaching and was divided into subcategories of effectiveness, teaching efficiency, teaching materials, student participation, lesson and activities, and lesson planning. Section C focused on perceived ease of use and the subcategories of ease of learning, use of the AI tools in the classroom, operational control, the AI tools use skill, and cognitive level. Each of the survey items was scored according to a five-level Likert type scale, with 1 being Strongly Disagree and 5 being Strongly Agree.

To ascertain that the items in the questionnaire are in fact measuring what they are intended to measure, the items were presented to two ESL educators who conduct educational technology research. A pilot test of the instrument proved to be reliable, and the instrument's internal reliability was satisfactory, as indicated by the value of Cronbach's alpha being greater than the 0.70 in both the perceived usefulness and perceived ease of use constructs. This means that the instrument is reliable for use in the current stage of research.

Data Collection Procedures

An initial pilot survey was issued to a small group of ESL teachers to establish the validity of the survey. The primary study survey was disseminated to a broader group of ESL teachers at the 4 selected schools. After processing the pilot survey, logistics and the teachers' preferences dictated the survey to be administered either electronically or via hard copy. Before answering each survey, teachers were briefed on the study, its potential benefits, and provided with options to give either voluntary or informed consent. Anonymity was awarded to each survey, to allow teachers a guarantee of confidentiality and to give them the freedom to respond without bias, or reservation. The primary purpose of the survey was to facilitate the collection of extensive data regarding educators' attitudes towards the role of AI in ESL learning.

Data Analysis Method

The response data from the surveys were analysed with basic statistical methods frequencies, percentages, and means. These methods analysed and summarized AI teachers' demographic profile, and their AI perceptions in terms of usefulness, and ease of use. With this being an exploratory study, the use of basic statistical methods and the aim of the study guided the selection of descriptive analysis methods.

FINDINGS

Participants' Professional and Demographic Background

The research sample included 12 ESL teachers at primary schools across 4 rural schools in Ranau, Sabah. Most participants were women, in line with the overall picture of Malaysian primary education. Most of the

participants were from the Indigenous community of Sabah, with some representing the Chinese ethnicity. Teachers included in the sample held positions in national schools, mission schools, and Chinese national-type schools, within the rural context.

Looking at the overall teaching experience of the participants, they were proven to be seasoned teachers with most of them having taught for 9 years and above. As for ESL teaching, most of them were already quite experienced. Most of them had qualifications in Teaching English as a Second Language (TESL), while some had degrees in different disciplines. Some participants had also completed additional professional development training and/or training conducted by the Ministry of Education concerning English language teaching.

All participants noted they had some level of exposure and use of AI tools including teaching AI. Most used generative bots including ChatGPT, Gemini, Copilot, Canva AI and Suno AI. Many teachers indicated they had used the mentioned AI tools for lesson preparation, materials creation, and language teaching activities for the classroom, and had done so for two to three years. The participants were all seasoned ESL teachers with experience in practical use of AI tools. Thus, they were able to give constructive feedback regarding the value and ease of the AI tools in ESL classrooms in rural areas.

Teachers' Perception of the Usefulness of AI in ESL

This part of the study discusses teachers' perspectives on the value of AI in the instruction of English as a Second Language. The teachers from Ranau appreciated and recognized the value of AI in instruction, and in many ways, they saw the value of AI in their practice.

Most of the participants believed that AI contributes positively to the productivity of teachers. They believed that by using AI tools, teachers can create and implement lessons and instructional resources easier than before. Additionally, a significant percentage of teacher respondents indicated that AI allows them to create instructional resources efficiently. Therefore, based on the findings of this study, the utilization of AI within the teaching of ESL is economically advantageous for teachers, specifically with respect to the development of lesson materials and supplemental resources that support the overall learning objectives of students.

The teachers also reported a favourable perspective on the impact of AI upon the quality of instructional materials produced by teachers. They spoke very highly of the ability of AI to provide teachers with the capability to produce instructional resources, and enhanced lessons. Many of the respondents conveyed a belief that AI will increase the level of student learning and engagement. Thus, there is evidence to suggest that technology-enhanced tools administered by AI will increase interest and encourage greater interaction and participation of students within ESL classroom environments. Most of the teachers reported a favourable opinion of the ability of AI to improve the planning of their lessons, while simultaneously decreasing the amount of time necessary to perform this function; however, a minority of responses expressed some uncertainty as to how fully AI can assist in the lesson-planning process. Based on this information, it appears that some educators might choose conventional methods of lesson preparation rather than using innovative technologies such as artificial intelligence.

In addition, many respondents provided comments that did not indicate a strong bias one way or another towards the different sections of usefulness for AI within an ESL classroom, leading to the conclusion that a large segment of this population has likely not had experience with AI as part of their instructional processes and therefore have not benefited from its use as much as intended. Furthermore, very few participants indicated that they had experienced no difficulties using AI to teach students indirectly through ESL; however, we can say that every single participant indicated that they were able to recognize some form of beneficial outcome from utilizing AI in their instructional programs.

The feedback from the participants shows that, overall, teachers perceive AI to be a valuable pedagogical aid that contributes to teaching effectiveness, instruction efficiency, quality of materials, student participation, engagement, lesson preparation and other instructional activities. The absence of a full set of positive or negative responses indicates that, with this range of responses, there is a lack of confidence or familiarity with the

technology and support, and this is precisely the reason AI is likely to remain underutilized in the rural teaching of ESL.

Teachers' Perceptions of the Ease of Using AI in ESL

This section explores the perceptions of teachers in relation to the ease of use of AI in the teaching of ESL. The data indicates that teachers, overall, perceived AI to be easy to use.

Most of the respondents agreed that the use of AI technology for teaching was not daunting. Teachers perceived the technology to be easy to understand and interpret, and this shows that the technology is rudimentary and not too advanced. Classroom activities that make use of AI technology were, for the most part, perceived to be easy to use by the respondents, and use of AI technology was perceived to be highly efficient in achieving the objectives of the lesson, and this indicates that teachers were confident in their use of AI technology for teaching.

Although most teachers were generally in agreement that most AI applications were straightforward, integrating AI into everyday classroom practice was more difficult. Neutral responses were most pronounced with respect to operational control and classroom application, meaning that while AI tools were accessible to teachers on an individual basis, live use during classroom teaching was more challenging and required additional adjustment.

Teacher's confidence in their ability to use AI for teaching purposes was another issue. Many participants expressed doubt about their ability to acquire even basic advanced skills in AI. This suggests that while teachers may be at a stage where they are willing to use AI, sustained use of AI may be dependent on regular use, professional training, and support from the school. Most teachers in general believed that interacting with AI was cognitively simple; however, a few believed that the use of AI tools was mentally challenging. Even with the assumption that AI tools are simple, learning a new technology, combined with the ability to adapt tools into the classroom, contribute to the frustrations of some teachers.

Overall, the results indicate that the teachers viewed AI as simplistic, particularly regarding ease of operation and learnability, for ESL instruction. However, the apprehension related to future skill advancement and assimilation into the classroom setting signifies the importance of AI related education and continuous support in rural education settings to bolster teachers' conviction and persistent utilization of AI.

DISCUSSION

Teachers' Perception of the Usefulness of AI in ESL

The results show that most primary ESL teachers in Ranau view artificial intelligence positively. Teachers believed AI positively impact effectiveness in teaching because AI assists with lesson delivery, instructional preparation, and classroom control. This is consistent with the Technology Acceptance Model, which states that technologies that are accepted and used more frequently are those that are considered useful (Davis, 1989). Positive evaluations in this case, suggesting that teachers perceive AI positively complement their professional capacities.

Teachers perceived increased instructional efficiency. Teachers noted that AI was helpful in teaching resource generation and language support, in completing tasks and in less time. This is in line with previous research that noted AI to be helpful in increasing instructional efficiency and decreasing workload (Klímová et al., 2023; Ma et al., 2024). Yet, neutral perceptions and less positive perceptions explain the number of teachers in rural contexts, where access to AI tools and familiarity with AI tools is more limited.

The enhancement of instructional aids was cited by some as evidence of usefulness. In the opinion of the teachers, the tools assisted in the generation of explanations and even in the construction of lessons and its materials. This corroborates the findings of Zhang and Aslan (2021) and other studies that underscore the positive influence of AI on instructional quality in terms of generation and construction of content. On the other hand, some teachers' reluctance might reflect, as Huertas-Abril and Palacios-Hidalgo (2023) noted, apprehension regarding the accuracy, appropriateness, and curriculum conformity of some materials. This means

that although the educators appreciated the content created by AI, they still had to balance, or explain, the materials according to the educational level of the learners.

The highest ranked advantage of integrating AI was student engagement. Teachers noted that AI tools fostered student interest and engagement in learning the English as a second language (ESL). This is consistent with the literature that states the immediate feedback provided by AI and its interactivity fosters engagement and motivates active learning (Adeshola & Adepoju, 2023; Jose & Jose, 2024). This engagement is particularly salient in primary contexts where learner attention is difficult to sustain and may explain the educators' willingness to embrace the use of AI.

The discussion highlights that teachers' positive perceptions stem from the practical benefits of teaching in the classroom. Nevertheless, response differences indicate the presence of surrounding contextual elements like training, infrastructure, and experience, which might help capture AI's potential. Thus, advocating for the adoption of AI in rural ESL teaching would place similar importance on environmental and institutional factors, as advocates suggest the most critical variables are the perceived usefulness to the adoption of AI.

Perceived Ease of Use of AI in ESL Teaching

Teacher consensus across various age groups indicated that they had learned these tools easily, while at the same time showing that teacher confidence in using the tools decreased as the tools were used more often and for more complex tasks. This correlates to the Technology Acceptance Model (TAM), which states that the ease-of-use of an information communication technology (ICT) will affect the level of confidence that an individual has in the ICT, as well as how much the ICT has already been used by the individual. Additionally, Bressane et al. (2023) showed that using AI tools is difficult unless AI tools are designed in a way that makes it easy for an individual to access them. Respondents in the study also said that while these tools may have many barriers to learning the tools, the barriers to learning the tools do not necessarily prevent teachers from implementing those tools into their instructional practices.

Teachers are uncertain about their use of AI tools in the classroom. Many teachers who had access to it still expressed difficulty in being able to effectively instruct students using AI Tools in real time. As noted by Niemi et al. (2022), time constraints, classroom control, and limited assistance are some of the contextual variables that can limit the successful integration of new technology into the educational setting. This uncertainty also exists in rural ESL classrooms, where unreliable internet and lack of collaborative support will exacerbate these instructional barriers.

The findings point towards an overwhelming lack of confidence regarding teachers' ability to become proficient in the use of AI technology for instructional purposes. For some teachers, there remains uncertainty about their ability to achieve proficiency in AI technology in the long term, so while the AI does have some potential applications, they will require a level of sustained effort that extends beyond basic self-directed learning. In contrast, teachers expressed a high level of confidence in their proficiency with AI tools after experiencing structured professional development (Chan & Tsi, 2023). This discrepancy between these two situations underscores the need for proper support and training from the institution to support teachers' ability to effectively utilize this technology.

The effort teachers must use regarding the situation illustrates the complexity of the situation. Even where most teachers working with AI expressed having no problems with using AI, some stated using AI generated a lot of effort and work for them. This indicates that there is a need to look beyond the technology itself, and to the complexity introduced when teachers must blend the new technology with the existing teaching processes, and curricular and pedagogical cycles. It is evident that the introduced technology without support will remain unused (Sánchez-Prieto et al. 2020).

These findings illustrate that although AI is seen as simple to use at a fundamental level, difficulties intergrading AI into teaching practices, as well as restraints involving self-efficacy and mental demand, may impede continued and productive usage. These factors may also point to a greater need for strategic professional development, rural ESL supportive friendly institutional settings, and the design of tools that are more focused.

CONCLUSION

With the use of AI tools in instruction, most of the respondents posit that AI positively contributes to teaching effectiveness, enhancement of educational resources, active learning, and teaching planning. AI allows teaching staff to use their professional skills and guides AI as an educational support tool rather than as a replacement for pedagogical responsibilities.

Teachers' opinions regarding the ease of use of AI as an educational tool are divided. There was expressed confidence in the learning and ease of use of AI tools, but there were also expressed concerns regarding the integration of AI tools in the class and the mastery of the skills for continuous use of the tools. With little training, support, and technology that are characteristic of rural education, a lack of support, and technology, a variety of context-related factors negatively affect rural education.

The results support the use of the Technology Acceptance Model in relation to the adoption of AI in rural ESL settings while reaffirming the significance of external facilitating factors. The current research illustrates the impact of focused professional learning, enhanced infrastructure, and institutional support in ameliorating the sustained belief and use of AI by rural teachers. With an emphasis on the rural primary school teachers' perspectives, which remains an under-researched area, the current study offers empirical research to the literature on the use of AI in ESL education and offers valuable insights for policymakers and school administrators.

All studies have limitations and this one is no different. Most importantly, there were only 12 primary school ESL teachers, in the sample, which affects the generalisability of the findings. The ESL teacher perceptions, at least in part, were in response to small, rural schools in Ranau, Sabah, and will not represent, or fully represent, the ESL teacher perceptions in other areas and other schools. The sample is small due to the nature of the research and the rural, under-resourced regions where the research is conducted. The sample does offer some insights into the acceptance of AI in ESL teaching. The acceptance of AI in ESL teaching by teachers is most likely a response to the rural, under-resourced setting where the research was conducted. This research looks to the future and hopes to see studies that have many participants, at least more than and beyond the rural, under-resourced region. More participants will offer more strength to the findings and more and more options to transfer the findings to other areas.

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