Primary ESL Teachers' Perceptions of AI Tools for Pupils' Speaking Practice: Opportunities and Limitations

***Kong Ming Yien., Melor Md Yunus, and Hanita Hanim Ismail**

Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

***Corresponding Author**

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ABSTRACT

This study explores Malaysian primary school English teachers' perceptions of using Artificial Intelligence (AI) tools to support pupils' speaking practice. Although AI integration is accelerating globally, research focusing specifically on AI-supported speaking instruction in primary ESL classrooms remains limited. Grounded in the Technology Acceptance Model (TAM), this study examines both the perceived opportunities and challenges of AI integration with emphasis on how teachers evaluate the usefulness, ease of use and overall applicability of AI tools such as ChatGPT in developing young learners' speaking skills. A mixed-methods survey design was employed involving 60 English teachers from public primary schools in Selangor. Quantitative data were analysed using descriptive statistics to identify trends in teachers' perceptions of AI's pedagogical benefits and limitations while qualitative data from open-ended responses were analysed thematically to provide deeper insights into teachers' experiences. Findings indicate that teachers view AI as a highly valuable resource for enhancing oral proficiency, offering instant and personalised feedback, reducing pupils' speaking anxiety and creating engaging, interactive learning environments. Teachers also highlighted that AI expands opportunities for self-paced practice beyond the classroom, especially for shy or low-confidence learners. Despite these benefits, significant challenges emerged. Teachers expressed concerns about unreliable internet connectivity, limited device availability, inaccurate speech recognition especially for young children's voices, insufficient training, data privacy issues and pupils' potential overreliance on AI-generated responses. These challenges highlight the need for stronger infrastructure support, targeted professional development, curriculum-aligned AI content and clear ethical guidelines. Overall, the study underscores the promising role of AI as a complementary tool for supporting speaking development in Malaysian primary ESL settings while emphasising the systemic and pedagogical considerations required for sustainable implementation.

Keywords: Artificial Intelligence, ESL speaking practice, primary education, teacher perceptions, Technology Acceptance Model

INTRODUCTION

Speaking is one of the most important yet challenging skills for young ESL learners to master. It requires learners to think and respond quickly while maintaining fluency, pronunciation accuracy and communicative competence (Tatchakrit, 2024). Although the CEFR-aligned English Language Curriculum aims to strengthen communicative abilities in Malaysia, many primary pupils continue to struggle with oral communication, especially in developing confidence and fluency (Aziz & Kashinathan, 2021). These difficulties are often linked to limited English exposure outside the classroom, speaking anxiety and a lack of meaningful interaction opportunities (Kafabih, 2025). The predominance of teacher-centred practices focusing on reading and writing further restricts pupils' speaking practice.

With rapid technological advancement, Artificial Intelligence (AI) has emerged as a promising tool to enhance language learning. AI-powered platforms such as ChatGPT, ELSA Speak and SmallTalk2Me can simulate real conversations, provide instant pronunciation feedback and offer adaptive speaking tasks suited to learners' proficiency levels (Sangeetha & Jamaludin, 2025). These tools allow pupils to practise at their own pace in low-

pressure environments, reducing fear of mistakes and increasing opportunities for oral communication (Nhan, 2025). AI can also reduce teachers' workload by assisting with routine feedback, automated scoring and monitoring, enabling teachers to focus more on personalised instruction (Mahmoud, 2024).

In Malaysian primary ESL classrooms, AI-based speaking tools align well with young learners' developmental needs. Children in the concrete operational stage learn effectively through interaction, exploration and active engagement (Pakpaha & Saragih, 2022). Gamified AI features and interactive tasks support these learning preferences by offering motivating and age-appropriate experiences. Nonetheless, successful AI integration depends heavily on teachers' acceptance, readiness and perceptions (Zulkarnain & Yunus, 2023), which ultimately determine whether AI is used meaningfully or remains underutilised.

Although interest in AI for language learning is growing worldwide, its adoption in Malaysian primary schools remains limited. Barriers such as low digital literacy, limited training in AI-assisted pedagogy, unstable internet connectivity and concerns over accuracy, privacy and ethical use of AI-generated content continue to hinder implementation (Vincent, 2025). As a result, the potential of AI to enhance speaking proficiency is still underexplored in Malaysian primary ESL contexts. Understanding teachers' perceptions is therefore essential to identify both the opportunities such as increased motivation, personalised feedback and expanded speaking exposure and the challenges, including technological constraints, accent misrecognition and fears of overreliance on AI (Sivanganam, 2025). Without these insights, classroom AI integration may fail to achieve its intended outcomes.

Therefore, this study investigates Malaysian primary ESL teachers' perceptions of using AI as a tool for speaking practice. It examines the opportunities AI offers for developing pupils' speaking skills and the limitations or challenges teachers face when integrating AI-based speaking tools. The study addresses the following research questions:

1. What opportunities do teachers perceive in using AI tools to support pupils' speaking practice?

2. What are the perceived limitations or challenges faced by teachers in implementing AI tools for speaking instruction?

LITERATURE REVIEW

Teachers' Perceptions of Using AI Tools in Speaking Instruction

Teachers' perceptions play a critical role in determining how effectively AI tools are used in speaking instruction. Antonietti (2022) emphasises that teachers are more likely to adopt digital innovations when they believe the tools are useful, easy to operate and supported by sufficient training and infrastructure. In language education, Sangeetha (2025) found that many teachers acknowledge the potential of AI to support speaking development by offering personalised feedback and additional practice opportunities. However, differences in digital competence influence these perceptions. An (2022) reported that technologically confident teachers tend to view AI positively, while those with weaker digital literacy may feel anxious or uncertain. Firdaus and Nawas (2024) similarly observed that some teachers perceive AI as distracting or challenging to integrate effectively. In Malaysia, Shakri (2025) highlighted that although teachers recognise AI's value, many are unsure how to implement it purposefully due to limited training, unclear curriculum guidance and uneven access to digital resources.

Perceived Opportunities of AI in Enhancing ESL Speaking Skills

Research has also highlighted several opportunities associated with using AI to enhance pupils' speaking skills. AI-powered tools provide instant and personalised feedback on pronunciation, fluency and intonation, enabling learners to monitor their performance and practise repeatedly (Hidayah, 2025). This benefit is particularly relevant in large primary classrooms where teachers may not have time to provide individual oral feedback. AI also creates a low-anxiety environment in which pupils can practise speaking privately without fear of embarrassment, helping to increase their confidence (Zhang, 2024). Zou (2024) further emphasised that AI

extends speaking exposure beyond the classroom by allowing pupils to practise "anytime and anywhere," supporting learners who may lack English interaction at home. Motivational elements such as games, avatars and reward systems add to the appeal of AI, making speaking tasks more engaging and enjoyable (Alexis & Becky, 2024). These interactive features align with the needs of young learners and can support cognitive development through exploration and creativity. In addition, AI tools are able to adjust speaking tasks to suit learners' proficiency levels, offering meaningful differentiation for both high- and low-achieving pupils (Hamayun, 2025).

Perceived Limitations and Challenges in Using AI For Speaking Practice

Despite these opportunities, several limitations and challenges have been documented in previous studies. One of the most persistent issues concerns the accuracy of AI-generated feedback. Automated speech recognition systems often misinterpret children's voices, developing articulation patterns or diverse accents, which may lead to incorrect or unhelpful assessments (Zou, 2024). Mudway (2025) noted that such inaccuracies can undermine learners' confidence or result in misleading corrective input. Technical and infrastructural challenges also remain widespread. Junaidi (2024) reported that unstable internet, limited digital devices and insufficient technical support frequently disrupt lessons and discourage teachers from using AI. Additionally, many teachers feel unprepared to integrate AI effectively because of insufficient training or unfamiliarity with AI-supported pedagogy, as highlighted by Sulaiman (2024). Ethical concerns further complicate AI adoption. Kotsis (2025) pointed out risks related to data privacy, safety and the potential for pupils to rely excessively on AI-generated responses, which may limit creativity and reduce real human interaction.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) developed by Davis (1989) explains that people decide to use a new technology based on two main beliefs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). PU refers to how much teachers believe AI tools such as ChatGPT, ELSA Speak, and SmallTalk2Me can improve pupils' speaking skills by giving instant feedback, increasing confidence and supporting personalised learning. PEOU refers to how easy teachers feel the tools are to use. When AI is simple to operate, requires little technical skill, and fits smoothly into lessons, teachers are more likely to use it. However, difficulties such as unstable internet, complex interfaces or low digital literacy can reduce acceptance (Venkatesh & Davis, 2000). These two beliefs shape teachers' attitudes and eventually determine their Behavioural Intention (BI) to use the tools. In this study, BI reflects teachers' willingness to integrate AI into their speaking lessons; positive beliefs increase adoption, while concerns about accuracy, privacy or limited devices may reduce it. TAM fits well with this study because it closely matches the teachers' perceptions gathered: the benefits they see relate to PU, the challenges they face link to PEOU and their overall willingness to adopt AI corresponds to BI as supported by past educational research (Teo, 2011). Since teachers decide how technology is used in the classroom, their acceptance directly affects how effectively AI can support pupils' speaking development in CEFR-aligned primary ESL settings. Overall, TAM provides a clear and useful framework for understanding how teachers judge the usefulness and ease of AI tools and what influences their intention to use them in English speaking lessons.

METHODOLOGY

Research Design

This study used a mixed-methods survey design to better understand teachers' perceptions of using Artificial Intelligence (AI) tools like ChatGPT to support speaking practice among primary school pupils. A mixed-methods approach was chosen because it allowed for both numerical data and detailed explanations within the same study. The quantitative part involved a structured questionnaire with Likert-scale items. This revealed overall trends in teachers' perceptions of the opportunities AI offers, the challenges they face and their willingness to include AI in speaking lessons. To enhance these findings, the questionnaire included four open-ended questions. These invited teachers to share their personal experiences, challenges and suggestions related to AI-supported speaking practice. The qualitative insights helped clarify the reasons behind the numerical results. Using both types of data improved the study by providing a more complete and validated understanding

of the research issue. This aligns with Creswell's view, as noted in Chali (2022) that mixed-methods research offers complementary evidence that boosts the depth and validity of findings.

Participants

This study included sixty English language teachers from government primary schools in Selangor, Malaysia. Purposive sampling is used to ensure that all participants were currently teaching English at the primary level and were familiar with AI tools like ChatGPT, ELSA Speak or other applications. Selangor had been chosen as the research location because it has a diverse mix of urban and rural schools and is known for its strong technological infrastructure. This made it a good place to examine the use of AI in ESL speaking instruction. Participation in the study was voluntary and all teachers provided informed consent before filling out the questionnaire.

Research Instrument

The study used a structured online questionnaire to collect both quantitative and qualitative data. The instrument consisted of four sections: Section A gathered demographic information such as age, teaching experience, school location and prior use of AI tools; Section B examined teachers' perceptions of the opportunities AI offers for improving pupils' speaking fluency, confidence and personalised feedback; Section C explored the limitations and challenges of using AI including technological issues, accuracy concerns, privacy risks and potential overreliance and Section D assessed teachers' readiness to adopt AI, focusing on confidence, willingness and training needs. Four open-ended questions were also included to obtain deeper insights into teachers' experiences and suggestions. The questionnaire was pilot-tested with ten primary school English teachers to refine unclear items. Reliability analysis showed strong internal consistency with Cronbach's Alpha values of 0.94 (Section B), 0.827 (Section C) and 0.977 (Section D). An experienced ESL teacher further reviewed the instrument to ensure content validity and alignment with CEFR-speaking expectations.

Data Collection

Data collection was carried out through an online questionnaire distributed to participants via Google Forms. This method was chosen for its accessibility and convenience which allowed the teachers from various districts in Selangor to participate without disruption to their teaching commitments. Before accessing the questionnaire, participants were provided with an information sheet explaining the purpose of the study, their rights as participants and assurances of confidentiality. The data collection period lasted for approximately two weeks during which reminder messages were sent to encourage participation and ensure an adequate response rate. Upon submission, responses were securely stored and prepared for quantitative and qualitative analysis.

Data Analysis

The data were analysed using both quantitative and qualitative approaches in line with the study's mixed-methods design. Quantitative data from the Likert-scale items were analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics including frequencies, percentages, means and standard deviations were generated to summarise teachers' perceptions of AI's opportunities, limitations and their readiness to adopt AI in speaking instruction. Reliability was assessed using Cronbach's Alpha to confirm the internal consistency of the instrument. Qualitative data from the open-ended responses were analysed thematically. The analysis involved reading and re-reading the responses to become familiar with the data, generating codes and identifying recurring themes that captured teachers' experiences, concerns and suggestions. These qualitative findings were then used to complement and deepen the interpretation of the quantitative results, offering a more holistic understanding of the research problem.

Ethical Considerations

This study adhered to established ethical standards for research in educational settings. All participants were informed about the purpose of the study, the voluntary nature of their involvement and their right to withdraw at any time without penalty. Informed consent was obtained prior to data collection. No identifying or sensitive personal information was collected to ensure the anonymity and confidentiality of all participants. The data were

stored securely and used solely for academic and research purposes. The study was conducted in accordance with the ethical principles outlined in the British Educational Research Association's Ethical Guidelines for Educational Research (BERA, 2024).

RESULTS

Findings

Participants' Demographic Information

Table 1 Distribution of Participant Demographics

Demographics	Description	Frequency	Percentage
Gender	Male	12	20.0%
	Female	48	80.0%
	Total	**60**	**100%**
Age	Below 25	4	6.7%
	26-35	35	58.3%
	36-45	18	30.0%
	46-55	3	5.0%
	Above 55	0	0%
	Total	**60**	**100%**
Teacher experience	Less than 5 years	21	35.0%
	5-10 years	17	28.3%
	11-15 years	14	23.3%
	More than 15 years	8	13.3%
	Total	**60**	**100%**
School location	Urban	42	70.0%
	Suburban	9	15.0%
	Rural	9	15.0%
	Total	**60**	**100%**
Have you use AI tools?	Yes	51	85.0%
	No	9	15.0%
	Total	**60**	**100%**

A total of 60 primary school English teachers participated in the study. As shown in Table 1, the majority were female (80%) while 20% were male. Most participants were between 26 and 35 years old (58.3%) followed by those aged 36 to 45 years (30%). Only 6.7% were below 25, and a small group (5%) were aged 46–55. In terms of teaching experience, 35% had less than five years of experience while 28.3% had between 5 and 10 years. Another 23.3% had 11–15 years of experience and 13.3% had been teaching for more than 15 years. This indicates that the sample consisted of teachers with varied levels of professional experience. Most teachers (70%) were teaching in urban schools with 15% teaching in suburban and 15% in rural areas. A large majority of the participants (85%) reported having used AI tools before which showed a high level of exposure to digital technologies among the respondents. These demographic patterns suggest that the participants generally belonged to a digitally literate, professionally diverse group mostly located in urban educational environments.

Teachers' Perceptions of Opportunities of AI in Speaking Practice

Table 2 Teachers' Perceptions of Opportunities of AI in Speaking Practice

No.	Items	SD	D	N	A	SA	Mean	SD
1	AI tools can provide pupils with more opportunities to practise speaking English.	0	2	0	28	23	4.2	0.777
2	AI enables pupils to practise speaking in a low-anxiety environment.	0	4	7	31	18	4.1	0.832
3	AI-based speaking tools can give instant feedback on pronunciation and fluency.	0	1	7	30	22	4.2	0.715
4	Using AI makes speaking activities more engaging and interactive.	1	1	7	25	26	4.2	0.851
5	AI helps pupils become more confident in speaking English.	0	2	9	30	19	4.1	0.775
6	AI tools support personalised learning according to pupils' proficiency levels.	0	2	9	28	21	4.1	0.791
7	AI can supplement classroom speaking practice effectively.	0	3	8	35	14	4.0	0.759
8	AI enhances teachers' ability to design creative speaking lessons.	0	1	2	31	26	4.4	0.637

Overall, teachers expressed highly positive perceptions toward the opportunities offered by AI tools for pupils' speaking practice. Mean scores for the eight items ranged between 4.0 and 4.4, indicating strong agreement across all statements. The highest-rated item was "AI enhances teachers' ability to design creative speaking lessons" (Mean = 4.4, SD = 0.637), suggesting that teachers find AI beneficial in diversifying and enriching classroom activities. Teachers also strongly agreed that AI can offer pupils more opportunities to practise speaking English (Mean = 4.2), provide instant feedback on pronunciation and fluency (Mean = 4.2), and make speaking activities more engaging and interactive (Mean = 4.2). Additionally, teachers agreed that AI tools help pupils to build their confidence in speaking, support personalised learning and enable practice in a low-anxiety environment (Means between 4.1–4.2). The lowest-rated item, though still positive, was "AI can supplement classroom speaking practice effectively" (Mean = 4.0), indicating that some teachers may view AI as a complement rather than a replacement for teacher-led activities. These results indicate that teachers perceive AI tools as valuable, engaging and supportive resources that can enhance pupils' oral language development.

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Teachers' Perceptions of Limitation and Challenges

Table 3 Teachers' Perceptions of Limitation and Challenges

No.	Items	SD	D	N	A	SA	Mean	SD
1	AI tools require stable internet and digital devices that may not be available in all schools.	0	0	4	17	39	4.6	0.619
2	Pupils may rely too much on AI and reduce real human interaction.	0	1	10	20	29	4.3	0.804
3	AI feedback may not always be accurate or suitable for young learners.	0	4	6	25	25	4.2	0.873
4	Teachers need more training to integrate AI effectively in speaking lessons.	0	2	5	27	26	4.3	0.761
5	Concerns about pupils' data privacy and safety arise when using AI tools.	0	1	6	23	30	4.4	0.736
6	AI content may not always align with the Malaysian CEFR curriculum.	0	1	12	22	25	4.2	0.813
7	Excessive screen time when using AI may affect pupils' attention or health.	0	0	6	22	32	4.4	0.673
8	Lack of school support and infrastructure limits AI implementation.	0	0	5	25	30	4.4	0.645

Although teachers acknowledged the benefits of using AI, they also shared several real and practical concerns about bringing these tools into speaking lessons. The ratings were consistently high (between 4.2 and 4.6), showing that many teachers strongly agreed with the challenges raised. The biggest issue was the need for reliable internet and sufficient devices for pupils (Mean = 4.6, SD = 0.619), which remains a problem in many schools. Teachers also felt that pupils might rely too heavily on AI which will reduce meaningful face-to-face interaction (Mean = 4.3). They were concerned about the accuracy of AI feedback (Mean = 4.2), the lack of proper training for teachers (Mean = 4.3) and data privacy issues (Mean = 4.4). Some also mentioned that AI-generated responses do not always align with the CEFR-aligned curriculum (Mean = 4.2) and that increased screen time could affect pupils' focus and well-being (Mean = 4.4). Many agreed that without strong support and adequate infrastructure from the school, effective use of AI is difficult to achieve (Mean = 4.4). Overall, while teachers see the promise of AI, they remain cautious because of these practical, pedagogical, and ethical concerns.

Overall Perception and Future Use

Table 4 Overall Perception and Future Use

No.	Items	SD	D	N	A	SA	Mean	SD
1	I am interested in learning more about how to use AI for speaking lessons.	0	1	8	24	27	4.3	0.761
2	I believe AI will become an essential tool in future English teaching.	0	0	4	28	28	4.4	0.616

3	I would recommend AI tools for speaking practice to other teachers.	0	0	9	22	29	4.3	0.729
4	AI should be incorporated into the school English curriculum.	0	1	12	21	26	4.2	0.819

Teachers' overall perceptions toward future AI integration were similarly positive. All items in this section scored between 4.2 to 4.4 which reflects a strong willingness to adopt AI tools in English language teaching. Teachers expressed high interest in learning more about using AI in speaking lessons (Mean = 4.3) and believed that AI will become an essential tool in future English teaching (Mean = 4.4). They also indicated a strong likelihood of recommending AI tools to other teachers (Mean = 4.3). Furthermore, there was strong agreement that AI should be incorporated into the school English curriculum (Mean = 4.2). This suggested teachers' readiness for more systematic integration of AI within the educational framework. These findings reflect an overall positive and future-oriented mindset with teachers showing openness, interest and confidence in the continued use of AI for enhancing speaking practice among primary school learners.

Open-Ended Questions

A thematic analysis was conducted to explore teachers' perceptions regarding the use of AI tools for pupils' speaking practice. The analysis generated four overarching themes aligned with the four open-ended questions:

Table 5 Thematic analysis for open-ended questions

1. What do you think are the main benefits of using AI for pupils' speaking practice?	Theme 1: Increased Opportunities for Practice Anytime, Anywhere	Teachers pointed out that AI gives pupils more chances to practise speaking outside the classroom. AI allows pupils to: ● "Practise anywhere, anytime," even without a partner ● Increase their exposure to English ● Practise at their own pace Teachers noted that this flexibility is especially helpful for shy or low-confidence pupils.
	Theme 2: Instant and Personalised Feedback	Teachers highlighted that one of the biggest strengths of AI is its ability to give immediate and personalised feedback. AI can: ● Correct mispronunciations instantly ● Convert pupils' speech to text for clearer accuracy checks ● Provide individualised feedback that teachers may struggle to give in large classes
	Theme 3: Boosting Confidence and Reducing Anxiety	Teachers shared that AI tools help pupils feel less anxious because they do not feel judged by others. AI creates a low-pressure environment that allows pupils to: ● Practise speaking without fear ● Build confidence gradually ● Participate more actively in speaking tasks

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		Teachers also mentioned that AI reduces the "awkwardness" often felt by low-proficiency learners.
	Theme 4: Enhanced Engagement Through Interactive and Creative Learning	Many responses described AI as: ● "Fun and interactive" ● Helping to "encourage pupils to speak" ● Making lessons "more interesting" Teachers also explained that AI stimulates creativity and helps them brainstorm speaking activities, design differentiated tasks, and create rubrics for speaking assessments.
2. What are the biggest challenges you face or expect when using AI tools?	Theme 1: Internet Connectivity and Device Limitations	The most dominant challenge was unstable or limited internet access, especially in rural schools. Teachers frequently mentioned: ● Poor WiFi connection ● Insufficient devices ● Expensive AI features
	Theme 2: Accuracy, Reliability, and AI Limitations	Teachers reported that AI: ● Sometimes provides incorrect or irrelevant information ● May misinterpret accents, especially children's voices ● Produces "robotic" or unnatural content ● may not always provide feedback that aligns with classroom expectations or CEFR requirements.
	Theme 3 Over-Reliance on AI and Reduced Human Interaction	Teachers expressed concern that excessive use of AI may cause pupils to: ● Become dependent on AI-generated content ● Lose creativity ● Hesitate during real conversations ● Show reduced human interaction
	Theme 4: Insufficient Training and Teacher Readiness	Teachers highlighted that: ● Some do not know how to use AI effectively ● Many must self-learn due to the lack of formal training ● Managing class discipline while using AI tools is challenging ● Time constraints and heavy workload make it difficult for some teachers to explore AI.

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	Theme 5: Ethical and Privacy Concerns	Several teachers were concerned about: ● Data privacy ● Safety issues with AI tools ● Younger pupils' inability to filter information
3. How can AI tools be improved to better support speaking practice in primary ESL classrooms?	Theme 1: Better Alignment with Curriculum and Learning Levels	Many teachers requested AI tools that: ● Align with the Malaysian CEFR curriculum ● Include content based on age-appropriate vocabulary and themes ● Provide tasks suitable for children's linguistic levels
	Theme 2: Improved Speech Recognition and Child-Friendly Interaction	Teachers suggested: ● More accurate pronunciation recognition for children ● More natural, human-like voices ● Warm, child-friendly interfaces ● Recognition of Malaysian or local accents
	Theme 3: More Interactive, Engaging, and Game-Based Features	Teachers recommended: ● Role-plays ● Storytelling ● Interactive games ● Real-life simulations
	Theme 4: Better Teacher Tools and Classroom Integration	Teachers wanted: ● Tools for tracking pupils' progress ● Customisable speaking tasks ● Offline modes for low-internet schools ● Free or low-cost AI options
4. Would you like to receive training or workshops on using AI for English teaching? Why or why not?	Theme 1: Strong Demand for AI Training	Many teachers expressed a willingness to attend workshops because training would help them: ● Use AI more effectively ● Integrate AI into lessons confidently ● Select appropriate tools ● Create engaging speaking activities

		• Interpret AI feedback
	Theme 2: Reasons for Hesitation	A minority of teachers said they did not want training due to: • Heavy workload • Time constraints • Preference for traditional teaching • Confidence in self-learning • Some felt they already understood the basics.
	Theme 3: Practical Expectations for Training	Teachers suggested that training should be: • Short and practical • Focused on classroom application • Relevant to primary pupils' needs • Supportive of responsible and ethical use

The thematic analysis revealed four key themes. First, teachers perceived AI as highly beneficial for supporting speaking practice, citing increased opportunities for practice beyond the classroom, immediate pronunciation and fluency feedback, reduced learner anxiety and more engaging, personalised learning experiences. Second, significant challenges were identified, including unstable internet access, limited device availability, concerns about the accuracy and reliability of AI feedback, data privacy risks and fears of pupils becoming overly reliant on AI at the expense of real human interaction. Third, teachers recommended several improvements such as better alignment with the CEFR-aligned Malaysian curriculum, child-friendly and culturally relevant content, enhanced speech recognition for young learners, interactive game-based speaking tasks, offline functionality and built-in tools for monitoring pupils' progress. Lastly, most teachers expressed strong interest in receiving AI-related training to improve their confidence and pedagogical effectiveness although a minority reported constraints such as workload, time limitations or a preference for traditional teaching approaches.

DISCUSSION

Table 6 Comparison of Past Studies and Current Study Findings

Past Study & Key Insight	**Alignment with Current study Findings**
Hidayah (2025) – AI provides instant, personalised pronunciation feedback	Teachers in the current study agreed AI offers instant feedback that helps pupils improve fluency and pronunciation.
Zhang (2024) – AI reduces speaking anxiety	Teachers observed that AI creates a low-pressure, judgment-free environment, especially for shy or low-confidence pupils.
Zou (2024) – AI enables anytime, anywhere practice and expands speaking exposure	Teachers reported that pupils can practise anywhere and anytime, increasing English exposure.
Alexis & Becky (2024) – AI's gamified features enhance engagement	Teachers described AI tools as fun, engaging and interactive, helping pupils participate more actively.

Hamayun et al. (2025) – AI supports differentiated learning	Teachers agreed AI provides personalised learning suited to pupils' individual needs.
An (2022) and Firdaus & Nawas (2024) – Teachers' digital literacy affects AI adoption	Teachers indicated they need more training and some feel unprepared or unfamiliar with AI tools.
Junaidi (2024) – Technical barriers limit technology use	Teachers identified unstable internet and limited devices as their biggest challenges.
Mudway (2025) – ASR misrecognition affects feedback accuracy	Teachers similarly reported inaccurate or robotic feedback, especially for young learners' voices.
Kotsis (2025) – Concerns about data privacy and overreliance	Teachers raised concerns about data privacy, safety and pupils over-relying on AI-generated responses.
Zulkarnain & Yunus (2023) – Teachers' acceptance determines success of AI integration	Current findings show teachers are positive overall but implementation remains constrained by readiness and infrastructure.
Sulaiman (2024) – Insufficient training limits effective digital integration	Teachers strongly expressed the need for practical, hands-on AI training tailored to classroom needs.
Vincent (2025) – Connectivity and device issues remain major barriers	This study confirms that internet and device limitations are among the most significant obstacles.
Sangeetha (2025) and Jamaludin (2025) – AI improves oral fluency and supports speaking practice	Teachers agreed AI enhances fluency and supplements classroom speaking practice effectively.

Positive Perceptions of AI for Enhancing Speaking Skills

The findings of this study provide a comprehensive and nuanced understanding of primary ESL teachers' perceptions of using Artificial Intelligence (AI) tools to support speaking practice. By integrating quantitative data with qualitative insights, the discussion highlights both the strong pedagogical potential of AI and the practical realities that influence its successful implementation in the classroom. Overall, teachers expressed highly positive views regarding AI's ability to enhance speaking instruction. The consistently high mean scores (4.0–4.4) indicate strong agreement that AI offers meaningful support for oral language development. Teachers appreciated that AI tools provide opportunities for repeated speaking practice, instant and personalised feedback, and adaptive learning experiences that help accommodate varying proficiency levels. This aligns with the Perceived Usefulness (PU) construct in the Technology Acceptance Model (TAM), suggesting that teachers see AI as a credible and effective tool for improving pronunciation, fluency and confidence. Qualitative responses further strengthened this finding with teachers emphasising that AI enables pupils to practise "anytime and anywhere" and offers corrective input that is often difficult to provide consistently in large classrooms. A second important finding is AI's role in reducing speaking anxiety. Teachers noted that pupils feel more comfortable practising English in low-pressure, judgment-free environments created by AI applications. This is particularly beneficial for shy or lower-proficiency learners who may hesitate to speak in front of peers. These perceptions are consistent with previous research showing that AI-based speaking tools foster enjoyment, lower communication apprehension, and encourage more active participation. Teachers therefore recognised AI as a supportive avenue for building confidence and encouraging risk-taking in oral communication.

Challenges Affecting AI Integration

However, despite these advantages, teachers also reported significant challenges that could hinder the effective integration of AI in speaking lessons. Technical issues such as unstable internet connection, insufficient digital devices and frequent disruptions were among the most commonly cited barriers. These concerns, reflected in the high mean scores for limitation items (4.2–4.6), are especially pronounced in rural and under-resourced schools.

Such barriers directly affect teachers' Perceived Ease of Use (PEOU) and in turn reduce their overall intention to adopt AI tools. Teachers also raised pedagogical concerns related to the accuracy and reliability of AI-generated feedback. Many noted that AI tools occasionally misinterpret young children's voices, dialects or accent features, resulting in inaccurate or overly robotic feedback. These issues align with earlier research indicating that AI speech recognition systems often struggle with the diverse linguistic characteristics of younger learners. Ethical and safety-related concerns also emerged strongly in the teachers' responses. Participants worried about data privacy, exposure to inappropriate content, and the possibility that pupils may rely too heavily on AI-generated responses, compromising their creativity and real communicative interactions. These concerns highlight the need for clear guidelines and responsible implementation practices when integrating AI into primary education.

Teachers' Suggestions for Improving AI Tools

Teachers also provided practical suggestions for improving AI tools to better support speaking practice. Many emphasised the need for tools that align more closely with Malaysian CEFR-speaking descriptors and include culturally relevant, age-appropriate content. They also recommended enhancing speech recognition accuracy for children, incorporating child-friendly voices, and expanding interactive features such as storytelling, games, and role-play activities. Requests for offline functionality further highlight the importance of ensuring equitable access in low-bandwidth environments. Finally, the strong willingness among teachers to attend AI-related training underscores the need for sustained professional development. Teachers recognised that training could help them integrate AI more effectively, interpret feedback appropriately, and design creative speaking activities. However, a minority expressed reluctance due to workload and time constraints, suggesting that future training should be flexible, practical, and directly applicable to classroom realities.

Summary

Overall, the findings illustrate a dual reality: while teachers are optimistic about the transformative potential of AI in supporting speaking development, they remain cautious about the structural, instructional and ethical challenges that accompany its use. A balanced and strategic approach focused on infrastructure readiness, teacher training, curriculum alignment and clear guidelines is therefore crucial for ensuring meaningful and sustainable AI integration in Malaysian primary ESL classrooms.

CONCLUSION

This study showed that primary ESL teachers generally view AI tools as valuable for enhancing pupils' speaking practice particularly through instant feedback, increased speaking exposure, reduced anxiety and more engaging, personalised learning experiences. At the same time, teachers identified notable challenges such as unstable internet connectivity, limited device availability, inaccurate speech recognition for young learners, insufficient training and concerns about privacy and overreliance on AI-generated responses. These findings highlight that while AI holds strong potential to support speaking development in Malaysian primary schools, its successful implementation depends on overcoming the technological, pedagogical and ethical barriers that teachers continue to face.

RECOMMENDATIONS

To ensure effective integration of AI in primary ESL classrooms, schools should strengthen digital infrastructure by improving internet stability and increasing access to devices especially in underserved areas. Developers should refine AI tools to better recognise children's voices, incorporate Malaysian English accents and align content with CEFR requirements while offering offline modes for low-connectivity settings. Teachers would benefit from practical, hands-on professional development focused on AI-supported speaking instruction, data privacy and responsible use. Clear school-level guidelines should also be established to balance technology use with meaningful human interaction and prevent overreliance on AI.

Future Research

Future research could broaden the sample to include schools across different Malaysian states to enhance the generalisability of findings, particularly in rural areas with varying digital readiness. Experimental and longitudinal studies are recommended to measure AI's impact on pupils' oral fluency, pronunciation accuracy and speaking confidence over time. Additionally, studies exploring pupils' perspectives, teachers' digital readiness and the design of CEFR-aligned AI speaking tasks would provide deeper insights into effective AI integration. Research on ethical and privacy issues is also needed to ensure safe and responsible use of AI in primary education.

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