The Role of AI in Supporting English Language Learning in Technical and Vocational Education

Melissa Khor Suan Chin[1*], Che' Fadhilah Che' Lah[2]

[1,2]*General Studies Department, Politeknik Kota Bharu, KM24, Kok Lanas, 16450 Ketereh, Kelantan, Malaysia*

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ABSTRACT

This study examined the role of Artificial Intelligence (AI) tools in supporting English language learning among students at Politeknik Kota Bharu, a Technical and Vocational Education and Training (TVET) institution in Malaysia. The objective was to determine how AI contributes to learning and which aspects of proficiency benefit most. A cross-sectional survey was conducted with 344 students from four departments, who had prior exposure to AI tools. Data were collected using a 13-item questionnaire covering exercises, assignments, and presentations. The instrument was reviewed by experts, piloted, and validated through factor analysis, with subscale reliabilities ranging from .88 to .91. Items were rated on a five-point Likert scale. Descriptive analysis shows that assignments yielded the highest benefit (M = 4.00, 95% CI [3.91, 4.09]), followed by exercises (M = 3.94, 95% CI [3.85, 4.03]) and presentations (M = 3.94, 95% CI [3.86, 4.02]). Inferential tests indicated that Semester 1 students reported greater grammar support in exercises (F (2, 341) = 4.26, p < .05, η² = .04), while female students perceived stronger pronunciation support in presentations (t (342) = 2.03, p < .05, d = 0.22). A repeated-measures ANOVA confirmed that assignments were rated higher than the other domains (p < .05, d ≈ 0.28). The findings suggest that AI tools complement English instruction in TVET, particularly in writing tasks, while also aiding comprehension and oral communication. As a single-site, self-report study, generalisation remains limited, underscoring the need for further research across institutions.

1. INTRODUCTION

The integration of Artificial Intelligence (AI) into Technical and Vocational Education and Training (TVET) is transforming English language learning by offering personalised and adaptive experiences. Technologies such as intelligent tutoring systems, adaptive algorithms, and virtual simulations tailor instruction to individual learning styles, enhancing engagement and improving English proficiency (Ghafar et al., 2023). This represents a significant shift in pedagogical approaches within technical and vocational settings, particularly where students face challenges in mastering English as a second language.

In Malaysia, this transformation aligns with national efforts to future-proof the workforce. The government's allocation of RM6.8 billion in Budget 2024 reflects its commitment to embedding AI in education and training (Sinar Daily Reporter, 2023), and the Prime Minister has emphasised AI's role in

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preparing graduates for a digital economy (Bernama, 2024). Within this agenda, strengthening English communication skills in TVET is a strategic priority, as proficiency in English is essential for employability in technology-driven industries. At Politeknik Kota Bharu, many students continue to struggle with English due to limited exposure, low confidence, and the lack of personalised support, which affect their academic performance and readiness for professional communication.

For the purpose of this study, AI tools are defined operationally as applications powered by artificial intelligence that assist English language learning through natural language processing, automated feedback, adaptive practice, and speech recognition. Examples include chatbots for conversational practice, grammar and writing assistants, and pronunciation feedback applications. These tools create opportunities for real-time feedback, individualis

ed learning paths, and autonomous practice—features that conventional classroom environments often cannot provide (Jian, 2023; Mahmoud & Sørensen, 2024).

The integration of AI into English instruction can be framed through several theoretical perspectives. From the Second Language Acquisition (SLA) perspective, AI contributes to learning by delivering immediate corrective feedback and facilitating repetitive, meaningful practice (Zhang, 2021). Through the lens of learner autonomy, AI fosters independent and self-paced learning that allows students to regulate their own progress, a vital element in lifelong learning (Yong-juan, 2020). Finally, adoption can be explained through models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which highlight the importance of perceived usefulness, ease of use, and social influence in shaping how students and educators embrace AI tools (Kohnke et al., 2023; Walter, 2024).

Although the benefits of AI in supporting English language learning have been acknowledged (Bayly-Castaneda et al., 2024; Amdan et al., 2024), its practical adoption in Malaysian TVET institutions remains limited. Students at Politeknik Kota Bharu, for instance, face foundational language challenges despite the availability of digital tools. Previous studies have demonstrated that AI can enhance comprehension, grammar, and writing efficiency, as well as improve pronunciation and confidence in oral communication (Dey, 2024; Lampou, 2023). Yet, empirical evidence specific to polytechnic settings in Malaysia is still scarce, particularly regarding how AI supports everyday academic tasks such as exercises, assignments, and presentations.

Given the increasing demand for English-proficient and digitally literate graduates, it is critical to examine how AI can be strategically embedded into English learning within TVET. This study addresses this urgent need by investigating the specific contributions of AI tools to improving students' English performance in practical academic activities, thereby filling an important empirical gap in the Malaysian polytechnic context. Thus, the research questions for this study can be expressed as the following:

1. How can Artificial Intelligence (AI) help in learning English at Politeknik Kota Bharu?
2. Which aspect of English language learning does Artificial Intelligence (AI) have the greatest impact on among students at Politeknik Kota Bharu?

2. LITERATURE REVIEW

2.1 The Role of Artificial Intelligence in Enhancing English Language Learning

Artificial Intelligence (AI) has emerged as a transformative force in the field of education, and its impact on English language learning is particularly noteworthy. With rapid advancements in AI capabilities, especially in Natural Language Processing (NLP), the potential to create more personalised, engaging, and effective learning experiences has significantly increased. NLP enables AI systems to analyse, interpret, and generate human language, thus supporting a wide range of instructional tasks such as reading comprehension, writing assistance, and spoken interaction (Zhang, 2021). This development is especially

valuable in English language learning, where consistent exposure to the target language and individualised feedback are crucial to learner success. For institutions such as Politeknik Kota Bharu, where English is taught as a second language to students in technical and vocational disciplines, AI presents a promising opportunity to enhance instruction and support diverse learner needs.

One of the most significant ways AI has revolutionised English language education is through intelligent learning platforms. These platforms utilise AI algorithms to assess learners' strengths and weaknesses, recommend learning pathways, and deliver personalised content in real time. For instance, AI can track a student's progress across vocabulary, grammar, and writing skills, and automatically generate exercises targeted at areas requiring improvement. This level of individualisation is often difficult to achieve in traditional classrooms, especially when educators are managing large numbers of students. By enabling a more tailored approach, AI helps students at Politeknik Kota Bharu—many of whom may struggle with language proficiency—to learn at their own pace and reinforce their understanding in a supportive, non-judgmental environment (Yong-juan, 2020).

Moreover, AI-powered applications offer opportunities for authentic language practice beyond classroom hours. Tools like virtual speaking assistants, interactive chatbots, and pronunciation coaches provide learners with real-time interaction in English, simulating conversational experiences that are essential for developing communicative competence. These applications allow students to practice speaking and listening skills in an engaging, self-paced manner while receiving immediate corrective feedback. This is especially beneficial for TVET learners, who often require language skills aligned with real-world technical communication. Yong-juan (2020) highlighted that such interactive systems not only build students' confidence in using English but also foster greater learner autonomy—an essential component of lifelong learning in a rapidly evolving technological landscape.

In summary, the integration of AI in English language learning offers a variety of pedagogical advantages that go beyond the scope of conventional teaching. It creates opportunities for learners to receive continuous support, practice language skills in meaningful contexts, and receive feedback that is both immediate and customised. For TVET institutions like Politeknik Kota Bharu, where students often enter with varied levels of English proficiency and learning preferences, AI technologies provide a practical and scalable solution to language instruction. By enhancing accessibility, interaction, and personalisation, AI can significantly improve students' engagement and comprehension, thereby equipping them with essential communication skills needed for academic success and future employment in technical fields.

2.2 Challenges and Considerations in Integrating AI for English Language Learning

While the benefits of AI integration in English language learning are evident, several challenges must be acknowledged to ensure its successful implementation, especially within Technical and Vocational Education and Training (TVET) institutions such as Politeknik Kota Bharu. One major concern is the digital divide, which represents a multifaceted challenge that extends beyond mere access to the internet and devices, encompassing disparities in digital literacy and the ability to effectively utilise technology for learning and personal development (Resta et al., 2018). Although AI tools can personalise and enhance learning experiences, their effectiveness is contingent on reliable access to technological infrastructure. In rural or economically constrained areas, students may lack access to high-speed internet or devices capable of running AI-powered applications, which creates disparities in learning opportunities. This limitation is particularly critical in institutions like Politeknik Kota Bharu, where students may come from varied socio-economic backgrounds, leading to unequal exposure to digital learning tools.

In addition to student access, the successful integration of Artificial Intelligence into English language classrooms within TVET institutions is also hindered by the readiness and confidence of educators. Many lecturers, particularly in English language departments, may not possess the formal training or digital competency required to adopt AI-driven teaching methods effectively (Zhang, 2021; Walter, 2024). The lack of professional development opportunities specifically targeted toward AI literacy has further widened

the gap between technology potential and classroom reality. A crucial factor influencing the adoption of AI in education is the perception and attitude of educators themselves. Without adequate support and training, even the most advanced AI tools risk being underutilised or misapplied in classroom settings (Kohnke et al., 2023). Hence, empowering educators with the right skills and mindset is essential to facilitate meaningful integration of AI in language learning.

Moreover, the integration of AI tools in the TVET context must be aligned with the existing curriculum and assessment practices. In many cases, English language instruction in TVET institutions is still heavily reliant on traditional teaching approaches and examination-driven assessments, leaving limited room for innovation. AI technologies that emphasise adaptive learning, real-time feedback, and learner autonomy often challenge the rigidity of conventional academic frameworks. As argued by Suparyati et al. (2023), TVET plays a critical role in building AI competencies among educators, students, and the workforce, yet these technologies must be strategically aligned with national education policies and institutional goals. At Politeknik Kota Bharu, where teaching outcomes are closely linked to practical skill development and employability, incorporating AI into language instruction requires careful planning to ensure it complements rather than disrupts existing pedagogical structures.

Lastly, the financial and infrastructural constraints faced by many TVET institutions pose another significant barrier to AI adoption. While high-income institutions may experiment with AI platforms, resource-limited settings struggle with outdated hardware, insufficient bandwidth, and minimal access to licensed software. Overcoming these barriers requires not only funding but also strategic partnerships and sustainable implementation models. Dey (2024) emphasised that addressing the challenges of AI integration in education involves multifaceted strategies, including well-structured teacher training programs focused on AI-enhanced pedagogy and proactive investment in technological infrastructure. For institutions like Politeknik Kota Bharu, this means developing a long-term plan that includes capacity building, resource allocation, and curriculum innovation to fully unlock the potential of AI in supporting English language proficiency among students.

3. RESEARCH METHODOLOGY

This study employed a quantitative research design using a descriptive survey method to investigate the role of Artificial Intelligence (AI) tools in English language learning among TVET students at Politeknik Kota Bharu. The structured survey approach enabled efficient data collection from a large sample while ensuring comparability across respondents.

3.1 Research Sample

The sampling process was carried out in two stages. First, a purposive sampling strategy was applied to identify students who had prior exposure to AI tools in English learning, such as grammar checkers, translation apps, chatbots, or speech recognition platforms, either inside or outside the classroom. Exposure was verified through a short screening item at the beginning of the questionnaire asking respondents to confirm and specify the type of AI tools they had used. Students who indicated no experience with AI were excluded from the sample.

Second, within this purposive frame, simple random sampling was conducted across four main academic departments—Commerce, Civil Engineering, Electrical Engineering, and Mechanical Engineering—to ensure representativeness. A total of 420 students were invited via class WhatsApp groups. Of these, 344 complete responses were returned, yielding a response rate of 81.9%. The final sample comprised 151 students (43.9%) from the Commerce Department, 123 students (35.7%) from Civil Engineering, 27 students (7.8%) from Electrical Engineering, and 43 students (12.5%) from Mechanical Engineering.
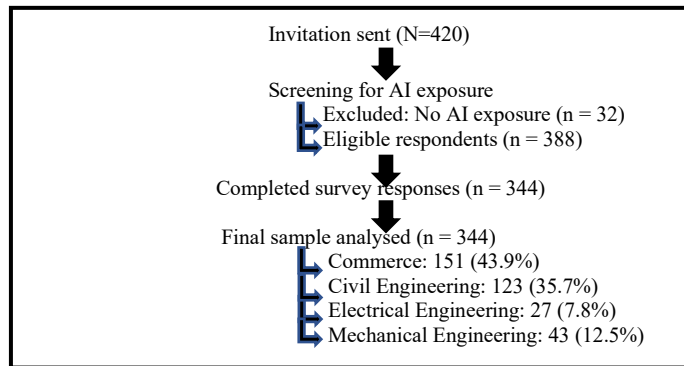
Invitation sent (N=420)

Screening for AI exposure
  Excluded: No AI exposure (n = 32)
  Eligible respondents (n = 388)

Completed survey responses (n = 344)

Final sample analysed (n = 344)
  Commerce: 151 (43.9%)
  Civil Engineering: 123 (35.7%)
  Electrical Engineering: 27 (7.8%)
  Mechanical Engineering: 43 (12.5%)

Fig. 1. Sampling flow diagram

Demographic distributions by department, gender, and semester are shown in Figures 2–4.
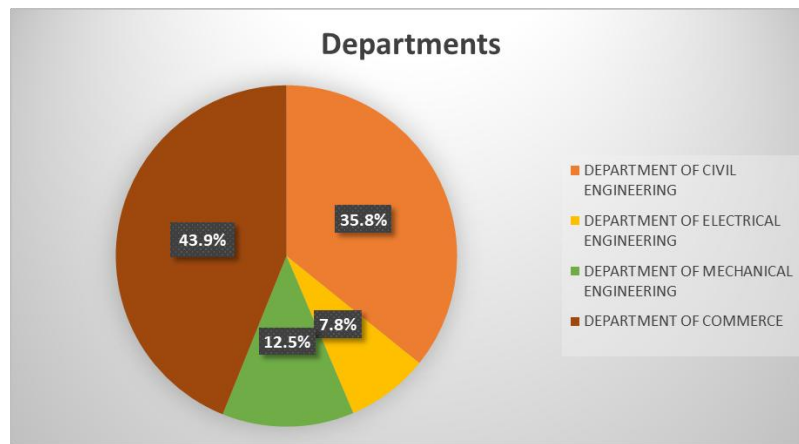

Fig. 2. Demographic information of respondents (departments)

In terms of gender, the distribution was fairly balanced, with 173 male students (50.3%) and 171 female students (49.7%), as shown in Figure 3.
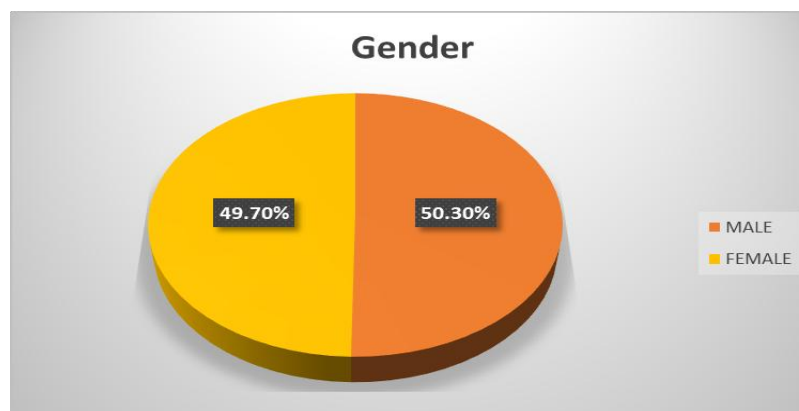

Fig. 3. Demographic information of respondents (gender)

Regarding academic semester, 202 students (58.7%) were in Semester 1, 55 students (16%) in Semester 3, and 86 students (25%) in Semester 5. This distribution is depicted in Figure 4.
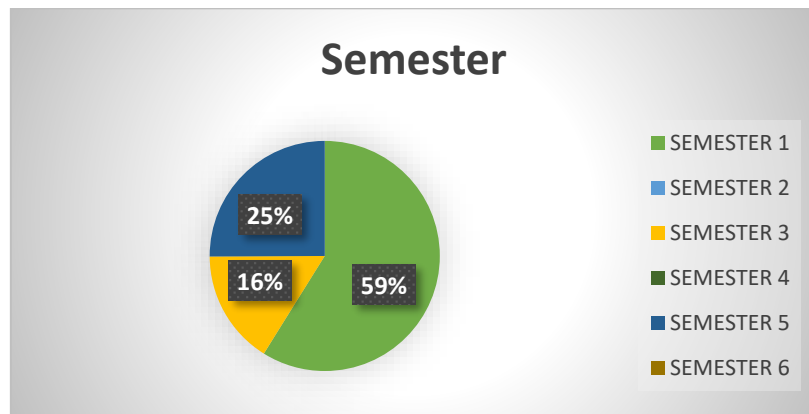

Fig. 4. Demographic information of respondents (Semester)

3.2 Instrument Development and Validity

The research instrument was a structured questionnaire consisting of two sections:

(i)   Part A-demographic data (department, gender, semester).

(ii) Part B-13 items on AI support for English language skills in exercises, assignments, and presentations.

Item development was guided by prior studies on AI in language learning (Zhang, 2021; Yong-juan, 2020; Ghafar et al., 2023) and adapted to the Malaysian TVET context. Items were drafted by the researchers and reviewed by three experts in English language education and educational technology to establish content validity. A pilot test was conducted with 30 students from another polytechnic to refine item wording and clarity. Based on pilot feedback, overlapping items were trimmed, and ambiguous wording was revised.

Construct validity was examined using Exploratory Factor Analysis (EFA). Results supported a three-factor structure corresponding to exercises, assignments, and presentations, consistent with the theoretical framework. To strengthen validity, a Confirmatory Factor Analysis (CFA) was also conducted, showing acceptable model fit indices (χ^2/df = 2.11, CFI = 0.94, RMSEA = 0.05).

Reliability was assessed using Cronbach's Alpha for each subscale:

(i) Exercises (4 items): α = .89

(ii) Assignments (5 items): α = .91

(iii) Presentations (4 items): α = .88

These values indicate strong internal consistency while avoiding redundancy compared to reporting only a single global alpha.

3.3 Data Collection Procedures

Data collection was conducted over a three-week period, using Google Forms. The survey link was distributed via course messaging groups, with reminders issued weekly to improve participation.

Respondents were able to complete the survey on personal devices either at home or on campus. The online format ensured wider reach, efficiency, and anonymity.

3.4 Ethical Considerations

Ethical approval for this study was obtained from the Centre for Research and Innovation Unit of Politeknik Kota Bharu. Participation was voluntary, and informed consent was obtained from all respondents prior to data collection. The consent form explained the study's objectives, the voluntary nature of participation, and the guarantee of confidentiality. No personally identifying information was collected, and all responses were used solely for academic research.

3.5 Limitations

A key limitation of this methodology is that the sample was restricted to a single institution, which may limit generalisability to other TVET contexts. While random sampling was applied within departments, the findings may not fully represent the experiences of students across Malaysia. Future studies should expand to multiple polytechnics and adopt longitudinal designs to validate the effects of AI integration more broadly.

4. RESEARCH FINDINGS

4.1 The Role of Artificial Intelligence in Supporting English Language Learning

The findings of this study demonstrate that the integration of Artificial Intelligence (AI) tools positively influences students' ability to learn English across three main areas: exercises, assignments, and presentations. In addition to descriptive statistics, inferential analyses were conducted to strengthen the interpretation of results.

4.1.1 English Exercises

Students reported that AI tools improved their comprehension of topics, vocabulary, and grammar. As shown in Table 2, mean scores ranged between 3.92 and 3.99, indicating generally positive perceptions.

To assess whether these perceptions differed across subgroups, one-way ANOVA tests were performed by department and semester. Results revealed significant differences by semester in perceived improvement in grammar, $F(2, 341) = 4.26$, $p < .05$, with Semester 1 students reporting greater gains compared to Semester 5. Gender differences were not statistically significant. Effect sizes ($\eta^2 = .04$) suggest a small to moderate effect of semester level on exercise-related benefits.

Table 2. Students' Perceptions of AI Support in Completing Exercises (N = 344)

Item	Mean	Std. Deviation	95% CI
S1. Understand the topics	3.92	0.80	[3.83, 4.01]
S2. Understand the meaning of words and phrases	3.99	0.80	[3.90, 4.08]
S3. More confident in answering questions	3.93	0..85	[3.84, 4.02]
S4 Improves grammar	3.94	0.83	[3.85, 4.03]
EXERCISES	3.94	0.74	

Valid N (listwise)
Note. Responses measured on 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). CI = confidence interval

4.1.2 English Assignments

AI had the strongest impact on assignments, with students reporting fewer mistakes, improved sentence structure, and faster completion. The overall mean (M = 4.00, SD = 0.76) was higher than for exercises or presentations.

A multivariate ANOVA (MANOVA) showed that assignment-related benefits differed significantly across departments, Wilks' Λ = .93, F (15, 825) = 1.78, p < .05. Post-hoc comparisons indicated that Commerce students scored higher on "developing ideas more easily" (p < .01, Cohen's d = 0.45) compared to Engineering students.

Table 3. Students' Perceptions of AI Support in Completing Assignments (N = 344)

	Mean	Std. Deviation	95% CI
S5 Reduce mistakes in writing essays	3.97	0.85	[3.88, 4.06]
S6 Easier to organise the correct sentence structure	3.99	0.82	[3.90, 4.08]
S7 Complete assignment faster	4.00	0.87	[3.91, 4.09]
S8 Develop ideas more easily	4.04	0.82	[3.95, 4.13]
S9 Overcome difficulties in understanding tasks instructions	4.01	0.84	[3.92, 4.10]
ASSIGNMENT	4.00	0.76	

Valid N (listwise)

Note. Likert scale 1–5; higher scores indicate greater perceived benefit.

4.1.3 English Presentations

Students also reported improvements in presentation skills (M = 3.94, SD = 0.77), particularly in planning content and organising visuals. AI-assisted pronunciation feedback was noted as beneficial, though slightly lower in mean ratings compared to assignments.

Independent-samples t-tests showed that female students rated AI's role in improving pronunciation significantly higher than males, t (342) = 2.03, p < .05, with a small effect size (d = 0.22).

Table 4. Students' Perceptions of AI Support in Presentations (N = 344)

	Mean	Std. Deviation	95% CI
S10 Build confidence to present	3.92	0.86	[3.83, 4.01]
S11 Easier to plan and organise the content	3.98	0.82	[3.89, 4.07]
S12 Provide additional visuals or materials	3.95	0.84	[3.86, 4.04]
S13 Improve intonation and pronunciation	3.91	0.86	[3.82, 4.00]
PRESENTATION	3.94	0.77	

Valid N (listwise)

Note. 5-point Likert scale

4.2 Comparative Impact of AI on Different Aspects of English Language Learning

A repeated-measures ANOVA was conducted to compare overall means across the three categories: exercises (M = 3.94), assignments (M = 4.00), and presentations (M = 3.94). The differences were statistically significant, F (2, 342) = 6.14, p < .01, with pairwise comparisons showing that assignments scored significantly higher than both exercises (p < .05, d = 0.28) and presentations (p < .05, d = 0.26).

These results confirm that while AI tools benefit all aspects of language learning, their strongest impact is on written assignments. This aligns with prior research showing that AI enhances writing organisation, accuracy, and idea development (Faisal & Rafiq, 2024).

5. DISCUSSION

The findings from this study reinforce the transformative potential of Artificial Intelligence (AI) in supporting English language learning within Technical and Vocational Education and Training (TVET) institutions, particularly at Politeknik Kota Bharu. Both descriptive and inferential analyses indicate that AI tools contribute meaningfully to students' development in exercises, assignments, and presentations, though the degree of benefit varies by skill area and student subgroup.

The most substantial impact was observed in assignment completion, where the repeated-measures ANOVA confirmed that mean scores were significantly higher than for exercises and presentations. This suggests that AI tools are especially effective in enhancing writing-related skills, including generating ideas, reducing grammatical errors, and organising sentence structures. These results align with Jian (2023), who emphasised that AI-driven tools scaffold independent learning by offering personalised writing support. The relatively larger effect sizes for assignment-related improvements also highlight the capacity of AI applications to aid in higher-order cognitive and linguistic processes such as critical thinking and structured composition.

For exercises, AI tools were reported to strengthen vocabulary, grammar, and comprehension. Inferential analysis showed that Semester 1 students benefited more from grammar-related support than their Semester 5 peers, suggesting that AI is particularly effective in addressing foundational gaps early in students' academic progression. This aligns with Mahmoud and Sørensen (2024), who found that AI adapts to learners' prior knowledge levels, providing individualised support that may taper off as students advance. Such patterns highlight AI's potential role in reducing initial barriers to English acquisition in TVET contexts.

For presentations, students noted improvements in planning, confidence, and pronunciation. Gender-based analyses revealed that female students perceived stronger benefits from AI pronunciation feedback compared to male students. Although the effect size was small, this suggests that certain learner groups may engage differently with AI tools depending on confidence, willingness to practice, or familiarity with speech technologies. This finding resonates with Amdan et al. (2024), who reported that AI-enhanced platforms such as speech recognition apps create low-stakes environments where learners can rehearse oral communication without fear of judgment.

The results also carry important theoretical implications. From a Second Language Acquisition (SLA) perspective, the observed improvements reflect AI's role in delivering immediate corrective feedback and repetitive practice—mechanisms shown to accelerate grammar and pronunciation learning (Zhang, 2021). From a learner autonomy standpoint, students' ability to complete assignments more efficiently and confidently suggests that AI tools encourage self-directed engagement, enabling learners to manage their pace and focus (Yong-juan, 2020). Finally, patterns of adoption across subgroups are consistent with the Technology Acceptance Model (TAM) and UTAUT, in which perceptions of usefulness and ease of use shape uptake (Kohnke et al., 2023; Walter, 2024). Students who found AI helpful in specific skill areas are more likely to integrate it into their learning routines.

Despite these positive outcomes, the study also indicates that the benefits of AI are not evenly distributed. While assignment-related tasks benefited most, oral communication skills showed smaller gains, suggesting that speaking and listening may require more targeted AI interventions. These findings echo Lampou (2023) and Dey (2024), who cautioned that infrastructural limitations, uneven digital literacy, and curriculum misalignment can constrain the effectiveness of AI in education. For TVET institutions such as Politeknik Kota Bharu, addressing these barriers will be essential to maximise AI's contribution to language learning.

Overall, the discussion confirms that AI tools not only enhance academic performance but also foster autonomy and confidence among learners. By strengthening foundational skills, improving assignment writing, and supporting oral presentations, AI holds promise for bridging English proficiency gaps in Malaysia's TVET sector. The evidence suggests that when aligned with pedagogical strategies and supported by infrastructure, AI integration can equip students with the communicative and digital competencies needed for employability in a globalised workforce.

6. CONCLUSION

This study investigated the role of Artificial Intelligence (AI) technology in supporting English language learning among students at Politeknik Kota Bharu, a representative institution within Malaysia's Technical and Vocational Education and Training (TVET) sector. The findings demonstrate that AI tools enhance students' English proficiency in meaningful ways across exercises, assignments, and presentations. Among these, assignments showed the strongest improvement, where students reported fewer mistakes, better sentence organisation, and more efficient idea development. Inferential results confirmed that assignment-related benefits were significantly higher than those for exercises and presentations, underscoring AI's particular value in supporting extended writing tasks.

Positive outcomes were also observed in English exercises, where AI contributed to vocabulary building, grammar improvement, and comprehension. Differences by semester indicated that Semester 1 students benefited more strongly from grammar-related support, suggesting that AI is particularly effective in addressing early proficiency gaps. For presentations, AI was found to improve planning, confidence, and pronunciation, with female students reporting higher gains in pronunciation compared to male peers. These subgroup findings highlight how AI tools may affect learners differently depending on their background and stage of study.

Taken together, the results underscore AI's potential as a transformative tool for language education in TVET. By delivering personalised feedback, supporting learner autonomy, and fostering confidence, AI helps address the linguistic challenges faced by students with diverse educational experiences. This reflects Malaysia's broader digital transformation agenda, where technology adoption is central to workforce readiness and employability.

Nevertheless, challenges remain. Effective integration of AI requires reliable infrastructure, digital literacy among both students and educators, and alignment with curriculum outcomes (Ng et al., 2023; Dey, 2024). Without addressing these barriers, the benefits of AI may be unevenly distributed, particularly in oral communication skills where smaller gains are observed.

In light of these findings, several recommendations are proposed. Policymakers should prioritise investments in digital infrastructure within TVET institutions, particularly in underserved regions. Continuous professional development on AI literacy and pedagogy should be provided for educators to ensure effective classroom adoption. Curriculum developers should design AI-enhanced modules that complement national standards while emphasising practical language use relevant to industry contexts. Finally, a collaborative, multi-stakeholder approach—engaging government agencies, educators, technologists, and learners—is essential for sustainable implementation.

In conclusion, this study provides empirical evidence that AI tools can enhance English learning in Malaysian TVET institutions, especially in written assignments, while also contributing to foundational skills and oral communication. When strategically implemented, AI can strengthen communicative competence, foster learner autonomy, and equip graduates with the digital readiness required for a globalized workforce.

CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

AUTHORS' CONTRIBUTIONS

Melissa Khor Suan Chin led the conceptualisation, design of the study, data collection, data analysis, and manuscript writing. She also coordinated the overall research process and interpretation of findings. Che' Fadhilah binti Che' Lah contributed to the development and validation of the research instrument, and review of the manuscript. Both authors read and approved the final version of the paper.

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About the Authors

Melissa Khor Suan Chin is a lecturer at Politeknik Kota Bharu and holds a Master's degree in Applied Linguistics. Her expertise lies in English language education, research, and pedagogical innovation, with strong involvement in academic conferences, scholarly publications, and community engagement initiatives. Her work contributes significantly to advancing teaching and learning in Technical and Vocational Education. She can be contacted via email at melissa@pkb.edu.my.

Che' Fadhilah binti Che' Lah is a lecturer at Politeknik Kota Bharu with a background in English Literature and Education. She teaches Technical and Communicative English and actively engages in academic development, conferences, professional training, and community programmes. Her contributions focus on enhancing English language education within the Technical and Vocational Education and Training sector. She can be reached at chefadhilah@pkb.edu.my.