Proceedings of Forum for University Scholars in Interdisciplinary Opportunities and Networking
Graduate School, Universitas Terbuka
https://conference.ut.ac.id/index.php/fusion

Speaking Up with AI: Empowering Vocational Students' English Fluency and Motivation through ELSA

Wahyudin[a], Bachtiar[b], Aminudin Zuhairi[c]
[a]Universitas Terbuka, Jawa Barat, Indonesia, wahyu.dinnn1994@gmail.com
[b]Universitas Terbuka, Pondok Cabe, Indonesia, bachtiar_nur@ecampus.ut.ac.id
[c]Universitas Terbuka, Pondok Cabe, Indonesia, aminz@ecampus.ut.ac.id

Correspondence: wahyu.dinnn1994@gmail.com

Abstract
Grounded in Communicative Language Teaching, Sociocultural Theory, and Self-Determination Theory, this study investigates the role of AI-mediated dialogue in enhancing vocational students' speaking proficiency and motivation. Oral English competence is a critical employability skill in the era of globalization and Industry 4.0, yet Indonesian vocational learners often struggle with fluency, pronunciation, and speaking confidence. To address this issue, this study integrated ELSA, a mobile-based AI speaking application, into vocational English instruction. The research aimed to examine the effectiveness of ELSA in improving speaking performance, explore changes in student motivation, and identify pedagogical and infrastructural challenges. A mixed-methods design was employed involving 30 eleventh-grade vocational students in Garut district. Quantitative data were collected through Likert-scale questionnaires, while qualitative data were obtained from classroom observations and semi-structured interviews. The findings revealed significant improvements in fluency, pronunciation accuracy, and speaking confidence. Students demonstrated heightened motivation, increased self-regulated practice, and reduced speaking anxiety, attributed to ELSA's real-time feedback and gamified features. However, challenges related to internet connectivity, limited device access, and restrictions of the free application version were identified, necessitating teacher mediation and institutional support. This study highlights the pedagogical potential of AI-powered speaking tools to bridge classroom instruction and workplace communication demands and emphasizes the need for blended pedagogical strategies and adequate infrastructure to ensure equitable and sustainable AI integration in vocational education.

Keywords:
AI-assisted learning,
ELSA,
Speaking fluency,
Motivation,
Vocational education

1. Introduction

In the era of globalization and rapid technological advancement, English has become an indispensable lingua franca for international communication, professional mobility, and economic participation. Spoken English proficiency is increasingly recognized as a critical employability skill, particularly for vocational high school graduates who are expected to enter the workforce immediately after graduation. Within the ASEAN Economic Community and the Industry 4.0 landscape, oral communication competence is no longer an optional attribute but a prerequisite for workplace readiness and cross-cultural collaboration (Crystal, 2020; Kirkpatrick, 2021; Gusrianto & Iswahyuni,

2023). This global demand necessitates a shift in vocational education from grammar-oriented instruction toward communicative, task-based pedagogies that mirror authentic workplace communication practices.

In Indonesia, vocational high schools (Sekolah Menengah Kejuruan/SMK) play a strategic role in preparing technically skilled graduates equipped with essential soft skills, including English communication (Gani et al., 2025; Kemendikbudristek, 2022). However, Indonesia's ranking of 82nd out of 113 countries in the EF English Proficiency Index (2023) indicates persistently low national English competence. This issue is particularly critical for vocational graduates, whose future industries, such as hospitality, tourism, agriculture, and technical services, require direct oral interaction in English (Zhai & Wibowo, 2023). Despite curricular mandates emphasizing communicative competence, classroom practices often remain exam-oriented, with a disproportionate focus on reading and writing, resulting in underdeveloped speaking skills (Widyasari et al., 2023).

Speaking is widely acknowledged as one of the most challenging skills for EFL learners, especially in contexts with limited exposure to English outside the classroom. In many SMKs, students receive only two to four hours of English instruction per week, often dominated by controlled drills or scripted dialogues with limited opportunities for spontaneous interaction. Affective factors, including anxiety, fear of making mistakes, and low self-confidence, further inhibit students' oral participation (Wahyudin et al., 2025; Hashemifardnia et al., 2023). These challenges are compounded by limited resources, insufficient teacher training in communicative pedagogy, and the absence of proficient English-speaking models, leaving many vocational graduates below the communicative competence required in professional settings.

Recent advances in digital technology, particularly artificial intelligence (AI), offer promising opportunities to address these pedagogical constraints. Within Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL) frameworks, AI-based tools can provide authentic interaction, immediate corrective feedback, and personalized learning experiences beyond classroom boundaries (Burston, 2022; Nguyen & Vu, 2022). One such tool, ELSA (English Language Speech Assistant), employs speech recognition and natural language processing to provide detailed feedback on pronunciation, fluency, and intonation. Its gamified and adaptive features are reported to enhance learner motivation, autonomy, and self-regulated practice (Darasawang et al., 2023; Widyasari et al., 2023).

Although previous studies have reported positive effects of ELSA in higher education and general EFL contexts, research on its implementation in vocational education, particularly in semi-urban and rural Indonesian settings, remains scarce. Moreover, prior research has predominantly focused on linguistic outcomes, with limited investigation into motivational and affective dimensions such as anxiety reduction, learner engagement, and confidence development (Zhai & Wibowo, 2023). Given that motivation is a key predictor of language learning persistence and achievement, this omission represents a significant research gap.

Preliminary classroom data in this study further indicate nuanced outcomes. Questionnaire results revealed high perceived improvement in overall speaking skills (M = 4.03) and natural speaking (M = 4.00), while fluency (M = 3.43) remained comparatively challenging, suggesting persistent difficulties in spontaneous oral production. Motivational indicators, however, consistently received high ratings (M = 3.90–3.97), reflecting students' enthusiasm for ELSA's interactive and gamified features. These findings suggest that AI-mediated tools may simultaneously influence cognitive and affective dimensions of speaking development, contingent upon adequate pedagogical scaffolding and infrastructural support.

Against this background, this study addresses a critical gap by systematically examining the dual impact of AI-supported speaking instruction on both linguistic performance and motivational factors in vocational education contexts characterized by infrastructural constraints. Specifically, the study aims to: (1) evaluate the effectiveness of ELSA in improving vocational students' speaking proficiency, particularly fluency, pronunciation, and confidence; (2) investigate its impact on learners' motivation; and (3) identify contextual barriers and enabling factors for sustainable implementation. By doing so, this study contributes theoretical insights into AI-mediated language learning and provides empirical evidence to inform pedagogical practices and policy decisions in vocational English education.

2. Method

Research Design

This study employed a mixed-methods design to comprehensively investigate both the linguistic and motivational outcomes of integrating ELSA, an AI-powered speaking application, into vocational English instruction. The quantitative component was designed to generate measurable insights into students' perceived gains in speaking proficiency, including fluency, pronunciation, vocabulary, and confidence, as well as their motivational orientations, using structured Likert-scale questionnaires. The qualitative component, on the other hand, consisted of systematic classroom observations and semi-structured interviews, enabling the capture of rich, contextualized data regarding behavioral changes, learning experiences, and challenges encountered during the intervention.

The decision to use a mixed-methods design was based on the need for triangulation, allowing numerical trends to be cross-validated with descriptive accounts. This approach is consistent with Creswell and Plano Clark (2018), who argue that integrating quantitative and qualitative strands produces a more holistic understanding of complex educational interventions. In this study, triangulation ensured that the outcomes of AI-assisted dialogue could be examined not only in terms of statistical gains but also in terms of their practical significance for vocational learners.

Participants

The study took place at one vocational school in Garut district, West Java, Indonesia. The school is recognized for its openness to innovation in language teaching. Participants consisted of 30 eleventh-grade students from the Agribusiness Processing program (APHP). A criterion-based purposive sampling strategy (Etikan et al., 2016) was employed to ensure that all participants shared consistent exposure to the intervention within their regular English lessons.

To enrich the qualitative dimension, five students were selected for follow-up interviews, representing diverse motivational and proficiency profiles. In addition, the class teacher acted as a key informant, offering valuable perspectives on classroom realities, the pedagogical integration of ELSA, and observed changes in student performance and engagement.

Instruments

Three instruments were used to collect complementary sets of data:

2.1. Questionnaire. A five-point Likert-scale questionnaire was administered to evaluate students' self-perceptions of speaking performance (fluency, pronunciation, vocabulary, and confidence) and learning motivation. A pilot test confirmed its internal reliability, yielding Cronbach's alpha values of 0.915 for speaking items and 0.864 for motivation items, which indicates high internal consistency (Tavakol & Dennick, 2011).

2.2. Observation Checklist. Classroom observations employed a rubric adapted from the CEFR descriptors (Cambridge Assessment English, 2020). The checklist focused on learners' pronunciation accuracy, fluency, vocabulary range, and confidence during oral tasks, enabling the documentation of real-time classroom performance.

2.3. Interviews. Semi-structured interviews were conducted with five students and the teacher to elicit in-depth insights into learners' perceptions, motivational changes, and challenges when using ELSA. Interviews were audio-recorded, transcribed verbatim, and subsequently analyzed thematically.

Procedures

The intervention was implemented across a four-week period, consisting of two 90-minute sessions per week, integrated into the school's English curriculum.

First weekly session, students practiced with ELSA in the computer laboratory, focusing on pronunciation drills, fluency training, and role play activities directly relevant to vocational contexts, such as job interviews, customer service, and product promotion.

Second weekly session, students engaged in collaborative speaking activities (pair work and group tasks) designed to apply feedback obtained from ELSA into more authentic communicative settings. These included structured dialogues, problem-solving tasks, and short presentations. Teachers facilitated post-task reflections to consolidate learning.

Out of class practice, students were also encouraged to practice independently using ELSA outside of school hours. The app's gamified features (progress tracking, badges, and scoring system) provided motivation for consistent use, while corrective feedback supported self-paced learning.

This blended procedure ensured that students benefited from both guided classroom practice and autonomous learning opportunities, thus aligning with the principles of blended learning pedagogy.

Data Analysis

Quantitative data from the questionnaires were analyzed using descriptive statistics, including mean, percentage, and standard deviation, to summarize learners' perceptions of improvement in speaking and motivation. These results provided a numerical overview of students' self-reported gains.

Qualitative data from interviews and observations were analyzed using Miles, Huberman, and Saldaña's (2014) framework for thematic analysis, which involved three iterative stages: (1) data reduction (coding and categorizing responses), (2) data display (organizing coded data into matrices and visual charts), and (3) conclusion drawing and verification (developing and confirming themes). Integrating quantitative and qualitative findings at the interpretation stage allowed for convergence and complementarity, thereby enhancing both validity and reliability (Fetters et al., 2013).

Ethical Considerations

Ethical standards were strictly upheld throughout the study. Approval for the research was secured from school authorities, and informed consent was obtained from students and their guardians. Participation was voluntary, and students were assured that they could withdraw at any time without academic penalty. Confidentiality was maintained through the use of pseudonyms in interview transcripts and reports, and all data were securely stored with restricted access. These measures complied with the British Educational Research Association (BERA, 2018) guidelines for ethical educational research.

3. Results and Discussion

3.1 Results

Speaking Proficiency Improvement

Findings from the questionnaires and classroom observations demonstrated consistent improvement in students' fluency, pronunciation, and speaking confidence after the integration of ELSA into their English learning. More than 70% of learners reported noticeable gains in fluency, while observation notes corroborated these perceptions by documenting clearer articulation, more accurate stress and intonation patterns, and a reduction in pauses or hesitations during oral tasks. These developments indicate that students were not only able to produce spoken English more smoothly but also became increasingly aware of prosodic features essential for effective communication.

A particularly valued aspect of ELSA was its real-time corrective feedback, which enabled learners to immediately identify mispronunciations or intonation errors and repeat the activity until they achieved a satisfactory score. This iterative cycle of practice fostered greater self-monitoring skills, making students more conscious of their performance and more motivated to refine it. As reflected in student comments during interviews, many learners reported becoming "more aware of how English words should sound" and felt encouraged to try multiple times until improvement was evident. Such feedback loops not only enhanced accuracy but also cultivated metacognitive awareness, which plays a crucial role in long-term language development.

Teachers observed that the improvements acquired through ELSA practice transferred effectively into vocationally relevant speaking tasks, such as simulated job interviews and product presentations. In these activities, students spoke with greater confidence, clearer delivery, and smoother transitions between ideas compared to their pre-intervention performance. This transferability is significant as it suggests that ELSA practice went beyond mechanical repetition to equip learners with practical communication skills aligned with workplace demands. The progress demonstrated in these authentic contexts highlights the tool's value in strengthening vocational graduates' employability skills.

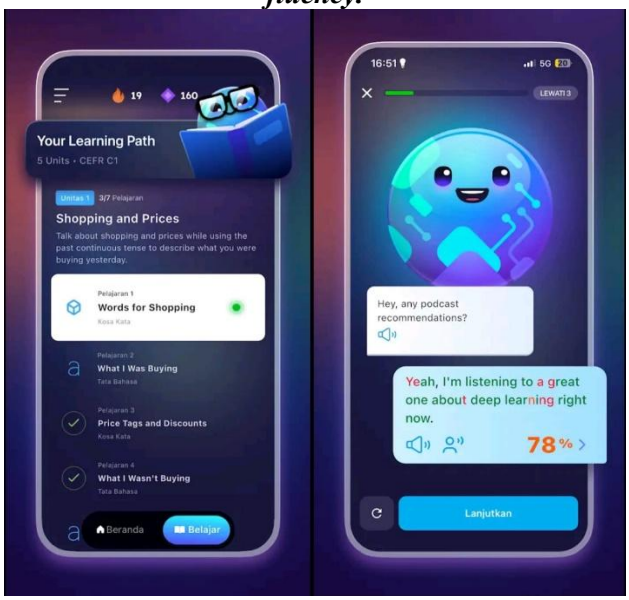
These findings align with existing research emphasizing the benefits of AI-powered language tools. Studies by Li, Link, and Hegelheimer (2021) underscore how immediate, automated feedback accelerates gains in fluency and pronunciation, while Widyasari et al. (2023) highlight how gamified

features enhance learner confidence and engagement in oral communication. By reinforcing these outcomes in a vocational high school context, the present study extends the evidence base and illustrates that AI-supported speaking applications can address both linguistic and psychological barriers in EFL learning environments where exposure to English is otherwise limited.

In summary, the integration of ELSA significantly improved learners' oral performance, particularly in pronunciation and confidence, while also supporting gradual gains in fluency. The combined evidence from quantitative trends and qualitative observations suggests that ELSA not only strengthened the technical aspects of speaking but also reduced affective barriers, making it a valuable tool for enhancing communicative competence in vocational English instruction.

Figure 1

Shows the ELSA interface where learners received real-time feedback on pronunciation, stress, and fluency.



Motivation and Engagement

The motivational impact of ELSA paralleled its linguistic benefits. More than 75% of students reported that the motivational impact of ELSA closely mirrored its linguistic benefits, highlighting how technological innovation can address not only cognitive but also affective aspects of learning. More than 75% of students reported higher motivation to practice speaking, with mean scores ranging from 3.7 to 4.0 across motivational indicators. This suggests that learners not only recognized measurable progress in their oral performance but also developed a stronger willingness to engage in repeated practice. The act of receiving immediate feedback and seeing improvement visually displayed on the application interface served as an intrinsic motivator, while the sense of achievement gained through the progress tracking functioned as an extrinsic reinforcer.

Students consistently mentioned gamified features such as scores, badges, and streaks as elements that made practice more engaging and enjoyable. These features created a sense of competition with themselves and sometimes with peers, which sustained regular practice. The progress-tracking system, in particular, enabled learners to visualize their advancement over time, reinforcing the perception of growth and mastery. This finding is consistent with prior studies on gamification in language learning, which highlight how reward systems stimulate persistence and promote self-regulation (Nguyen & Vu, 2022).

Interview data further enriched these quantitative trends. Students emphasized that ELSA provided a safe and supportive environment for practicing English, contrasting it with classroom recitations where the fear of making mistakes in front of peers often inhibited participation. The private practice mode of the app allowed learners to take risks with pronunciation and vocabulary without the threat of embarrassment or negative evaluation. This reduction in language anxiety

encouraged experimentation and active engagement, validating Horwitz's (2016) argument that confidence and psychological safety are prerequisites for effective communication

Teachers corroborated these findings by observing that learners who were previously passive or hesitant became more active contributors during speaking tasks. Students who once avoided oral participation began to volunteer answers, present ideas more confidently, and sustain interaction during group discussions. Such behavioral changes indicate that motivational gains extended beyond the digital platform into the classroom, influencing actual communicative practice.

Another noteworthy outcome was the evidence of autonomy and self regulated learning. Some students reported continuing their practice outside scheduled lessons, often in short but consistent sessions during their free time. This pattern reflects the development of independent learning habits, which are crucial in EFL contexts where exposure to authentic English input is limited. By fostering autonomy, ELSA supported learners in becoming more responsible for their own progress and in sustaining long-term language development. This resonates with Reinders and Benson's (2017) claim that mobile-assisted learning can play a pivotal role in nurturing learner independence.

Overall, the integration of ELSA demonstrated that technological tools can positively shape learners' attitudes, motivation, and engagement toward English learning. By combining gamified features with adaptive feedback, the app not only supported technical skill development but also created a learning environment that was less stressful, more enjoyable, and more conducive to persistence. These motivational benefits are particularly valuable in the vocational school context, where learners must build both competence and confidence to meet the communicative demands of future workplaces.

Figure 2

The results related to speaking skills: fluency, pronunciation, and confidence.

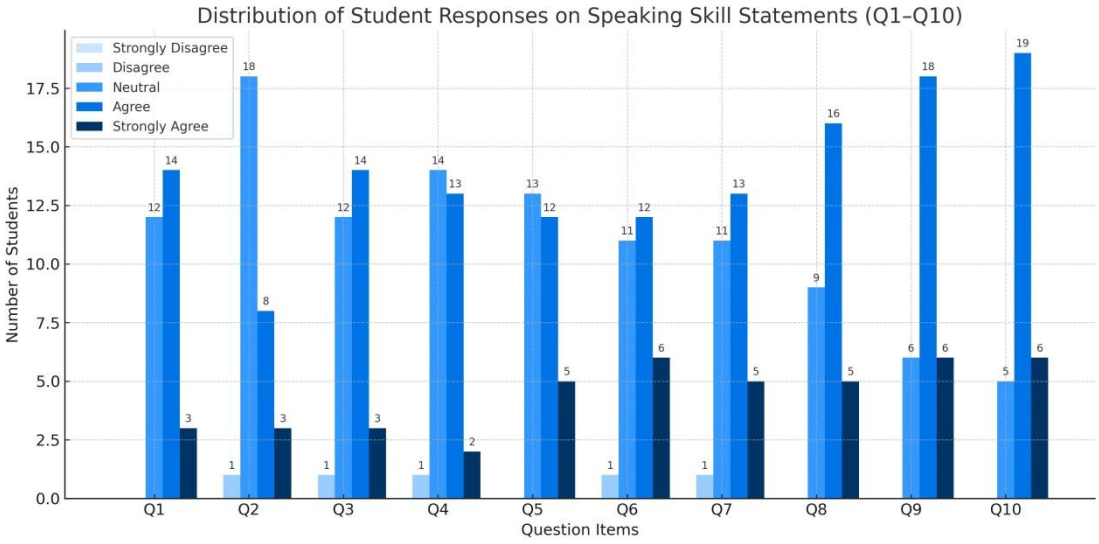
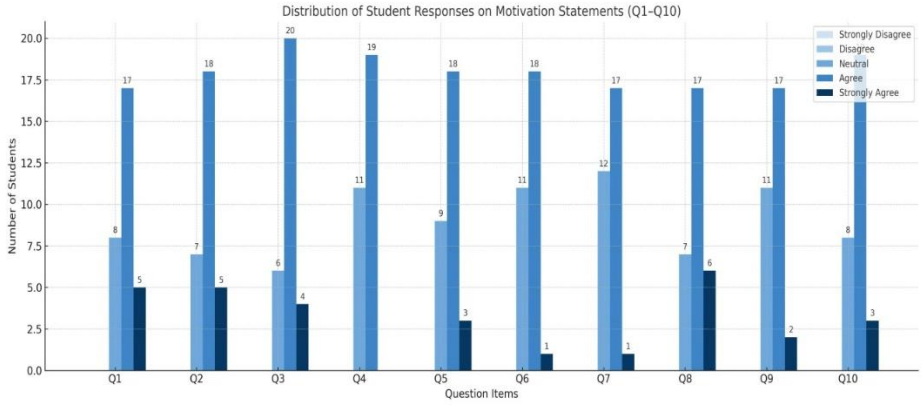


Figure 3

Students' responses concerning their learning motivation.



Quantitative Summary of Results

Table 1 provides a detailed overview of students' responses. Mean scores for all indicators exceeded 3.5 on a 5-point Likert scale, suggesting overall positive perceptions of ELSA's effectiveness. The highest means were recorded in overall speaking skills (M = 4.03) and natural speaking (M = 4.00), indicating strong learner confidence in their oral performance after the intervention. In contrast, fluency (M = 3.43) received a slightly lower score, suggesting that while learners perceived progress, fluency remained a more challenging aspect compared to pronunciation or motivation.

Table 1. Descriptive Statistics of Students' Responses

Indicator	Mean	SD	Interpretation
Pronunciation Accuracy	3.60	0.65	Positive improvement
Fluency in Expression	3.43	0.70	Moderate improvement
Vocabulary Use	3.63	0.67	Positive improvement
Confidence in Speaking	3.53	0.72	Increased self-assurance
Practical Application	3.73	0.66	Improvement in real-life usage
Independent Practice	3.57	0.64	Strengthened autonomous learning
Overall Satisfaction	3.63	0.69	High satisfaction with learning gains
Reduced Anxiety	3.77	0.68	Lower speaking anxiety
Natural Speaking	4.00	0.65	Strong positive perception
Overall Speaking Skills	4.03	0.62	Substantial perceived improvement
Motivation to Learn	3.90–3.97	0.61–0.71	Strong motivational impact

These results suggest that ELSA not only supported linguistic development but also enhanced affective factors, particularly reducing speaking anxiety and building confidence. The combination of quantitative and qualitative evidence demonstrates that AI-mediated dialogue created a low-stress, engaging environment that motivated students to practice autonomously while complementing teacher-led instruction.

3.2 Discussion

The findings of this study reinforce the growing evidence that AI-powered applications can significantly enhance both linguistic performance and learner motivation in EFL contexts. Improvements in pronunciation, fluency, and confidence support Li, Link, and Hegelheimer's (2021) claim that automated feedback accelerates mastery of speaking skills by providing learners with immediate, individualized input. The motivational gains observed also confirm earlier research emphasizing the role of gamification in sustaining engagement, persistence, and enjoyment in learning (Al-Said, 2021; Nguyen & Vu, 2022). What distinguishes the present study is its focus on vocational high school students, a group whose communicative competence is directly tied to employability and workplace readiness. Demonstrating that these benefits extend beyond higher education or general EFL contexts, this study provides new evidence for the effectiveness of AI-mediated speaking tools in vocational education.

The results further underscore the relevance of Self-Determination Theory (SDT) (Deci & Ryan, 2020). Students reported enhanced autonomy, as they were able to practice at their own pace and repeat exercises until satisfied with their performance. Their sense of competence grew through tangible improvements in oral production, particularly in pronunciation and stress patterns. Additionally, relatedness was fostered when vocationally authentic modules (e.g., job interviews, product presentations, customer interactions) were integrated into classroom activities, allowing students to connect language practice with real-world professional needs. Together, these findings illustrate how AI-assisted learning environments can satisfy learners' psychological needs, leading to both stronger performance and more sustained motivation.

Another important outcome was the observed reduction in speaking anxiety, which resonates with Horwitz's (2016) assertion that psychological safety is a prerequisite for effective communication. Many students described ELSA as a "safe space" where they could experiment with pronunciation and vocabulary without fear of peer judgment. This affective benefit is critical in the

Indonesian vocational context, where limited exposure to English outside the classroom often contributes to low confidence and reluctance to speak. By lowering these affective barriers, ELSA helped unlock participation from previously passive learners, a change also noted by the classroom teacher.

Despite these encouraging results, the study also revealed significant challenges that must be addressed for sustainable implementation. Barriers such as unstable internet connections, limited device availability, and restrictions of the free version of ELSA posed obstacles to equal access. These challenges mirror findings in MALL research (Stockwell & Reinders, 2019), which emphasize that digital innovations are often constrained by infrastructural realities. The evidence from this study also highlights the critical role of teachers in mediating technology use. Teachers not only guided students in navigating the app but also aligned ELSA activities with curriculum objectives and provided scaffolding when technical or linguistic difficulties arose. Without this mediation, the potential benefits of the tool might have remained underutilized.

At the institutional level, the findings point to the necessity of systemic support for technology-enhanced learning. Provisions such as loaner devices, premium app access, and reliable internet connectivity are essential to ensure equitable participation for all learners (Kukulska-Hulme & Viberg, 2018). Furthermore, ongoing professional development for teachers is crucial so that they can effectively integrate AI tools within task-based and competency-oriented pedagogies. Without these supports, there is a risk of widening digital divides within the classroom.

Overall, the findings suggest that ELSA holds strong potential to bridge the gap between classroom based instruction and workplace communication demands in vocational education. By improving both linguistic competence and motivational readiness, the application equips students with skills that are directly applicable in professional contexts. However, maximizing this potential requires a blended learning model, where autonomous mobile practice is strategically combined with teacher-facilitated classroom activities. Such an approach is in line with the Merdeka Curriculum, which emphasizes competency based, learner-centered, and technology enhanced learning. When implemented with adequate support, this blended model can better prepare vocational graduates for the communicative demands of the global workforce, thereby enhancing both their employability and adaptability in a rapidly evolving labor market.

4. Conclusion

This study examined the integration of ELSA, an AI-powered mobile speaking application, into vocational English instruction in one school in Garut district. The findings demonstrated that ELSA significantly improved students' speaking proficiency, particularly in pronunciation, fluency, and confidence, while also enhancing motivation and reducing language anxiety. Learners benefited from real-time corrective feedback, gamified features, and opportunities for autonomous practice, which fostered both linguistic development and self-regulated learning. Importantly, the improvements transferred to vocationally relevant speaking tasks, indicating ELSA's potential to strengthen students' employability skills in alignment with Industry 4.0 and global communication demands. However, challenges such as limited internet connectivity, unequal access to devices, and restrictions of the free version of the application highlight the need for institutional support and teacher mediation. Sustainable adoption requires adequate infrastructure, premium access, and professional development for educators to effectively integrate AI tools within task-based, competency-oriented instruction.

Overall, this study underscores the pedagogical potential of AI-mediated dialogue applications in bridging classroom learning with workplace communication needs. A blended learning approach combining autonomous mobile practice with teacher-facilitated classroom activities emerges as the most effective strategy to ensure equitable and meaningful use of AI tools in vocational education. By addressing both cognitive and affective dimensions of language learning, ELSA can empower vocational students with the communicative competence and confidence required for future professional success.

5. References

Akhmad, N. W., & Munawir, A. (2022). Improving the students' pronunciation ability by using ELSA Speak app. IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature, 10(1), 846–857. https://doi.org/10.24256/ideas.v10i1.2868

Al-Shallakh, M. A. I. (2024). Embedding artificial intelligent applications in higher educational institutions to improve students' pronunciation performance. Theory and Practice in Language Studies, 14(6), 828–835. https://doi.org/10.17507/tpls.1406.31

Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. Qualitative Sociology, 42(2), 139–160. https://doi.org/10.1007/s11133-019-9413-7

Baillifard, A., Gabella, M., Lavenex, P. B., & Martarelli, C. S. (2023). Implementing learning principles with a personal AI tutor: A case study. arXiv preprint arXiv:2309.13060. https://doi.org/10.48550/arXiv.2309.13060

Çayak, S. (2024). Investigating the relationship between teachers' attitudes toward artificial intelligence and their artificial intelligence literacy. Journal of Educational Technology & Online Learning, 7(4), 367–383. https://doi.org/10.31681/jetol.1490307

Chichekian, T., & Benteux, B. (2022). The potential of learning with (and not from) artificial intelligence in education. Frontiers in Artificial Intelligence, 5, 903051. https://doi.org/10.3389/frai.2022.903051

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.

Crystal, D. (2020). The Cambridge encyclopedia of the English language (3rd ed.). Cambridge University Press.

Deci, E. L., & Ryan, R. M. (2020). Self-determination theory: Basic psychological needs in motivation, development, and wellness (2nd ed.). Guilford Press.

Darasawang, P., Reinders, H., & Newton, J. (2023). Artificial intelligence and language education: Pedagogical possibilities and challenges. *Computer Assisted Language Learning, 36*(7), 1205–1223. https://doi.org/10.1080/09588221.2023.2233445

Dhivya, D. S., Hariharasudan, A., Ragmoun, W., & Alfalih, A. A. (2023). ELSA as an Education 4.0 tool for learning business English communication. Sustainability, 15(4), 3809. https://doi.org/10.3390/su15043809

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1–4. https://doi.org/10.11648/j.ajtas.20160501.11

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs: Principles and practices. Health Services Research, 48(6 Pt 2), 2134–2156. https://doi.org/10.1111/1475-6773.12117

Gani, A. S., Ruminda, R., & Bachtiar, B. (2025). From Projects to Practice: Integrating PjBL and CTL to Elevate Vocational EFL Students' Engagement. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, *8*(10). https://doi.org/10.54371/jiip.v8i10.9457

Gusrianto, E., & Iswahyuni, I. (2023). ELSA Speak application as an advanced program for improving students' pronunciation skills. EAI Endorsed Transactions on e-Learning, 9(36), e3. https://doi.org/10.4108/eai.25-10-2023.2348268

Hoch, M., & Dreyfus, T. (2006). Structure sense versus manipulation skills: An unexpected result. In J. Novotná, H. Moraová, M. Krátká, & N. Stehlíková (Eds.), *Proceedings of the 30th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 305–312). Prague, Czech Republic: PME.

Horwitz, E. K. (2016). Factor structure of the foreign language classroom anxiety scale: Comment on Park (2014). Psychological Reports, 119(1), 71–76. https://doi.org/10.1177/0033294116653368

Jameer, M. A., Prasanna, R., & Narra, R. (2024). Mobile applications as a learning AI tool: A study on improving undergrads' oral competence for job interviews. ResearchGate. https://www.researchgate.net/publication/377720187

Karim, S. A., Hamzah, A. Q. S., Anjani, N. M., Prianti, J., & Sihole, I. G. (2023). Promoting EFL students' speaking performance through ELSA Speak. Journal of Languages and Language Teaching, 11(4), 655–668. https://doi.org/10.33394/jollt.v11i4.10312

Kukulska-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art. British Journal of Educational Technology, 49(2), 207–218. https://doi.org/10.1111/bjet.12580

Li, Z., Link, S., & Hegelheimer, V. (2021). The impact of automated feedback on second language speaking development. Language Learning & Technology, 25(1), 36–55.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). Qualitative data analysis: A methods sourcebook (3rd ed.). SAGE.

Nguyen, T. H., & Vu, T. (2022). Gamification in mobile-assisted language learning: Effects on motivation and engagement. Computer Assisted Language Learning, 35(7), 1457–1476. https://doi.org/10.1080/09588221.2021.1937039

Reinders, H., & Benson, P. (2017). Research agenda: Language learning beyond the classroom. Language Teaching, 50(4), 561–578. https://doi.org/10.1017/S0261444817000192

Sholekhah, M. F., & Fakhrurriana, R. (2023). The use of ELSA Speak as a MALL tool for students' speaking skills. JELITA: Journal of Education, Language Innovation, and Applied Linguistics, 2(2), 93–100. https://doi.org/10.37058/jelita.v2i2.7596

Stockwell, G., & Reinders, H. (2019). Technology, motivation and autonomy in second language acquisition. Routledge.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. International Journal of Medical Education, 2, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Wahyudin, Bachtiar, B., & Zuhairi, A. (2021). ELSA-Supported Blended Learning: Enhancing Vocational Students' Speaking and Motivation. *Journal of English Language and Education*, *10*, 2025. https://doi.org/10.31004/jele.v10i5.1386

Widyasari, P. W., & Maghfiroh, A. (2023). The advantages of artificial intelligence ELSA Speak application for speaking English learners. ELTT: English Language Teaching and Technology Journal, 5(1), 1–12. https://doi.org/10.24090/eltt.2024.4248

Zhai, C., & Wibowo, S. (2023). A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university. Computers and Education: Artificial Intelligence, 4, 100134. https://doi.org/10.1016/j.caeai.2023.100134