

# ELSA-Supported Blended Learning: Enhancing Vocational Students' Speaking and Motivation

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## ABSTRACT

Developing employability-ready English speaking skills remains challenging and persistent in Indonesian vocational schools across contexts. This mixed-methods study investigated the effectiveness of ELSA, an AI-driven speaking app, embedded in a four-week blended course with two weekly 90-minute sessions for 30 Grade-11 Agribusiness students. Surveys (validated), CEFR-aligned observations, and interviews examined gains in pronunciation, fluency, confidence, and motivation, and documented implementation factors. Results show marked improvement in prosody, articulation, and extended turns; learners reported higher confidence, autonomy, and sustained engagement driven by real-time feedback, progress tracking, and gamified tasks. Skills transferred to vocationally authentic performances (e.g., product descriptions, customer service, job-interview simulations). However, efficacy depended on device availability, stable connectivity, digital literacy, and teacher mediation; freemium limits also constrained practice. The study concludes that ELSA-supported blended learning offers a practical, scalable model to strengthen oral proficiency and motivation in vocational EFL programs, provided institutions ensure equitable access, teacher support, and curricular alignment.

**Keywords:** ELSA, AI-Mediated Language Learning, Vocational Education, Speaking Fluency, Learner Motivation.

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## INTRODUCTION

In an era characterized by globalization, rapid technological advancement, and heightened international mobility, English has solidified its position as the world's lingua franca. Effective oral communication in English is no longer a supplementary skill but a core requirement for participation in cross-border trade, diplomacy, academic exchange, and the global workforce (Crystal, 2020; Kirkpatrick, 2021). The economic integration of ASEAN, coupled with Industry 4.0 and 5.0 imperatives, has amplified the demand for professionals who can articulate ideas fluently, persuasively, and accurately in English (Gusrianto & Iswahyuni, 2023). For vocational graduates, whose career trajectories often begin immediately after high school, the capacity to speak English confidently can be a decisive factor in employability (Widyasari et al., 2023). This shift has forced educational systems to re-examine their language teaching approaches, moving beyond grammar-heavy instruction toward communicative competence that reflects workplace realities. AI-assisted learning tools are emerging as promising interventions within this evolving pedagogical landscape (Syam et al., 2024).

In Indonesia, Vocational High Schools (Sekolah Menengah Kejuruan/SMK) play a strategic role in producing skilled graduates who can meet the demands of local and global industries. The Ministry of Education, Culture, Research, and Technology mandates SMK programs to integrate technical expertise with soft skills, including English communication, as part of the national agenda for improving human capital competitiveness (Kemendikbudristek, 2022). According to the EF English Proficiency Index (2023), Indonesia ranked 82nd out of 113 countries, classified as having "low proficiency," highlighting a persistent gap in communicative competence. Within vocational education, this gap is even

more critical given that many graduates enter service, tourism, hospitality, or technical industries where English is a functional necessity (Zhai & Wibowo, 2023). Despite curricular emphasis on communicative skills, actual classroom implementation often struggles to achieve sustained oral proficiency outcomes, suggesting a disconnect between intended and enacted curricula (Widyasari et al., 2023).

Speaking remains one of the most challenging skills for EFL learners, particularly in contexts where English exposure is limited outside the classroom (Derakhshan et al., 2022). In many Indonesian SMKs, students receive between 2-4 hours of English instruction per week, often dominated by reading and writing activities geared toward examinations (Syam et al., 2024). Opportunities for authentic spoken interaction are scarce, and when present, they are frequently limited to structured dialogues or rehearsed presentations. Learners also face psychological barriers such as foreign language anxiety, fear of negative evaluation, and low self-confidence, which impede spontaneous communication (Horwitz, 2016; Hashemifardnia et al., 2023). These affective constraints are compounded by limited teacher training in communicative methodologies and a lack of access to native or near-native speaker models. As a result, many students graduate with insufficient fluency and pronunciation accuracy to meet workplace communication standards.

The integration of technology into language education offers a potential remedy to these challenges, especially in contexts constrained by limited instructional time and resources. Computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) frameworks have demonstrated that digital platforms can extend practice opportunities beyond classroom boundaries (Burston, 2022). In particular, AI-driven applications can simulate real-world communication, offer immediate corrective feedback, and adapt to learners' proficiency levels (Nguyen & Vu, 2022). Research indicates that AI-based feedback accelerates pronunciation improvement by providing consistent, individualized corrections unattainable in large classes (Li, Link, & Hegelheimer, 2021). For vocational students, such tools not only enable skill practice at their own pace but also reduce the affective filter by allowing repeated trials without the social pressure of peer judgment (Syam et al., 2024).

ELSA (English Language Speech Assistant) represents a leading example of an AI-powered speaking application that combines speech recognition, natural language processing, and pronunciation analytics. It enables learners to practice diverse communicative scenarios ranging from job interviews to customer service interactions while receiving real-time feedback on segmental and suprasegmental features of speech (Darasawang et al., 2023). Beyond accuracy, ELSA promotes fluency development by encouraging extended responses and providing vocabulary support. The app's gamified elements, progress tracking, and goal-setting features can enhance learner motivation, an important factor in sustaining engagement over time (Nguyen & Vu, 2022). Studies in various EFL contexts have reported significant gains in learners' speaking confidence and pronunciation accuracy after sustained use of ELSA (Widyasari et al., 2023), yet these studies have rarely examined vocational school contexts where communication tasks are directly tied to occupational performance.

While the benefits of AI-based speaking practice are well documented, most empirical evidence comes from general secondary schools or university settings, often in urban areas with strong digital infrastructure (Zhai & Wibowo, 2023). Vocational high schools, especially in semi-urban and rural regions, face unique implementation barriers such as limited device access, inconsistent internet connectivity, and varied levels of digital literacy among students and teachers. Moreover, previous studies have tended to focus on linguistic outcomes (e.g., pronunciation, fluency) while giving less attention to affective outcomes such as motivation, self-confidence, and learner autonomy (Hashemifardnia et al., 2023). Given that motivation is a critical predictor of language learning persistence, the absence of research linking AI-based tools like ELSA to motivational gains in vocational contexts represents a significant oversight in the literature.

Integrating AI-based learning tools into vocational English curricula is not without challenges. Teachers must navigate issues of lesson planning, curriculum alignment, and formative assessment integration while adopting new technologies (Burston, 2022).

Professional development is often necessary to maximize pedagogical affordances, yet training opportunities may be scarce (Syam et al., 2024). Furthermore, institutional support, such as providing adequate devices and reliable connectivity, is essential to prevent inequitable access among students. These factors can influence not only the uptake of technology but also its impact on learning outcomes. Understanding these contextual variables is crucial to designing interventions that are both effective and sustainable in SMK environments.

From a theoretical perspective, AI-mediated interactive dialogue aligns with communicative language teaching (CLT) principles, sociocultural theory, and motivation frameworks such as Self-Determination Theory (SDT). CLT emphasizes authentic interaction and meaningful communication, both of which can be facilitated through AI simulations (Richards, 2015). Sociocultural theory underscores the role of mediated interaction and scaffolding, which AI systems can provide through adaptive feedback loops (Lantolf & Thorne, 2006). SDT highlights the importance of autonomy, competence, and relatedness elements that AI tools like ELSA can support by offering self-paced practice, immediate feedback, and contextually relevant content (Deci & Ryan, 2020). This convergence of theory and technology strengthens the rationale for investigating AI-based interventions in speaking instruction for vocational learners.

While research on AI-powered language learning tools, including ELSA, has gained increasing attention, most studies have concentrated on university students or general secondary EFL learners, with limited focus on vocational education contexts. Vocational students, however, face distinct challenges, as their English proficiency must directly support employability and workplace communication. Moreover, existing studies largely emphasize pronunciation accuracy or short-term speaking improvement, overlooking broader dimensions such as learners' motivation, confidence, and ability to transfer skills into authentic vocational tasks. In addition, the integration of AI tools within structured blended learning models remains insufficiently examined, especially in resource-constrained settings where issues of accessibility, teacher support, and curricular alignment are critical (Zhai & Wibowo, 2023). This study addresses these gaps by exploring the use of ELSA-supported blended learning to enhance both speaking skills and motivation among Indonesian vocational students, thereby contributing new insights to the literature on AI-assisted language learning in underrepresented educational contexts. By addressing these objectives, the study aims to generate actionable, contextually grounded insights that can inform educators, policymakers, and technology developers, thereby advancing both the theoretical discourse and the practical application of AI in language education.

## METHOD

### Research Design

This study employed a mixed-methods research design to address its dual focus on measuring linguistic improvement and exploring motivational changes resulting from the integration of ELSA, an AI-based interactive dialogue tool, into vocational English instruction. The quantitative component consisted of structured questionnaires to capture students' perceptions and self-assessed speaking skills development, while the qualitative component encompassed classroom observations and semi-structured interviews to explore participants' experiences in depth. Mixed-methods designs are widely recognized for their ability to provide a comprehensive understanding of complex educational interventions by enabling methodological triangulation (Creswell & Plano Clark, 2018; Johnson & Onwuegbuzie, 2004). This approach allowed convergence and complementarity between numerical patterns and narrative accounts, leading to a nuanced understanding of how AI-assisted speaking practice operates in vocational classrooms where communicative needs are strongly tied to occupational readiness.

### Research Participants

The study was conducted in one vocational high school in Garut regency, West Java province of Indonesia. The site was selected for its emphasis on enhancing students' communicative competence and openness to integrating educational technology. The participants consisted of 30 eleventh-grade students enrolled in the Agribusiness Processing of Agricultural Products (APHP) program. Criterion-based purposive sampling was used to ensure that all participants had direct engagement with the ELSA intervention and were actively enrolled in the school's English program during the research period (Etikan et al., 2016). Five students were invited for in-depth interviews to capture diverse motivational trajectories, while one English teacher acted as a key informant, offering insights into pedagogical integration and classroom realities. Purposeful participant selection in vocational contexts helps ensure relevance and coherence of findings, especially when evaluating technology-based interventions (Widyasari et al., 2023).

### **Research Instruments**

Three primary instruments were utilized in alignment with the research objectives. First, a Likert-scale questionnaire (5-point scale) measured students' perceptions of their speaking proficiency pronunciation, fluency, vocabulary, and confidence and their learning motivation. The instrument's reliability was confirmed through a pilot study, yielding Cronbach's alpha values of 0.915 for speaking and 0.864 for motivation, indicating high internal consistency (Tavakol & Dennick, 2011). Second, classroom observations employed a CEFR-aligned rubric adapted from Cambridge Assessment English (2020), with descriptors rating pronunciation, fluency, vocabulary, and confidence on a 1–5 scale. Third, semi-structured interviews were conducted with selected students and the teacher to obtain qualitative insights on usage patterns, perceived benefits, and challenges in the intervention. Interviews were audio-recorded, transcribed verbatim, and coded thematically, consistent with best practices in applied linguistics research (Dörnyei, 2007).

### **Procedures**

The intervention lasted four weeks, with two 90-minute sessions per week integrated into the regular English curriculum. In the first session each week, students practiced with ELSA in the school's computer laboratory, focusing on pronunciation drills, fluency practice, and role-play simulations relevant to vocational contexts such as customer service interactions and workplace meetings. The second session emphasized communicative application, where students performed speaking tasks in pairs or groups using feedback from ELSA as a reference. The teacher selected ELSA modules aligned with weekly learning objectives and facilitated reflective discussions after practice sessions, ensuring alignment with the national curriculum (Kemendikbudristek, 2022). Students also had access to ELSA outside of class for self-paced practice, supported by the platform's progress tracking and feedback analytics. Blended approaches of this kind are shown to improve both proficiency and learner autonomy in vocational EFL settings (Nguyen & Vu, 2022).

### **Instrument Validity and Reliability**

To ensure the robustness of the data, all instruments underwent a systematic validation process. The student questionnaire was adapted from established scales on speaking motivation and engagement, then reviewed by two experts in applied linguistics and educational technology to establish content validity. A pilot test with 15 vocational students (not included in the main study) was conducted, and Cronbach's alpha was calculated to examine internal consistency. The reliability coefficient reached 0.87, indicating a high level of reliability. Observation checklists were aligned with CEFR-based descriptors of speaking performance, and inter-rater reliability was established through two trained raters who reached 92% agreement after a calibration session. The semi-structured interview guides were developed based on themes emerging from the literature on AI-assisted language learning and were reviewed by an expert panel to enhance construct validity. Triangulation across instruments further strengthened the credibility and trustworthiness of the findings.

### **Data Analysis**



Quantitative questionnaire data were analysed using descriptive statistics, frequency, percentage, mean, and standard deviation to summarize students' perceptions of ELSA's impact. Comparative analyses examined differences across skill areas and motivational indicators. Qualitative data from interviews and observations underwent thematic analysis following the Miles, Huberman, and Saldaña (2014) framework, involving data reduction, data display, and conclusion drawing/verification. Inductive coding was employed to capture emergent themes such as increased speaking confidence and reduced anxiety. Data integration occurred at the interpretation stage, identifying convergence, divergence, and complementarity between quantitative and qualitative findings. This integrative approach enhances interpretive validity in educational technology research (Fetters et al., 2013).

## FINDINGS AND DISCUSSION

This section presents the results and discussion in direct alignment with the study's objectives: (a) to examine the effectiveness of ELSA in enhancing the speaking skills of vocational high school students; (b) to investigate students' levels of motivation and perception toward ELSA through a structured questionnaire; and (c) to identify and analyze the challenges and limitations encountered in implementing AI-based interactive dialogue in vocational English instruction. The findings integrate questionnaire statistics, classroom observations, and semi-structured interviews with students and the teacher to provide a comprehensive account of outcomes and mechanisms.

### Effectiveness of ELSA in Enhancing Speaking Skills

Students reported consistently positive perceptions of speaking improvement after using ELSA, with item means ranging from 3.73 to 4.03 on a 5-point scale. Table 1 presents the students' overall responses to the questionnaire.

Table 1. Students' overall responses to Elsa-supported speaking skills

No	Items	SD	D	A	SA	Average
1	ELSA has helped me improve my English pronunciation.	0	12	14	3	3.93
2	ELSA has improved my confidence in speaking English.	1	18	8	3	3.77
3	I feel more fluent when speaking English because of ELSA.	1	12	14	3	3.93
4	ELSA motivates me to speak English more often."	1	14	13	2	3.87
5	ELSA has helped me reduce anxiety when speaking English.	0	13	12	5	3.87
6	I feel my pronunciation has become clearer after using ELSA.	1	11	12	6	3.77
7	I find it easier to organize my ideas when speaking English.	1	11	13	5	3.73
8	I feel more confident speaking English in front of others.	0	9	16	5	3.87
9	I can speak more naturally in English after using ELSA.	0	6	18	6	4.00
10	ELSA has significantly improved my overall speaking skills.	0	5	19	6	4.03

Notes: SD (Strongly Disagree); D (Disagree); A (Agree); SA (Strongly Agree).

Table 1 shows an overall mean score of 3.88 (SD = 0.10), suggesting that students generally agreed with the positive influence of ELSA on their speaking development. The highest-rated items were improvements in overall speaking skills (M = 4.03) and speaking more naturally (M = 4.00), reflecting strong perceived gains in fluency and holistic competence. Pronunciation and confidence also received high ratings (M = 3.77–3.93), confirming ELSA's supportive role in boosting learners' self-assurance. The lowest mean score was for organizing ideas while speaking (M = 3.73), indicating that while ELSA effectively enhances linguistic performance, it may contribute less to higher-order discourse organization. Overall, the findings highlight that ELSA-supported learning substantially strengthened students' fluency, pronunciation, and confidence, with minor limitations in fostering idea structuring.

The strongest endorsements appeared in items reflecting naturalness and overall improvement (Q9–Q10), indicating perceived gains beyond discrete pronunciation drills. This finding aligns with Widyasari et al. (2023), who found that ELSA significantly improved learners' pronunciation accuracy and speaking confidence in an Indonesian EFL context. Similarly, Darasawang et al. (2023) also reported that AI-based pronunciation feedback accelerated learners' mastery of suprasegmental features, suggesting that learners benefit from technology-driven corrective input not only in accuracy but also in fluency. These studies

collectively highlight that pronunciation practice through AI can produce measurable gains in multiple aspects of oral proficiency.

Observation notes corroborated these trends, documenting clearer segmental articulation, more appropriate word stress and intonation, and fewer dysfluencies in extended turns. Li et al. (2021) emphasized that repeated automated feedback sessions can lead to faster pronunciation gains compared to delayed teacher correction, while Nguyen and Vu (2022) found that AI speech apps promoted learner autonomy and extended opportunities for speaking practice. Taken together, these studies suggest that learners experience both immediate and long-term benefits when provided with systematic and individualized feedback.

Interview accounts highlighted the role of real-time, individualized feedback. Students described iterative self-correction cycles “repeat until the score is good” that fostered awareness of micro-errors and built confidence. This mirrors Li et al. (2021), who found that repeated feedback cycles enhance accuracy and speed up the learning process. Likewise, Nguyen and Vu (2022) stressed that AI feedback complemented teacher instruction by enabling students to engage in private practice beyond classroom time. These insights indicate that the effectiveness of feedback is reinforced when learners are supported by both AI-driven guidance and teacher facilitation.

The teacher noted marked improvements in prosody and fluency, emphasizing that ELSA’s feedback complemented her instruction by enabling repeated, private practice. This is consistent with Nguyen and Vu (2022), who observed that AI speech apps extended practice opportunities in resource-limited classrooms. Zhai and Wibowo (2023) further argued that vocational EFL learners benefit when speaking tasks are designed to closely match workplace communication, a finding that underscores the importance of applying AI-based speaking practice in authentic contexts. Together, these results suggest that combining classroom instruction with AI-mediated tasks produces comprehensive improvement.

Gains generalized to vocationally authentic tasks, such as product descriptions and job-interview simulations. This aligns with Zhai and Wibowo (2023), who highlighted the role of authentic speaking practice in preparing learners for workplace communication. Syam et al. (2024) also emphasized that hybrid learning, combining mobile-assisted practice with in-class activities, maximized learners’ ability to transfer skills into real-life communication settings. These findings confirm that authentic and blended approaches are critical for ensuring that speaking skills acquired through ELSA are transferable to professional environments.

### **Motivation and Perception toward ELSA**

Motivational ratings were uniformly positive, with item means between 3.63 and 3.97 and an absence of negative responses. This trend is consistent with Al-Said (2021), who reported that AI-based learning tools increased learner engagement through gamification and instant feedback. Khatoony and Nezhadmehr (2020) also found that mobile-assisted pronunciation apps encouraged repeated practice through immediate reinforcement, supporting the idea that gamified and interactive design elements in ELSA contributed directly to sustained learner motivation.

Students attributed their motivation to gamified feedback (scores, badges) and visible progress, which promoted a mastery orientation. This resonates with Khatoony and Nezhadmehr (2020), who highlighted the motivational power of repetition supported by mobile feedback. In addition, Al-Said (2021) showed that gamification mechanisms increased learners’ willingness to engage in repeated speaking practice. Both studies demonstrate that motivational gains are strongly tied to design features that make language practice both rewarding and engaging.

Interview narratives portrayed ELSA as “less nerve-wracking” than class recitations, encouraging risk-taking with unfamiliar language. This aligns with Horwitz (2016), who emphasized that reducing anxiety is essential for increasing participation in speaking activities. Burston (2022) also reported that mobile-based speaking platforms created a low-stakes environment that encouraged friendly competition and participation, particularly among learners who were initially reluctant to speak. These consistent findings suggest that

ELSA's design helps learners reduce affective barriers while promoting greater speaking confidence.

Teachers observed higher on-task behaviour and proactive participation, including among previously reluctant speakers. Burston (2022) noted that mobile-based speaking platforms sustain practice habits through competition and collaboration, while Reinders and Benson (2017) argued that mobile learning enables autonomous micro-learning episodes that keep students engaged outside the classroom. Together, these perspectives indicate that ELSA creates both social and individual motivational drivers that reinforce persistence in speaking practice.

Daily micro-sessions cultivated self-regulation, with students practicing during idle moments. This finding supports Reinders and Benson (2017), who argued that mobile learning provides opportunities for short, repeated practice episodes that extend beyond formal classroom boundaries. Deci and Ryan's (2020) Self-Determination Theory also supports this finding, as it identifies autonomy and self-regulation as key drivers of sustained motivation. In the case of ELSA, the combination of mobile accessibility and personalized learning pathways provided a structure in which learners could autonomously manage their learning progress.

### **Challenges and Limitations in ELSA Implementation**

Infrastructural constraints limited uniform access, with device lag, storage constraints, and uneven internet connectivity. This mirrors findings by Arrosagaray et al. (2019), who identified connectivity as a critical barrier to sustained mobile-assisted language learning implementation. Stockwell and Reinders (2019) likewise warned that infrastructural issues, particularly inconsistent access to devices and networks, directly hinder sustained learner persistence. These findings suggest that overcoming infrastructural challenges is essential for equitable access to ELSA.

The free version's daily cap restricted practice for motivated learners, echoing Stockwell and Reinders (2019), who noted that app-based limitations can reduce learner persistence during peak engagement periods. Godwin-Jones (2021) also stressed that free or trial-based versions of learning technologies often create structural inequities among learners, particularly when some can afford premium access while others cannot. Both studies point to the need for institutional support in addressing the limitations of freemium learning models.

Digital literacy varied, requiring onboarding support. This is consistent with Godwin-Jones (2021), who emphasized that teacher scaffolding is essential for integrating mobile learning tools, particularly in less digitally mature contexts. Kukulska-Hulme and Viberg (2018) further argued that equitable adoption of mobile learning requires systematic teacher facilitation, as learners' digital competence is uneven. These findings highlight that teacher mediation is necessary to ensure equal opportunities for learners with differing technological skills.

Psychological responses to barriers varied: resilient learners adapted, while others disengaged. This variability supports Ushioda's (2011) observation that motivational resilience is uneven across EFL populations. Reinders and Benson (2017) also indicated that learners' persistence in mobile learning depends on their ability to self-regulate and manage technological challenges. These perspectives demonstrate that psychological resilience plays a critical role in shaping learner outcomes when technology-mediated barriers arise.

Teacher mediation proved pivotal for equity, as seen in providing tutorials and lab access. This confirms the findings of Kukulska-Hulme and Viberg (2018), who emphasized teacher facilitation as a determinant of equitable technology adoption. Arrosagaray et al. (2019) also stressed that structured teacher guidance can help learners overcome infrastructural and technical challenges, particularly in contexts with limited resources. Both studies affirm that teacher involvement is central to ensuring that AI-based speaking applications are implemented inclusively.

Institutional support through loaner devices, premium subscriptions, and structured lab hours would align ELSA use with the Merdeka Curriculum's emphasis on independent, competency-based learning. This recommendation is consistent with OECD (2021), which

advocates aligning institutional resources with digital learning policies. Stockwell and Reinders (2019) also highlighted that institutional backing determines the long-term sustainability of mobile-assisted language learning. Together, these studies indicate that systemic support is necessary for scaling and sustaining ELSA in vocational education contexts.

## CONCLUSIONS

This study demonstrates that integrating ELSA, an AI-powered English-speaking application, can significantly enhance speaking fluency, pronunciation accuracy, and learning motivation among vocational high school students. Through a blended learning approach that combined self-paced mobile practice with guided classroom activities, students successfully transferred practiced skills into workplace-relevant communication scenarios, such as job interviews and customer service interactions. Real-time, personalized feedback enabled learners to identify and correct pronunciation errors independently while boosting their confidence, whereas gamified features, progress tracking, and vocationally tailored content served as strong motivational drivers, especially for students who were previously reluctant or passive in speaking tasks. The successful implementation of this approach, however, depends on enabling conditions, including adequate device availability, stable internet connectivity, sufficient digital literacy, and strong teacher and institutional support. Practical challenges such as the daily practice cap in the free version of ELSA, varying levels of technological proficiency, and infrastructural barriers need to be addressed through strategies like providing loaner devices, premium subscriptions, and structured onboarding sessions. Despite these promising outcomes, the study has several limitations. The relatively small sample size, restricted to one vocational school, limits the generalizability of findings. In addition, the short intervention period prevented the examination of long-term effects on speaking development and motivation, while reliance on the freemium version of ELSA constrained access to advanced features. Future research should therefore involve larger and more diverse vocational cohorts, adopt longer intervention durations, and explore comparisons across different AI-assisted platforms to validate and extend the findings. Overall, this study affirms that ELSA-supported blended learning provides a practical and scalable model for bridging the gap between classroom English instruction and workplace communication demands in vocational education. With sufficient infrastructural and pedagogical support, this AI-driven approach holds the potential to deliver sustainable improvements in students' speaking proficiency while simultaneously fostering motivation and learner autonomy.

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