Analysis of Student Engagement and Motivation Through Mobile Assisted Language Learning

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Abstract. The integration of Mobile-Assisted Language Learning (MALL) into educational practices has gained attention as an effective approach for enhancing language learning outcomes. This study investigates the impact of MALL on student engagement and motivation among vocational high school students in Metro City, Lampung, Indonesia. Using a qualitative case study method, data were collected through semi-structured interviews and classroom observations involving three purposively selected participants. This suggests the value of MALL, which, in achieving fun and interactive elements, promotes engagement and betterment of grammar and vocabulary. However, identified limitations in the internet connection remained, with little effect on speaking fluency. According to the research, viewed through the lens of Self-Determination Theory (SDT) as an analytical framework, one of the main advantages of MALL is the way it meets students' psychological needs for autonomy, competence, and relatedness. The implications suggest the necessity of integrating speaking activities into MALL tools, improving digital infrastructure, and customizing MALL applications for vocational education. This research contributes to the growing body of knowledge on technology-enhanced language learning, emphasizing its potential in specialized educational contexts.

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INTRODUCTION

In modern society, technology can not be avoided in day-to-day life and has infiltrated most aspects of people lives and daily routines. With the advancements of information and communication technologies (ICT) and intelligence into mobile devices more people are being skilled at accessing the internet using mobile devices like smartphones and tablets

(Zhou et al., 2023). It is undeniable that the use of technology in learning activities and language skills improvement is also one of the interesting options as a learning medium. Studies have demonstrated the effectiveness of mobile platforms in foreign language learning, emphasizing their benefits in teaching and learning, with interactive and adaptive applications tailored to individual needs yielding positive educational outcomes and high student satisfaction (Stefanovic & Klochkova, 2021). Mobile-assisted language learning (MALL) has garnered interest in formal education, self-directed learning, and professional training environments, establishing it as a versatile medium for language acquisition. Moreover, MALL possesses the capacity to bridge the global educational gap, especially in regions where conventional resources are limited while mobile connectivity is widespread. The efficacy of these projects is largely contingent upon student participation, a vital element influencing motivation and learning results, while also tackling issues such as digital literacy, distractions, and equal access.

English is one of the most significant languages to study to this day. Ilyosovna (2020) emphasises on the world wide importance of English, stressing on the role of English in large scale as a lingua franca for communication, career opportunities and cultural adaptation. She claims that English predominates in internet structures, trade, and by international guidelines, making it an important ability for expert and private development. English proficiency is critical as it enhance career prospects, enhance the engagement in global communication, and for accessing scientific knowledge in higher education (Andayani, 2022). Furthermore, over 80% of academic publications are published in English, establishing it as major way for academic research (van Weijen, 2012). Moreover, English has emerged as the dominant language of the Internet, comprising over 49% of all online material (W3Techs, 2024). These factors reinforce the English language as a very significant language for people globally.

Motivation is critical to the learning process, as it drives engagement, goal-setting, and persistence (Järvenoja et al., 2020). Motivation pushes engagement in activities. It is essential to enhance student motivation during the learning process. Motivation in learning plays a critical role in academic success, influencing effort, persistence, and engagement while interacting with cognitive strategies to foster well-being, and it can be enhanced through innovative methods like game-based learning that stimulate intrinsic motivation and active participation (Partovi & Razavi, 2019; Trautner & Schwinger, 2020). The utilisation of MALL is one method that can be utilised to improve the motivation of students. To achieves engaging and personalized experiences, thus boosting motivation. MALL is one method that effectively enhances motivation by integrating multimedia, gamification, and personalized learning pathways, aligning with students' digital preferences. Studies show that gamified tools, like language apps, significantly improve motivation and engagement, fostering persistence in learning activities (Huizenga et al., 2019).

In education, motivation affects levels of engagement and academic performance in settings. Interest and curiosity lead to intrinsic motivation, which drives students to engage in tasks and attitudes, and behaviors around learning activities. It advocates for higher engagement and excitement through motivation in educational environment (Treiblmaier & Putz, 2020). Research also suggests that appropriately challenging tasks that can be performed by the students can promote their motivation and engagement, in the learning process. This is true especially for the people, who tend to think. It keeps their minds

working, and prevents the boredom that can stem from too easy tasks (Lavrijsen et al., 2021). Motivation does have a part to play, in influencing students' determination and accomplishments. This shows that those who have strong motivation are likely to be more creative and find alternative measures to succeed in their endeavors, in comparison to less motivated individuals (Filgona et al., 2020). The expectancy value theory of motivation states that students' motivations are determined by their beliefs in their potential to achieve (expectancy) and the value they assign to the activities they perform. These factors play a role in determining their level of involvement and achievement (Cook & Artino, 2016). In addition, motivation heightening learning methods does not require ability, but also encourages the spiritual strength and confidence to reach the goals, building a cyclical process of learning and success (Alcívar et al., 2021). These findings as an indication that motivation is a condition vitally tied to the learning environment for individuals and underlies the conditions to learn in depth from the time spent in this educational process.

In English as a Foreign Language (EFL) environments, MALL has been an effective means of enhancing learners' motivation and engagement. MALL uses interactive, adaptive, and repairable strategies to increase both intrinsic as well as extrinsic motivation, which activates students to engage and helps the students to hold their attention into successfully learning the language they want to learn (Ali et al., 2020; Solikhah, 2020). The employment of teacher feedback, collaborative activities, and multimedia resources also promotes better learning and autonomy and confidence of students catering to specific learner needs (Ghorbani & Ebadi, 2020; M. Rafiq et al., 2020). Gamification features such as rewards, competition, and narrative found in MALL systems support self-regulated learning and increase social self-efficacy, engagement, and academic performance (Liu, 2020; Treiblmaier & Putz, 2020). MALL features make it a viable tool to increase motivation and engagement, particularly for low-proficiency learners who benefit from its visuals and task-based approaches (Haniff Mohd Tahir et al., 2020; Kassim & Said, 2020).

Based on these findings, improving engagement in class during learning activity is a powerful tool especially in English Language lesson. Moreover, in the academic prospect of the students. This study aims to understand how language learning through Mobile Assisted Learning Language affect students' engagement and motivation in the learning process. By examining its impact, this research aims to provide insights into optimizing MALL for improved learning outcomes and engagement in academic environments.

The context of this study involves vocational high school students in Metro City, Lampung, Indonesia. While previous research on Mobile-Assisted Language Learning (MALL) has predominantly focused on general education and higher education contexts, this study addresses a significant gap by exploring the application of MALL in vocational education a domain that remains underrepresented in current literature. This focus is particularly important, as vocational education demands the acquisition of language skills that are closely aligned with specific occupational goals. By targeting this unique educational setting, the study contributes to a broader understanding of how MALL can be effectively utilised to support skill-based learning. The findings highlight MALL's capacity to enhance students' motivation and engagement within specialised contexts. Additionally, the study employs Self-Determination Theory (SDT) to examine how MALL satisfies learners' psychological needs for autonomy, competence, and relatedness, thus offering a robust theoretical framework to understand learner motivation. Importantly, the study

demonstrates how MALL supports the development of technical language skills, such as vocabulary and grammar relevant to vocational fields, thereby aligning language education with industry-specific demands.

This study seeks to answer the following research questions:
1. How does the use of MALL influence student motivation and engagement in vocational education settings?
2. In what ways does MALL support the development of occupationally relevant language skills in vocational high school students?
3. How does MALL fulfil students' psychological needs as outlined in Self-Determination Theory within a vocational education context?

METHODS

This study utilises a qualitative case study technique to investigate students' experiences with MALL during the learning process in vocational high school classrooms. A case study is a thorough and detailed analysis of a single unit or a limited number of units, aimed at understanding a wider category of situations or phenomena by exploring the unit's contextual and causal details (Gerring, 2016). The case study method facilitates thorough and detailed examination of phenomena within a real-world setting, rendering it optimal for comprehending the intricate effects of MALL on student engagement and motivation.

The study was conducted at SMK Negeri 3 Metro, Metro City, Lampung. The subjects of the research were tenth-grade students of vocational highschool (SMK) Negeri 3 Metro, Metro City, Lampung, totalling three students consisting of three female students selected through purposive sampling technique. The limited sample size may restrict generalisability, although it facilitates a comprehensive examination of the participants' experiences, along with the objectives of a qualitative case study. This approach facilitates a comprehensive examination of their motivations, engagement patterns, and challenges, providing substantial qualitative data. The selection criteria guaranteed that participants accurately represented the target demographic (vocational students) and possessed sufficient expertise with MALL, hence enhancing the relevance and application of the findings. Purposive sampling, as articulated by Yin (2017), entails the selection of participants with particular qualities pertinent to the research objectives. Participants in this study were selected according to their active participation in MALL during English class, therefore guaranteeing that their experiences fit the subject of the study. This non-random approach helped to provide thorough and complex understanding of how MALL affected motivation and participation.

Data were gathered via observations and semi-structured interviews, an approach that allows for the exploration of participants' own experiences while following a predetermined set of themes. The interview guide was designed to incorporate open-ended questions that concentrate on students' experiences with MALL, their involvement in English language acquisition, and their motivational factors. Questions covered issues such as: (i) How MALL tools are used during the learning process. (ii) How does MALL affect motivation and engagement during learning process. (iii) How does MALL differ to traditional method such as text book method at engaging the class.

The interviews were held in a conducive, quite environment to promote open and open responses. All sessions were audio-recorded with the participants' consent to assure

proper transcription and analysis. Observations were undertaken to acquire data on students participation during learning process employed with MALL and with traditional approach employing book text. Classroom observations happened during two periods, each lasting 90 minutes. The emphasis was on students' behavioural engagement, interactions, and responsiveness during Mobile-Assisted Language Learning (MALL) activities compared to traditional textbook-based activities. Observational data were carefully documented through field notes and classified according to an engagement concept that highlighted attention, participation, and feedback patterns.

The data analysis employed the thematic analysis, to prioritises comprehending participants' viewpoints and elucidating the significance of their experiences (Merriam & Tisdell, 2015). Thematic analysis was conducted on the transcribed interview data through a systematic, stepwise approach. While observational data were cross-referenced to corroborate the findings. The two data sets were triangulated to boost reliability and offer a thorough summary of the events: (i) Familiarisation: Engaging in numerous readings of the transcripts to obtain a full comprehension of the data. (ii) Coding: Recognising and categorising recurrent themes, phrases, and patterns related with engagement and motivation. (iii) Theme Development: Organising codes into overarching topics that match with the research aims, such as "Engagement Factors in English Learning" and "MALL Impact on Motivation" (iv) Verification: Cross-referencing themes with original data and asking expert feedback to guarantee reliability and validity. Verification entailed expert debriefing and cross-referencing topics with the original transcripts to verify consistency and validity. This study employs Self-Determination Theory (SDT) to evaluate motivation, highlighting internal and extrinsic elements that affect students' involvement with MALL (Ryan & Deci, 2000). Self-Determination Theory (SDT) offers a framework to analyse how MALL fosters autonomy, competence, and relatedness—essential elements of enduring motivation in educational contexts.

This study utilised methodological triangulation to improve the reliability and validity of the findings. Interview data were corroborated with classroom observations and relevant literature on MALL and student participation, yielding a more thorough comprehension of the phenomena.

The research examines vocational high school students in Metro City, Lampung, offering distinctive perspectives on the implementation of MALL within Indonesian educational frameworks. This emphasis reveals particular obstacles and potential in incorporating MALL into vocational education, providing insights for analogous educational contexts.

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FINDINGS
Engagement factors in English learning

Students feel that learning English Lessons in class is fundamentally enjoyable, but it also depends on engagement factors, such as the teachers' media and the lesson material.

"Learning English is fun, especially with quizzes." (Student A)
"English learning is enjoyable depending on the material. If it's new, it's more exciting." (Student B)

Students also suggest that their teacher's role in the classroom contributes to its engagement.

> *"Teachers should mix in games to make the class more exciting and Interactive two-way communication between teachers and students is important."* (Student B)
>
> *"Teachers can use rewards and multimedia like PowerPoint to attract attention and make the class more engaging."* (Student C)

Students generally find learning English in the classroom fun, if the learning includes interactive elements. Student engagement is strongly influenced by factors such as the use of media by teachers, the nature of the subject matter, and the use of games or prizes. Obseravtion conducted during the course confirmed that the students responded positively and liked the dynamic teaching strategy. When teachers incorporate quizzes, multimedia presentations, or two-way discussions, student attention and participation increase, which validates students' claims about engagement factors.

MALL preferences

During learning process, students prefer to use mobile phones in learning rather than using traditional methods such as text books.

> *"Learning with a mobile phone is more exciting than using textbooks, which are boring."* (Student A)
>
> *"I prefer mobile learning over books because books make me sleepy."* (Student B)

Students feel more actively engaged when learning tasks involve mobile apps or interactive digital devices. In contrast, lessons that rely on printed materials or lectures show much less enthusiasm and participation.

MALL impact on motivation

Students report that using MALL during the learning process positively influence their motivation in the class.

> *"Using mobile phones makes me more enthusiastic about learning."* (Student B)
>
> *"Mobile learning can increase motivation when lessons are taught through games or quizzes."* (Student C)

This is reinforced by observational data, which shows that students are more engaged and proactive when using the MALL platform. Students often volunteer to participate, compete passionately in gamified tasks, and stay attentive for a longer period of time compared to tasks given in the usual way.

Skill improvement

Using a certain MALL to study improve a certain language skill of students.

> *"Mobile learning helps improve vocabulary but not other skills like speaking."* (Student A)
>
> *"Apps like Duolingo help increase vocabulary and grammar knowledge."* (Student B)
>
> *"Duolingo improves vocabulary and grammar but has limited impact on speaking skills."* (Student C)

Challenges in MALL

There are minimal challenges in using MALL during learning process.

> "*Difficulty arises when encountering phrases that are hard to understand or when the internet connection is poor.*" (Student B)

These challenges were also observed during class. On several occasions, students experienced delays or distractions due to connectivity problems, and some required teacher assistance to understand more complex app instructions or vocabulary.

Table 1. Summary of Findings from Thematic Analysis

Theme	Key Findings	Representative Quote
Engagement Factors in English Learning	Teacher's role, interactive activities, and material affect engagement	"Learning English is fun, especially with quizzes."
MALL Preferences	MALL preferred over traditional methods for its interactivity	"Learning with a mobile phone is more exciting than using textbooks, which are boring."
MALL Impact on Motivation	Motivation increases through gamification and personalized tools	"Using mobile phones makes me more enthusiastic about learning."
Skill Improvement	Vocabulary and grammar skills improve; limited speaking skill impact	"Apps like Duolingo help increase vocabulary and grammar knowledge."
Challenges in Mobile-Assisted Language Learning	Internet issues and comprehension difficulties noted as challenges	"Difficulty arises when encountering phrases that are hard to understand or when the internet connection is poor."

DISCUSSION

Engagement factors in english learning

The results of the interview help highlight the importance of teachers in generating student engagement in the classroom environment. Games and incentive driven interactive techniques are essential which validates the idea presented by Ghorbani & Ebadi's (2020) which confirms the importance of teacher initiated initiatives in promoting motivation. Studies by Luo & Shi (2022) states the use of MALL enhances student focus and involvement by incorporating elements, like games and quizzes. Prior studies have shown that these interactive features and gamified aspects of MALL significantly enhance students' enjoyment and motivation during the learning process.

Studies by Sung et al. (2016) shows that comprehensive instructional design advancements are required to fully leverage the educational advantages that come with mobile devices. The teacher's elaborate design is what enables the media to function well. Teachers are essential in effectively integrating MALL by establishing engaged and rewarding classrooms (Luo & Shi, 2022; Zhou et al., 2023). In summary, by establishing well-organised lesson plans and connecting MALL activities with stated pedagogical objectives,

educators may guarantee that mobile devices boost language acquisition while stimulating critical thinking and collaboration among students.

MALL preferences

The results of this study are in line with Liu's (2020) findings, stating that students prefer MALL over traditional textbooks, highlighting how attractive interactive and customizable tools can be for learners. This choice highlights the necessity of incorporating digital media into traditional teaching methods to sustain attention and engagement. Students expressed a distinct preference for MALL compared to conventional techniques, highlighting its capacity to cater to individual learning styles and enhance the dynamism and engagement of the learning experience.

There are a lot of benefit of using MALL during the learning process as shown by some previous studies. Zhen & Hashim (2022) pointed the effects of MALL can be seen through its ability to reduce language apprehension and anxiety. By simplifying language learning, it can allow students to learn the language faster, thereby lowering the anxiety produced throughout the learning process. Chen, Chen, Jia, and An (2020) also showed that mobile devices greatly boost language learning, particularly in second language acquisition, with the largest gains observed in listening, speaking, and writing skills.

MALL impact on motivation

The noted enhancement in motivation via MALL can be ascribed to intrinsic motivation, propelled by engaging components like quizzes and gamification. This study aligns with Treiblmaier & Putz (2020), who discovered that gamified learning environments enhance persistence and passion.

Skill improvement

The findings are consistent with prior research on the application of MALL. MALL substantially improves vocabulary acquisition and grammatical proficiency, however it has a minimal effect on the development of speaking skills (Rafiq et al., 2021; Zhen & Hashim, 2022). While significant advancements in vocabulary and grammar using MALL, its deficiencies in enhancing speaking abilities underscore the necessity for incorporating interactive speaking elements in mobile platforms.

Challenges in MALL

Common challenges in utilising MALL include poor internet connectivity, distractions, and limited supervision (Estrella, 2024; Stefanovic & Klochkova, 2021). Challenges such as unreliable internet access and vulnerability to disruption were noted, in line with existing findings about the limitations of MALL in various educational settings.

Examining MALL's alignment with self-determination theory

As mentioned by Deci and Ryan (2000), and their Self-Determination Theory (SDT), there are three basic psychological needs that, when met, drive motivation and engagement

in the learning process: autonomy, competence, and relatedness. The results of this study point out that MALL fulfills these requirements and enhances not only intrinsic motivation but also the learning outcomes.

One of the great autonomy provided by education, through the use of MALL, is the students preference of MALL over old methods. On the other hand, MALL encourages learner autonomy because its tools allow learners to organize, observe and assess their own progression independently, thus fostering self-regulation (Estrella, 2024). It empowers decision-making by providing a variety of resources and methodologies, enabling learners to select their preferred modes of engagement with the subject according to their individual needs and preferences. MALL increases motivation and engagement by offering flexibility and accessibility, allowing learners to interact with language learning materials at any time and place, thereby personalising and dynamising the learning experience.

Competence, defined as the perception of effectiveness in goal attainment, is another essential component of Self-Determination Theory (SDT) fulfilled by MALL. Real-time feedback, interactive quizzes, and gamified components enable students to monitor their progress and enhance their self-assurance in their capabilities. Students' reported improvements in vocabulary and grammar skills align with the SDT assertion that a sense of achievement enhances intrinsic motivation. The competence component of Self-Determination Theory (SDT) is well-supported by the use of MALL in English for Specific Purposes (ESP), where learners develop the skills necessary for professional contexts. According to the studies conducted, vocabulary building is an integral part of learning ESP since learning specific lexis is essential for adequate job performance in specific fields (Aravind & Rajasekaran, 2020; Solikhah, 2020). MALL plays an important role in this respect through the provision of engaging technologies, such as Telegram, mobile Apps targeting vocabulary and grammar, empowering non-native speakers to develop their confidence in language skill (Ghorbani & Ebadi, 2020; M. Rafiq et al., 2020).

Moreover, due to MALL flexibility, it enables self-paced learning, where learners can practice at his/her own pace and return to difficult topics which leads to increased sense of achievement (Ali et al., 2020; Kassim & Said, 2020). Another practical use of MALL by teachers is sending supplementary materials and using interesting exercises to maintain the motivation of learners and ensure their engagement in the learning process (Shahzad et al., 2020). By offering immediate feedback and opportunities for skill application, MALL strengthens learners' belief in their ability to succeed, fulfilling the psychological need for competence and preparing them to meet professional demands confidently.

MALL predominantly facilitates personalised learning, although it also promotes social connection through collaborative elements like group challenges and peer engagement. This study examined relatedness, or the demand for social connection, through students' preference for teacher-led interactions and gamified classroom activities. Looi et al. (2011, as cited in Sung, Chang, & Liu, 2016) exhibited the efficacy of incorporating educational software with mobile devices to develop a mobile curriculum for elementary-level natural science education. Their methodology enabled fluid learning in various environments—classrooms, outdoor spaces, and home—while prioritising inquiry-based pedagogy, formative assessment, collaborative learning, and social engagement. MALL significantly improves relatedness through teacher-led interactions and gamified classroom activities; nevertheless, further advancement of collaborative technologies could augment

its impact on social connection. The integration of synchronous communication tools, peer review systems, and virtual discussion forums may expand options for interaction and information sharing. Moreover, reducing barriers such as digital inequities and cultural differences in group dynamics will enable more inclusive and effective support for students' relational needs. These enhancements would not only elevate MALL's relational quality but also correspond with SDT's emphasis on creating profound social connections for sustained inspiration.

MALL effectively correlates with the basic tenets of Self-Determination Theory by addressing students' psychological demands for autonomy, competence, and relatedness. MALL promotes intrinsic motivation and generates substantial engagement by providing tools that facilitate self-regulated learning, promote a sense of achievement through interactive feedback, and support collaborative learning environments. Although this study supports the relevance of Mobile-Assisted Language Learning (MALL) through the perspective of Self-Determination Theory by addressing learners' needs for autonomy, competence, and connectedness, some limitations must be considered when interpreting the findings. The small sample size, only three participants, limits the generalization of outcomes outside of the specific vocational education context. In addition, reliance on self-reported data through interviews can be biased, even though triangulation with classroom observations has been performed. Technological challenges, such as inconsistent internet connectivity, also affect the learning experience and may have affected student engagement levels, particularly when it comes to opportunities for social interaction. In addition, the study's main focus on vocabulary and grammar limits the examination of speaking and writing skills, which are also important components of language competence, particularly in the context of English for a Specific Purpose (ESP). These limitations point to the need for further research with a larger and more diverse sample, mixed-methods design, and a better digital infrastructure to better validate and expand on current findings.

CONCLUSIONS

This study indicates that MALL promotes student engagement and motivation in vocational education, notably within EFL contexts. Key findings show that students responded positively to interactive and gamified mobile learning activities, demonstrating improved motivation, participation, and gains in vocabulary and grammar. MALL effectively supports learner autonomy and competence by offering flexible, personalized learning experiences aligned with students' digital preferences. However, the potential impact of MALL depends on how well its limitations are addressed, particularly in providing opportunities for social connection and developing speaking skills. Technological constraints, such as poor internet connectivity and the lack of collaborative features, were identified as barriers to maximizing its educational potential.

The larger implication of this study is that MALL holds strong promise as a transformative tool for language learning in vocational settings, especially when aligned with the psychological needs defined in SDT. Yet, its success depends on continuous refinement to support not only individual but also collaborative and communicative learning outcomes. Future research should involve larger and more diverse participant groups, explore speaking-oriented mobile tools, and focus on improving digital infrastructure. By

addressing these gaps, MALL can better serve evolving learner needs across varied educational contexts.

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