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SECONDARY EDUCATION STUDENTS' PERCEPTIONS, ENJOYMENT, AND SATISFACTION IN USING MOBILE DEVICES FOR ENGLISH LEARNING

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ABSTRACT

Mobile technology has reshaped the landscape of English language learning by providing students with greater accessibility, flexibility, and engagement. Understanding learners' responses to this shift is essential for optimizing its pedagogical value. This study investigates secondary school students' perceptions, enjoyment, and satisfaction in using mobile devices for English learning. Employing a survey design, the research involved 100 students (48 males, 52 females) who completed a structured questionnaire distributed via Google Forms. The instrument was adapted from Al Arif et al. (2024), which was developed based on the Technology Acceptance Model (TAM), providing a strong theoretical basis for measuring perception, enjoyment, and satisfaction. Data were analyzed using interval-level interpretation based on Pimentel's (2010) scale. The findings reveal that students perceive mobile devices as highly usable, engaging, and motivating, with perception, interest, and enjoyment rated in the very high category and satisfaction rated high. Ease of use emerged as the most significant factor influencing positive attitudes, while enjoyment and interest contributed to sustained engagement and autonomous learning. The study highlights the practical implications of integrating mobile devices into structured, goal-oriented learning activities that balance interactivity, accessibility, and pedagogical guidance. Despite its contributions, the research is limited to a single school and relies on self-reported measures, which may affect generalizability. Overall, this study provides empirical evidence that mobile-assisted learning is an effective, flexible, and motivating tool for enhancing English proficiency among secondary school students, offering both cognitive and affective benefits when thoughtfully implemented.

Keywords: *mobile-assisted language learning; secondary education; EFL; perceptions; enjoyment; satisfaction*

Over the past two decades, mobile technologies have become an inseparable part of modern life. Their widespread use has transformed how people communicate, socialize, and access information across various fields, including education. For many students, especially those belonging to the digital generation, smartphones and tablets are not only tools for entertainment

but also valuable instruments for learning. The presence of these devices enables students to access knowledge more flexibly and independently, particularly in situations where access to conventional resources remains limited. As a result, mobile technologies have opened broader opportunities for inclusive and continuous learning in formal educational setting.

The integration of mobile technologies into education has led to the emergence of Mobile-Assisted Language Learning (MALL). This concept emphasizes how portable devices can facilitate learners' engagement with authentic language materials beyond classroom boundaries (Kukulska-Hulme, 2020). Unlike traditional learning, which is limited by time and place, MALL provides learners with the flexibility to study anytime and anywhere. Bostock (2020) explains that such flexibility promotes deeper exposure and more consistent practice, both of which are essential in developing language proficiency. Furthermore, the use of MALL supports learner-centered approaches that encourage autonomy and authentic interaction, enabling students to take more responsibility for their language learning process.

Previous studies have shown that English as a Foreign Language (EFL) learners benefit significantly from mobile-assisted learning environments (Garzón et al., 2023; Jeong, 2022; Shadiev et al., 2022, 2023). Mobile devices offer access to digital dictionaries, grammar and vocabulary applications, multimedia materials, podcasts, and communication platforms that connect learners with peers or native speakers. These resources not only support cognitive development but also enhance affective aspects such as motivation, confidence, and learning independence. Kayra (2024) and Xodabande and Atai (2022) found that mobile learning applications featuring interactive or gamified elements can improve vocabulary retention and promote autonomous learning. Such findings highlight the potential of mobile devices to support continuous and enjoyable language learning that extends beyond classroom boundaries.

In this study, enjoyment is conceptualized as learners' positive emotional experience and sense of pleasure derived from using mobile devices to learn English, which sustains their motivation and engagement (Deakin Crick & Goldspink, 2014; Zepeda et al., 2020). It focuses specifically on the affective reaction of students toward learning activities, rather than on broader psychological constructs such as self-efficacy or attitude. When learners enjoy the learning process, they tend to be more persistent and more willing to engage in challenging tasks. Mobile learning environments provide interactive and flexible experiences that can enhance enjoyment while reducing anxiety. Learners often feel more relaxed when practicing English through mobile applications because they can do so informally and repeatedly without fear of making mistakes (Kacetl & Klímová, 2019; Miangah & Nezarat, 2012; Nehe et al., 2023). .Closely related to enjoyment, satisfaction represents the learners' overall evaluative judgment of how well the mobile learning experience meets their expectations and learning goals (Alyoussef, 2021; Joudeh et al., 2024). While enjoyment refers to an immediate affective response, satisfaction reflects a more stable and holistic assessment that influences the continued acceptance of mobile-assisted learning. Baek and Guo (2019) further argued that satisfaction depends on both the functionality of mobile devices and the quality of instructional design. Even though learners may find mobile learning enjoyable, they will only feel satisfied when it contributes meaningfully to their language improvement. Thus, enjoyment and satisfaction together provide a comprehensive understanding of learners' affective and evaluative experiences in mobile-assisted language learning.

Although research on MALL has increased in recent years, several gaps remain in the literature. Most studies have focused on university students or adult learners in developed contexts (Al Mukhallafi, 2019; Alharbi, 2024; Anwar et al., 2022; Syafrizal, 2024), while secondary school students in developing countries have received limited attention. This group is particularly

important because adolescence is a critical stage in which motivation, attitudes, and learning habits are formed. Moreover, secondary school students often use mobile devices for both academic and non-academic purposes, such as communication or entertainment, which may influence their perceptions and behaviors toward learning (Ahmad, 2020). These characteristics make it necessary to investigate how secondary students perceive and respond to the use of mobile devices in language learning.

In Indonesia, the adoption of mobile technologies in education has increased rapidly along with improvements in internet access and digital literacy. However, the integration of mobile-assisted English learning at the secondary level has not been extensively explored. Existing research tends to focus on issues such as unequal access, digital distraction, or limited teacher support, while little attention has been paid to students' own perceptions, enjoyment, and satisfaction. Understanding students' perspectives is essential to identify how mobile technologies can be effectively utilized to enhance both affective engagement and language learning achievement in Indonesian classrooms. Empirical evidence from this context is expected to provide valuable insights for educators and policymakers in developing strategies that optimize mobile learning implementation.

The present study aims to explore Indonesian secondary education students' perceptions, enjoyment, and satisfaction in using mobile devices for English learning. A descriptive quantitative design was employed to obtain a comprehensive understanding of students' affective and evaluative responses toward mobile-assisted language learning. Specifically, this study seeks to answer the research question: *How do students perceive the use of mobile devices for English learning?* The findings of this study are expected to contribute to the growing body of knowledge on mobile learning by providing insights into how adolescents experience mobile-based English learning in developing contexts. Furthermore, the results are anticipated to inform teachers and curriculum developers on how to design engaging and effective mobile-assisted learning environments that foster both enjoyment and satisfaction among learners.

METHOD

This study employed a survey research design to systematically investigate secondary education students' perceptions, enjoyment, and satisfaction in using mobile devices for English language learning. The survey design was considered appropriate because it provides a structured way to collect quantitative data from a large number of respondents within a limited period of time. As noted by Creswell (2012), survey research enables researchers to describe trends, attitudes, and opinions of a population by studying a sample drawn from that population. The strength of this approach lies in its ability to obtain generalizable data and identify relationships among variables without manipulating any of them. In this study, the survey method was applied to provide a comprehensive overview of students' experiences in mobile-assisted language learning, particularly in the Indonesian secondary school context.

The study was conducted in Gunungkidul, a regency in Yogyakarta Special Region, Indonesia, where access to educational technology has been gradually increasing. The population included all secondary school students who were learning English as a compulsory subject and used mobile devices to support their learning activities. From this population, a total of 100 students participated in the research. The participants consisted of 48 male and 52 female students aged between 15 and 17 years old. They represented students from different grade levels in a public secondary school that had previously introduced mobile-based learning activities as part of its

English instruction. This demographic composition was considered suitable to represent the characteristics of secondary school learners in a developing educational setting.

The sampling procedure followed a non-probability technique, specifically convenience sampling. This method was chosen because it allowed the researcher to reach participants who were easily accessible and willing to contribute to the study. As stated by Etikan et al. (2015), convenience sampling is appropriate in educational settings where the researcher aims to collect initial empirical evidence from a naturally available group. The selection was guided by the principle of voluntary participation, ensuring that all respondents had prior experience using mobile devices in English learning contexts. This approach was practical and ethically appropriate, especially considering the school-based nature of the data collection.

The primary data source of this study was a structured questionnaire designed to measure three major constructs: students' perceptions, enjoyment, and satisfaction in using mobile devices for English language learning. The questionnaire items were adopted from Al Arif et al. (2024), who investigated technology use in English learning through a structural equation modeling framework grounded in the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). These theoretical foundations align with the present study's objective of exploring learners' cognitive, affective, and evaluative responses toward mobile-assisted English learning, making the instrument suitable for addressing the research purpose.

From the original 21-item instrument, four items were selected based on their conceptual relevance to the study variables. One item represented students' perception of usefulness and ease of use, two items reflected enjoyment during mobile-assisted English learning, and one item measured overall satisfaction with mobile-based learning experiences. Although only four items were used, they were carefully chosen to capture the core dimensions of the constructs while ensuring the questionnaire remained concise and appropriate for secondary school respondents. Each item was rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), enabling participants to express varying degrees of agreement and facilitating descriptive quantitative analysis.The data collection process was conducted in collaboration with English teachers at the participating school. The questionnaire was administered online through Google Form, a platform that was chosen for its accessibility, simplicity, and automatic data recording features. The link to the questionnaire was distributed to students during their regular English lessons to ensure full participation and to clarify any questions regarding the items. Before completing the questionnaire, the participants were informed about the objectives of the study, the voluntary nature of their participation, and the confidentiality of their responses. They were also assured that their data would be used solely for academic purposes and would not affect their grades or school performance. Informed consent was obtained electronically from all participants before they began the questionnaire. The entire data collection process was completed within two weeks.

The collected data were automatically stored in the researcher's Google Drive account and then exported into SPSS for analysis. Descriptive statistical techniques were used to summarize and interpret the data. Specifically, the mean and standard deviation were computed for each item to identify the central tendencies and variability of students' responses. Following the recommendation of Pimentel (2010), the interpretation of the mean scores was categorized into five levels of agreement: very low, low, moderate, high, and very high. This categorization helped to provide a clear and interpretable description of how students perceived their experiences with mobile-assisted learning. In addition, frequency and percentage analyses were conducted to describe demographic characteristics such as gender and grade level distribution.

Table1. Interpretation Scale of Respondent Scores

Scale	Interpretation
1.00–1.80	Very Low
1.81–2.60	Low
2.61–3.40	Moderate
3.41–4.20	High
4.21–5.00	Very High

(Source: Pimentel, 2010**)**

The analysis focused on identifying patterns and tendencies in students' perceptions, enjoyment, and satisfaction toward mobile-based English learning. Mean values close to 5 indicated strong positive agreement, reflecting high levels of perceived usefulness and satisfaction, while mean values closer to 1 represented low levels of agreement. The descriptive results were later used to support the discussion and to draw implications for English language teaching practices. The use of descriptive statistics was considered sufficient for this study because its main objective was to provide an empirical overview rather than to test causal relationships among variables. The findings derived from this analytical approach provided both numerical precision and interpretive clarity to understand students' experiences with mobile technology in English learning contexts.

FINDINGS

This section presents the findings derived from the data analysis and provides the empirical answers to the research questions concerning students' perceptions, enjoyment, and satisfaction in using mobile devices for English learning. The analysis results are summarized descriptively through the mean and standard deviation values, which represent the central tendency and variability of the responses. To facilitate interpretation, the data were analyzed based on Pimentel's (2010) interval scale. The findings highlight that students generally demonstrated positive responses toward mobile-assisted English learning.

Table 2. Students' Perceptions, Enjoyment, and Satisfaction in Using Mobile Devices

No	Item(s) Statement	Mean	SD
1	I find mobile devices easy to use.	4.54	0.61
2	I am interested in using mobile devices for English learning.	4.36	0.76
3	I enjoy using mobile devices for English learning.	4.37	0.82
4	I am satisfied with English learning through mobile devices.	4.09	0.79

The findings show that the first item, which measured students' perception of ease of use, achieved the highest mean score (M = 4.54, SD = 0.61). This score falls within the very high

category, indicating that students perceive mobile devices as easy to operate, intuitive, and user-friendly. The low standard deviation demonstrates consistency among respondents, suggesting that almost all participants agreed with the statement. This result reinforces the notion that technological usability is a determining factor in the successful adoption of mobile-assisted learning environments. This finding aligns with the study of Venkatesh et al. (2012), who asserted that perceived ease of use directly influences learners' acceptance of technology in educational contexts.

The second item, which assessed students' interest in using mobile devices for English learning, also reached a very high category (M = 4.36, SD = 0.76). This indicates that students not only recognize the practicality of mobile devices but also show strong enthusiasm toward integrating them into English lessons. Compared to the previous item, the slightly higher standard deviation reflects some variation in students' interest levels, possibly due to differences in prior technological experience or learning preferences. Nonetheless, the dominant trend remains positive. This finding supports the results of Hidayati and Diana (2019), who reported that mobile learning motivates students by offering flexibility and autonomy in their language learning process.

The third item, representing enjoyment, recorded a mean score of 4.37 (SD = 0.82), which also belongs to the very high category. This shows that students feel genuine enjoyment when learning English through mobile devices. Enjoyment is a crucial affective factor influencing engagement and learning persistence. The result suggests that mobile-assisted activities create a more relaxed and interactive atmosphere compared to traditional classroom methods. This finding contrasts slightly with the study by Cochrane (2014), who found that initial enthusiasm for mobile learning tends to decline over time when not supported by pedagogical innovation. In this study, the consistently high enjoyment score indicates that mobile-based activities were perceived as engaging and relevant to students' learning needs.

The fourth item, related to satisfaction, obtained the lowest mean score (M = 4.09, SD = 0.79), yet it remained in the high category. This suggests that students were generally satisfied with the use of mobile devices for English learning, although their satisfaction level was slightly lower than their perceptions, interest, and enjoyment. The difference may reflect students' expectations for more structured guidance or teacher support that may not be fully met by self-directed mobile learning. This finding aligns with the observation of Al Arif et al. (2024), who noted that while mobile technology enhances engagement, students' satisfaction may depend on the degree of instructional integration and feedback provided by teachers.

Overall, the findings reveal a strong positive attitude among secondary school students toward the use of mobile devices in English learning. All mean scores ranged from high to very high, suggesting that mobile learning is perceived as both beneficial and enjoyable. Compared to previous studies, the current results emphasize the growing acceptance of mobile-assisted language learning among younger learners in Indonesian secondary schools. Unlike earlier research that reported mixed results due to technological barriers or lack of motivation (e.g., (Hwang & Fu, 2019)), this study demonstrates that students are ready and motivated to adopt mobile technologies as part of their English learning experience. The high levels of perception, enjoyment, and satisfaction reflect that mobile learning has become an integral and positive component of students' language education journey.

DISCUSSION

The findings of this study clearly indicate that secondary education students in Gunung Kidul hold very positive attitudes toward using mobile devices for English language learning. This general tendency reflects the growing normalization of mobile technology in Indonesian classrooms and resonates with the global trend toward mobile-assisted learning. Among all measured dimensions, ease of use emerged as the strongest factor influencing students' positive perceptions. This result provides empirical support for the Technology Acceptance Model (TAM), which emphasizes perceived ease of use as one of the most powerful determinants of technology adoption (Davis, 1989). When learners perceive that a tool is simple to operate, they are more likely to use it frequently and integrate it naturally into their learning habits. The high mean score for ease of use in this study suggests that technical challenges or accessibility barriers are minimal among the participants. Most students in the current generation are digital natives who are already familiar with mobile interfaces, which enables them to adapt quickly to educational applications. This supports previous findings by Ebadi and Raygan (2023) and Sánchez-Prieto et al. (2017), who concluded that ease of use is not merely a technical factor but a psychological one that enhances confidence, reduces anxiety, and increases persistence in technology-mediated learning.

The consistent agreement among participants regarding ease of use also highlights an important contextual point. In Indonesian secondary schools, where traditional classroom instruction remains dominant, the introduction of mobile learning may represent a significant pedagogical shift. However, the results demonstrate that this shift is unlikely to face strong resistance from students, at least on the technical level. In fact, the intuitive nature of mobile devices provides an entry point for teachers who wish to modernize their instructional methods without overwhelming learners with complex systems (Bai, 2010; Dias & Victor, 2022; Hedberg, 2011). The implication is that the success of mobile-assisted English learning will depend less on students' technological readiness and more on teachers' ability to design engaging, pedagogically sound activities that utilize this readiness effectively.

Equally significant is the finding that students reported very high levels of interest in using mobile devices for English learning. Interest represents the motivational foundation upon which sustained learning engagement can be built. When learners are genuinely interested in a tool or method, they are more likely to explore its features, engage actively with content, and persist in their learning tasks. The result aligns with the notion of learner autonomy in language education, where motivation is closely linked to opportunities for self-directed exploration. Tran and Vuong (2024) found that mobile-assisted learning environments promote autonomy by enabling students to select the time, place, and mode of engagement with English materials. The present study confirms this observation within the Indonesian secondary context, showing that mobile devices appeal to students not only because of convenience but also because they empower learners to make decisions about their own learning process.

Moreover, this high level of interest reflects the broader motivational mechanisms of contemporary learners, who often prefer multimodal, interactive, and visually engaging learning experiences. Unlike printed textbooks or traditional drills, mobile applications offer dynamic input such as videos, games, and instant feedback, which stimulate curiosity and sustain concentration. This supports Sølvberg and Rismark (2012) argument that mobile learning fosters continuity between formal and informal learning spaces, enabling learners to maintain engagement beyond the classroom. Therefore, interest in mobile learning is not merely about novelty but about the freedom and interactivity that the technology affords. For Indonesian students, whose English

exposure outside school may be limited, mobile devices provide an alternative environment where practice can continue seamlessly.

Enjoyment also emerged as a crucial affective factor in this study. The high mean score for enjoyment indicates that students not only value mobile devices for their utility but also derive pleasure from using them in learning contexts. Enjoyment is a central component of Self-Determination Theory (Ryan & Deci, 2000), which posits that intrinsic motivation arises when activities are perceived as enjoyable, autonomous, and competence-enhancing. When learners enjoy a learning process, they are more likely to sustain their efforts even when facing difficulties. The data from this study demonstrate that mobile-assisted English learning fulfills these conditions by offering tasks that are interactive, flexible, and personally relevant. Similar findings have been reported by Al Arif et al. (2024), who observed that mobile learning environments promote emotional engagement and reduce anxiety, particularly in speaking and listening activities. This is because mobile tools create a private and low-pressure learning space where students can experiment with language without fear of embarrassment.

Furthermore, the link between enjoyment and motivation carries pedagogical implications. Teachers can leverage the enjoyable aspects of mobile learning to design lessons that blend entertainment with education, often referred to as "edutainment." When students experience learning as fun and personally meaningful, they are likely to develop positive attitudes toward English as a subject (Ramzan et al., 2023). The long-term effect of such emotional engagement can be increased self-confidence and willingness to communicate, two essential components of communicative competence. Enjoyment, therefore, should not be viewed as a secondary or peripheral outcome but as a primary driver of language learning success.

Despite these encouraging findings, the study also revealed that satisfaction scored lower than the other three dimensions, although it still remained in the high category. This result calls for deeper interpretation. Satisfaction reflects learners' overall evaluation of whether their experiences meet their expectations and contribute to meaningful learning progress (Di Sarno-García, 2024). While students in this study enjoyed and valued the use of mobile devices, their satisfaction may have been tempered by the extent to which mobile learning translated into tangible language improvement. In other words, students may have appreciated the process but were uncertain about the measurable outcomes. This interpretation aligns with Camilleri and Camilleri (2023), who found that learners often enjoy using digital applications but remain skeptical about their academic effectiveness. Such skepticism may arise when mobile-based activities are not explicitly connected to curricular goals or assessment systems.

The lower satisfaction levels may also point to a structural issue in classroom implementation. Many secondary schools in Indonesia still rely on teacher-centered pedagogies, and mobile learning may be used informally or inconsistently across classes. Without systematic integration into lesson plans, students may perceive mobile learning as supplementary rather than essential. Consequently, their satisfaction may depend on how well teachers guide them in using mobile devices as tools for achieving learning objectives rather than mere entertainment. As Lee et al. (2018) notes, satisfaction is shaped not only by technology itself but also by the quality of instructional design, the relevance of content, and the teacher's facilitative role. Thus, effective teacher involvement remains a key determinant of whether mobile learning experiences translate into sustainable satisfaction and achievement.

The discussion of satisfaction also highlights the tension between autonomy and guidance in mobile-assisted learning. Although autonomy is a positive feature that empowers students, excessive independence without adequate scaffolding can lead to uncertainty or fragmented

learning experiences. Lai et al. (2022) emphasize that effective mobile learning requires a balance between learner control and teacher support. The current findings suggest that secondary students appreciate flexibility but still rely on structured feedback and monitoring from teachers. Therefore, teacher training programs should focus on integrating mobile technologies within pedagogically sound frameworks, where digital tools complement rather than replace instructional guidance.

Gender composition in this study further reinforces the reliability of these findings. With a relatively balanced sample of 48 male and 52 female students, the results reflect perspectives that are broadly representative of the population. Interestingly, both male and female students reported equally high perceptions, enjoyment, and interest, suggesting that gender differences may be narrowing in the context of mobile learning. Earlier studies, such as Gebhardt et al. (2019), reported that male students often show greater enthusiasm for technology-based learning. However, the equal engagement observed in this research might indicate a generational shift, where access to mobile devices and digital literacy have become universal among adolescents. This convergence underscores the inclusive potential of mobile learning as a medium that transcends gender-based digital divides.

Overall, this study's findings contribute to a nuanced understanding of mobile-assisted language learning in the Indonesian secondary context. While many international studies have focused on university learners, the present research demonstrates that secondary students are equally capable of and enthusiastic about adopting mobile technologies. These findings extend prior scholarship by situating MALL within the realities of younger learners who are still developing independent study habits. The combination of strong ease of use, high interest, and notable enjoyment confirms that mobile learning holds great promise for fostering engagement and motivation. However, the relatively lower satisfaction underscores the need for pedagogical innovation. Teachers, curriculum designers, and policymakers should collaborate to ensure that mobile learning is purposefully designed to align with curriculum objectives, provide feedback mechanisms, and demonstrate measurable outcomes.

In summary, the discussion reveals that mobile devices serve not only as tools for accessing language materials but as catalysts for transforming the learning experience. The results reinforce theoretical perspectives such as TAM and Self-Determination Theory while simultaneously highlighting contextual challenges related to satisfaction and pedagogical structure. Compared to earlier studies (Al Arif et al., 2024; Shi, 2025), this research provides empirical evidence from a less examined educational level and cultural setting, thereby expanding the scope of MALL research. The implications are both theoretical and practical: while theories of technology acceptance and motivation explain why students embrace mobile learning, classroom practices must evolve to ensure that such engagement translates into authentic learning gains. Future studies could adopt mixed-method or longitudinal designs to explore how perceptions, enjoyment, and satisfaction evolve over time and how these affect measurable language proficiency. In doing so, researchers and educators can move closer to realizing the full educational potential of mobile-assisted English learning in secondary education.

CONCLUSION

This study examined secondary school students' perceptions, enjoyment, and satisfaction in using mobile devices for English learning. The findings revealed that students held highly positive attitudes toward mobile-assisted learning, particularly regarding ease of use, interest, and enjoyment, while satisfaction remained high but relatively lower. These results indicate that

mobile devices are effective tools for enhancing students' motivation, engagement, and autonomy in learning English. The findings align with the Technology Acceptance Model (Davis, 1989), confirming that perceived ease of use strongly influences learners' acceptance of technology, and with Self-Determination Theory (Ryan & Deci, 2000), which underscores the importance of enjoyment as a driver of intrinsic motivation in language learning.

The significance of this research lies in its contribution to the growing understanding of how mobile-assisted learning operates within the context of secondary education in Indonesia. By extending the discussion of mobile learning beyond university-level research, this study provides empirical evidence that younger learners also benefit from flexible, technology-supported environments. The results highlight that effective mobile learning requires not only technological accessibility but also pedagogical intentionality. Teachers are encouraged to integrate mobile devices into structured, interactive, and communicative learning tasks to sustain both cognitive and affective engagement. Policymakers and educational institutions should also provide training and support to ensure that teachers can design meaningful mobile-assisted learning experiences that promote autonomy and engagement.

Despite the promising outcomes, the study acknowledges several limitations. The research involved a single secondary school with a limited sample size, and the reliance on self-reported data may reduce objectivity. Future studies should involve larger and more diverse samples across different regions and employ longitudinal or experimental designs to explore causal relationships between mobile-assisted learning and academic performance. Qualitative methods such as interviews or classroom observations may also offer deeper insights into learners' experiences. Overall, this study underscores that mobile devices hold strong potential as tools for English learning when effectively aligned with pedagogical goals, fostering both enjoyment and meaningful language development in secondary education settings.

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