Explaining Perceived ESL Learning Outcomes in Mobile-Assisted English Learning Through Self-Determination Theory

Mohd Nur Fitri Mohd Salim[1], Mohamad Safwat Ashahri Mohd Salim[2*], Dianna Suzieanna Mohamad Shah[3], Asmahanim Haji Mohamad Yusuf[4]

[1,4]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Negeri Sembilan, Malaysia

[2]Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Perak, Malaysia

[3]Akademi Pengajian Bahasa, Universiti Teknologi MARA, Shah Alam, Malaysia

***Corresponding Author**

DOI: https://doi.org/10.47772/IJRISS.2026.100300384

Received: 05 March 2026; Accepted: 13 March 2026; Published: 10 April 2026

ABSTRACT

The rapid growth of mobile devices among higher education students has opened new doors to the application of Mobile-Assisted Language Learning (MALL), a way for students to explore English language learning outside of traditional classroom settings. Previous studies have shown the potential of mobile technology to improve student performance in their second languages; however, there is little research into what motivates learners' perceptions of learning outcomes through MALL. Grounded within Self-Determination Theory (SDT), this study explored whether three motivational variables: interest/enjoyment, perceived competence, and value/usefulness are predictors of learners' perceptions of ESL learning outcomes through mobile-assisted learning environments. The methodology involved a quantitative, cross-sectional survey of 135 undergraduate students from a Malaysian public university, all of whom had experience in using either smartphones or mobile apps for learning English. Participants completed an adapted version of the Intrinsic Motivation Inventory (IMI) and a measure assessing participants' perceived ESL learning outcomes. Using SPSS software, descriptive statistics, reliability analysis, Pearson correlation coefficients and multiple regression analysis were used to analyse data. Findings indicated that participants reported moderate levels of motivation towards mobile-assisted ESL learning (M = 3.92), as well as moderate levels of perceived ESL learning outcomes (M = 3.88). Results also showed that all of the motivational constructs (i.e., interest/enjoyment, perceived competence, and value/usefulness) were positively correlated with learners' perceived ESL learning outcomes. Lastly, results from the multiple regression analyses found that motivation explained approximately 55% of the variance in learners' perceived ESL learning outcomes, and that value/usefulness emerged as the most powerful predictor of perceived ESL learning outcomes, followed by interest/enjoyment and perceived competence. These findings support the contention that learner motivation plays a pivotal role in determining learners' perception of the effectiveness of mobile-assisted ESL learning. This study provides further theoretical grounding for the growing body of MALL research and demonstrates the importance of understanding how learners perceive the motivational aspects of mobile-assisted language learning in higher education.

INTRODUCTION

Mobile technology and mobile learning have dramatically altered the higher education environment, especially in terms of English language learning. Mobile Assisted Language Learning (MALL) affords students flexibility in accessing learning materials at any time from any location, thus allowing for greater self-directed learning outside of the confines of the classroom (Salim et al., 2025; Karim et al., 2020). As students frequently utilise digital technologies for both academic and personal reasons in university contexts, it follows logically that mobile devices are increasingly being utilised as tools for English as a Second Language (ESL) learning (Mohd Salim, 2025)

Research has shown that mobile learning has positive effects on language development, particularly vocabulary acquisition and overall English performance (Wu, 2015; Lin & Lin, 2019; Garzon et al., 2023; Yusuf et al., 2024). Additionally, meta-analytic data demonstrate that mobile-assisted interventions produce statistically significant improvements in English language outcomes over those of traditional methods (Salim et al., 2024; Garzon et al., 2023). This research highlights the pedagogical potential of mobile technology for language acquisition.

While much research has been conducted on the performance-based outcomes of mobile-assisted ESL learning, considerably less research has focused on the psychological processes that contribute to the efficacy of mobile-assisted ESL learning. Although simply having access to mobile technology does not guarantee achieving desired learning outcomes, students' motivational orientations towards mobile learning may play a key role in whether technological affordances result in perceived or actual language gains (Krisnan et al., 2022)

Self-Determination Theory (SDT) is a theory that is particularly relevant to the analysis of this relationship. Developed by Edward L. Deci and Richard M. Ryan, SDT explains that intrinsic motivation is fostered when individuals experience enjoyment, competence, and value within an activity (Mohd Salim et al., 2020; Deci & Ryan, 2000). These elements affect engagement, persistence, and perceived effectiveness. Within digital learning environments, the motivational aspects that may significantly affect the learning process include students' interest in the activities, students' confidence in their ability to use the technology for language enhancement, and students' perception of the utility of the technology (Wan Mustapha et al., 2019).

In the case of mobile-assisted ESL learning, students may vary greatly in how enjoyable they find mobile-based learning, how confident they are using mobile apps for language development, and how valuable they find such tools. These motivational beliefs may, in turn, determine how strongly students believe that mobile learning improves their vocabulary, reading comprehension, writing, speaking confidence, and overall English performance (Adnan, 2025). Despite numerous studies establishing the efficacy of mobile learning for vocabulary development and engagement (Lin & Lin, 2019; Garzón et al., 2023), there remains a need to assess the extent to which motivational variables predict perceived ESL learning outcomes in university contexts. It is particularly important to understand this relationship in university contexts where mobile learning is typically driven by the student themselves and is self regulated rather than strictly controlled by the instructor.

This study, therefore, investigates the relationship between students' motivation for mobile-assisted ESL learning and their perceived ESL learning outcomes. Specifically, this study will investigate three motivational dimensions: students' interest/enjoyment, students' perceived competence, and students' value/usefulness to evaluate their predictive impact on perceived improvements in English language skills. By focusing on the motivational factors that drive its effectiveness, this study contributes to a more psychologically grounded understanding of mobile-assisted language learning.

The following research questions guided the study:

1. What are the levels of students' motivation toward mobile-assisted ESL learning?
2. What are the levels of perceived ESL learning outcomes associated with mobile-assisted learning?
3. To what extent do motivational dimensions (interest/enjoyment, perceived competence, and value/usefulness) predict perceived ESL learning outcomes?

By addressing these questions, the study aims to extend current MALL research beyond performance metrics and to highlight the central role of learner motivation in shaping perceptions of the effectiveness of mobile-assisted English learning.

CONCEPTUAL FRAMEWORK

The present study is grounded in **Self-Determination Theory (SDT)**, developed by Edward L. Deci and Richard M. Ryan. SDT posits that individuals are more likely to engage deeply in learning activities when three core psychological needs are supported: autonomy, competence, and relatedness (Deci & Ryan, 2000). Within

educational contexts, intrinsic motivation—characterised by interest, perceived competence, and perceived value—plays a critical role in shaping engagement and learning outcomes. In mobile-assisted English language learning (MALL), smartphones and applications provide learners with flexible, self-paced, and interactive environments. However, the effectiveness of these technological affordances depends not only on their availability but also on learners' motivational perceptions of their use. Accordingly, the present framework conceptualises motivation as the primary explanatory mechanism influencing perceived ESL learning outcomes.

Motivational Constructs

Three motivational dimensions derived from the Intrinsic Motivation Inventory (IMI) were included:

Interest/Enjoyment

This dimension reflects intrinsic motivation, or the degree to which learners find mobile-assisted ESL learning engaging and enjoyable. According to SDT, enjoyment enhances persistence and cognitive investment in learning tasks.

Perceived Competence

Perceived competence refers to learners' confidence in their ability to successfully learn English using mobile applications. SDT suggests that when learners feel capable, they are more likely to experience higher motivation and stronger perceived outcomes.

Value/Usefulness

This dimension reflects learners' perceptions of mobile-assisted ESL learning as meaningful and beneficial. Perceived value strengthens internalisation of learning goals and encourages sustained engagement. Together, these three constructs represent learners' motivational orientation toward mobile-assisted ESL learning.

Outcome Variable: Perceived ESL Learning Outcomes

The dependent variable in this framework is Perceived ESL Learning Outcomes, defined as students' self-reported perceptions of improvement in vocabulary acquisition, reading comprehension, writing skills, speaking confidence, pronunciation, and overall English performance resulting from mobile-assisted learning. While prior research has demonstrated measurable gains in mobile-assisted language learning (Shah et al., 2025c; Garzón et al., 2023; Lin & Lin, 2019), this study focuses on perceived learning outcomes as an important psychological indicator of learning effectiveness. Perceived improvement can influence continued use of mobile technologies and sustained engagement in language learning.

Structural Relationships

The conceptual framework proposes that motivational dimensions directly predict perceived ESL learning outcomes. Specifically, students who experience greater enjoyment, feel more competent, and perceive higher value in mobile-assisted ESL learning are expected to report stronger perceived improvements in English skills (Adnan et al., 2024).

Hypotheses

Based on Self-Determination Theory and prior mobile learning research, the following hypotheses were formulated:

- **H1:** Interest/Enjoyment positively predicts perceived ESL learning outcomes.
- **H2:** Perceived Competence positively predicts perceived ESL learning outcomes.
- **H3:** Value/Usefulness positively predicts perceived ESL learning outcomes.

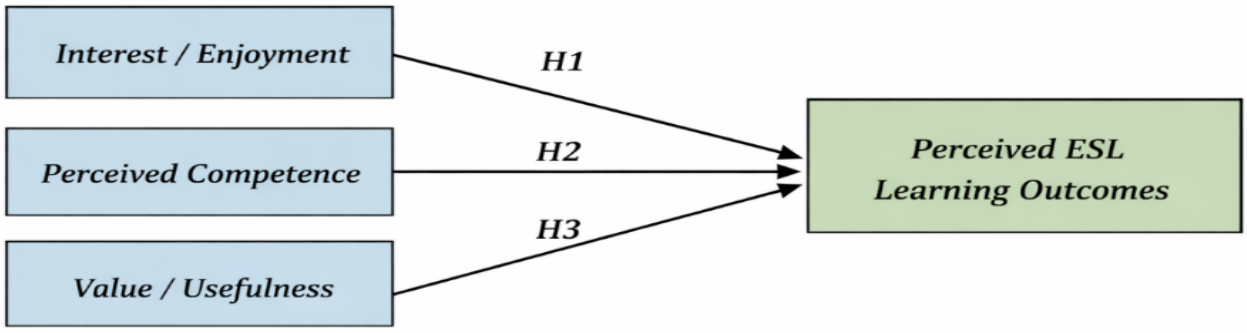

Figure 1. Conceptual Framework

LITERATURE REVIEW

Mobile-Assisted Language Learning (MALL) in Higher Education

Smartphones and apps are now an important part of both academics and daily life for students, and thus, they represent a new way to access learning materials and communications. For the study of English as a second language (ESL) Mobile-Assisted Language Learning (MALL) has emerged as one of the most used approaches in language teaching to allow students to interact with the language outside of the classroom. While there are many other ways to measure the effectiveness of mobile learning for language development, empirical studies show that it can improve language skills, particularly vocabulary development and retention (Salim et al., 2025). At the instructional level, apps and phones provide many tools that can help support language learning, including multimedia input, interactive quizzes, immediate feedback, spaced repetition, and more. Additionally, because phones are portable, micro-learning opportunities exist where students can access English content at any time during the day in short bursts. Micro-learning is particularly useful for university students with busy schedules and many responsibilities. Prior research in mobile-assisted language learning has largely focused on the measurable improvements in language skills, but there is growing recognition that simply providing students with technological tools does not automatically lead to successful learning. Rather, students' psychological involvement in mobile learning environments may determine whether mobile learning tools ultimately result in improved language skills. Therefore, research is shifting from focusing on the efficacy of the technology itself to the importance of student motivation as a key factor in determining learning outcomes in mobile-assisted ESL learning.

Motivation in Language Learning

Motivation has been identified as a primary factor in determining the level of success students achieve in second language acquisition. Studies of motivation in applied linguistics have shown that students who are highly motivated tend to spend more time on tasks, stay engaged with course material longer than unmotivated students, and produce better learning outcomes than their less motivated peers (Shah et al., 2025a). Motivational constructs also affect how much effort students put into learning a second language and how willing students are to persevere over obstacles in achieving their language learning goals.

Current theories of second language (L2) motivation increasingly focus on the role of internalised goals and self-referenced beliefs. Students who view language learning as being meaningful and connected to their own goals will generally be more invested in their language learning. As a result, this investment can lead to increased

motivation to continue engaging in language learning activities. In higher education, which requires students to work independently and manage their own learning, motivation is particularly important (Tahir et al., 2025).

As technology-based learning becomes more prevalent, motivation is becoming more important than ever before. Technology-based learning environments require students to take greater responsibility for directing their own learning than traditional teacher-directed instruction. Many times, in mobile-assisted ESL learning, students make decisions about when, how, and how often they want to use technology to learn a second language. Therefore, it is essential to understand motivational processes to explain variability in the experiences and outcomes of mobile-assisted ESL learning.

Self-Determination Theory in Educational Contexts

Edward L. Deci and Richard M. Ryan created Self-Determination Theory (SDT), a comprehensive theory of motivation in educational settings (Deci & Ryan, 2000). SDT defines two types of motivation: intrinsic motivation — students participate in an activity due to the pleasure derived from it — and extrinsic motivation — students participate due to external rewards or pressures. SDT also identifies three fundamental psychological needs: autonomy, competence, and relatedness. When these needs are fulfilled, individuals are more likely to experience intrinsic motivation and psychological well-being.

In educational settings, intrinsic motivation is directly linked to deeper learning, more persistence, and better performance. SDT states that students are more likely to be motivated when they (a) enjoy doing an activity, (b) believe they are capable of completing the activity, and (c) believe the activity has meaning/value. These motivational constructs have been commonly measured by the Intrinsic Motivation Inventory (IMI), which includes constructs such as interest/enjoyment, perceived competence, and value/usefulness.

The connection between SDT and technology-enhanced learning is based on SDTs emphasis on the individual's subjective experience. Technology can support autonomy (e.g., through self-pacing), competence (e.g., through immediate feedback), and value (e.g., through alignment with the learner's goals). However, if learners do not perceive enjoyment, competence, or value in using technology, then the potential for the technology to support learning remains unfulfilled. Therefore, SDT provides a theoretically grounded lens to examine how learners' perceptions of motivation impact learning outcomes in mobile-assisted ESL learning contexts.

Motivation in Mobile-Assisted Language Learning

As late-breaking research has shown, motivation and mobile-assisted learning systems interact. Many mobile apps contain gamification components, interactive capabilities and personalised feedback systems that can make learners more engaged and interested in learning (Shah et al., 2024). A systematic review on Gamification in Mobile Assisted Language Learning (MALL) showed that the motivating affordance of points, levels and rewards can engage learners more and support them in persisting in learning (Shah et al., 2025b; Shortt et al., 2021). In addition to enjoying the experience, the ability to feel competent when using mobile learning systems may also be increased in mobile learning environments. Features like, adaptive level of difficulty, immediate feedback after mistakes and track record of progress can give learners a sense of mastery. The greater the learners believe they can successfully utilise mobile technology to improve their English abilities, the more motivated and engaged they may become.

Value/Usefulness as an additional significant motivational dimension in mobile learning contexts is also a key consideration for many university students. These students are generally pragmatic learners who tend to prioritise tools that clearly demonstrate their contribution to academic success. Previous research on the effectiveness of mobile learning has demonstrated that students' beliefs regarding the utility of mobile applications influence both their continued utilisation of mobile applications and their perception of their learning accomplishments (Lin & Lin, 2019; Garzón et al., 2023). Therefore, if learners perceive mobile-assisted ESL learning as valuable and useful, they are more likely to associate positive results with their engagement in mobile-assisted ESL learning.

While prior studies have shown that mobile learning contributes to improved vocabulary acquisition and language performance, few studies have specifically investigated the relationship between motivational aspects

and the predictors of learners' perceptions of ESL learning outcomes in mobile-assisted ESL learning. Understanding this relationship is essential to developing a more theoretically grounded perspective of the effectiveness of mobile-assisted language learning.

Perceived ESL Learning Outcomes in Technology-Based Learning

Learners' Perceived Learning Outcomes refers to learners' self-reported belief that they have achieved some type of improvement through their participation in educational experiences. While objective measures of performance, such as test scores provide important evidence of achievement, learners' perceptions of their achievements are also valid. Learners' perceptions of their achievements can influence their self-efficacy, satisfaction with their learning experiences and their continued utilization of learning tools.

Mobile-assisted ESL learning systems, learners' perceived improvements may include vocabulary development, reading comprehension, writing, speaking, listening, pronunciation, and other forms of English performance. Meta-analytic findings show that mobile-based learning interventions can positively impact all of these areas (Garzón et al., 2023; Lin & Lin, 2019). Nevertheless, the degree to which learners perceive such improvements may vary depending upon their motivational orientation toward mobile learning.

The significance of perceived learning outcomes in mobile-assisted language learning is most pronounced in higher education settings where students have control over whether to utilise digital tools and select the tools to use. If learners believe that mobile applications improve their English abilities, it is possible that they will continue to use the applications and integrate them into their long-term learning plans. On the contrary, if learners do not perceive improvements in their ESL abilities, it is possible that they will discontinue the use of mobile applications regardless of their availability.

Research Gap and Study Rationale

While previous studies have identified the potential for mobile-assisted language learning to be effective, there is still a need to investigate the psychological factors underlying learners' perceived learning outcomes. Specifically, there is a lack of research examining the relationship between motivational dimensions grounded in Self-Determination Theory and learners' perceived ESL learning outcomes in university settings. This research gap will be addressed by conducting a study that integrates SDT with mobile-assisted ESL learning. The study views motivation – operationalised via interest/enjoyment, perceived competence, and value/usefulness – as the principal causal factor affecting learners' perceptions of ESL learning outcomes in mobile-assisted ESL learning environments. By focusing on learners' subjective motivational experience rather than on the characteristics of the technology itself, this study aims to provide a more comprehensive understanding of the effectiveness of mobile-assisted ESL learning.

Taking the above-mentioned theoretical basis and research gap into account, the proposed hypothesis is that learners who exhibit higher levels of interest/enjoyment, perceived competence, and perceived value/usefulness in mobile-assisted ESL learning will report stronger perceived ESL learning outcomes than those who exhibit lower levels of these motivational dimensions.

METHODOLOGY

In order to establish the relationship between university students' motivation for using mobile assisted English Language Learning and their perception of ESL learning outcomes, this study applied a quantitative cross sectional survey methodology. This is grounded in Self Determination Theory (SDT) (Deci & Ryan, 2000), which conceptualizes motivation as a multi-dimensional construct consisting of interest/enjoyment, perceived competence, and perceived usefulness/value. The survey-based methodology was chosen to enable statistical investigation of predictive relationships using correlation and multiple regression analyses.

One hundred thirty-five undergraduate students from a Malaysian public university took part in the study. Participants were sampled through convenience sampling from English-related courses. The eligibility criteria for participants were (a) the student owned a smartphone and (b) they had used a mobile application or smartphone for learning English within the previous four weeks.

The number of participants in the final sample (n=135) satisfied general statistical requirements for conducting multiple regression analysis, which typically require a ratio of 15-20 cases per predictor variable (Hair et al., 2019). The data were collected voluntarily, with informed consent obtained before data collection. No participant's personal identifiable information was collected. Data were collected using a self-administered questionnaire consisting of three parts: demographic information, motivation for mobile-assisted ESL learning, and perceived ESL learning outcomes. The participants provided information about gender, year of study, their English proficiency level (MUET Band if applicable), how often they used their smartphone for English learning, and what type(s) of mobile applications they utilised (dictionary apps, flashcards, LMS platforms, messaging apps, AI tools). The descriptive statistics for these variables were analysed to provide a contextual background for the sample.

Motivation for Mobile-Assisted ESL Learning

Motivation was measured using an adapted version of the Intrinsic Motivation Inventory (IMI) developed under the framework of the Self-Determination Theory (Deci & Ryan, 2000). The IMI measures individuals' subjective experiences relative to a particular activity. The items for this study were contextualised to "using mobile apps or smartphones to learn English."

The adapted IMI consisted of twelve items divided into three subscales:

1. Interest/Enjoyment (four items)

2. Perceived Competence (four items)

3. Value/Usefulness (four items)

The items were scored on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Three of the items were reverse-coded to help minimise the effects of acquiescence bias. Internal consistency reliability was calculated using Cronbach's alpha. The Cronbach's alpha coefficients for the scales were as follows: Interest/Enjoyment: $\alpha = .84$, Perceived Competence: $\alpha = .81$, Value/Usefulness: $\alpha = .86$, and Total Motivation (12 items): $\alpha = .92$. Each coefficient exceeded the recommended .70 threshold, therefore indicating high internal consistency (Hair et al., 2019).

Perceived ESL Learning Outcomes

The perceived ESL learning outcomes were measured using an eight-item self-report scale that was developed for this study. The development of the scale was based on prior studies examining the effectiveness of mobile-assisted language learning (Garzón et al., 2023; Lin & Lin, 2019; Wu, 2015). The scale measured students' perceived improvements in vocabulary acquisition, comprehension, writing skills, speaking confidence, pronunciation, and overall English performance resulting from mobile-assisted learning. Each of the items was scored on a five-point Likert scale (one item was reverse-coded); higher mean scores represented greater perceived learning outcomes. The scale demonstrated good internal consistency ($\alpha = .88$). Content validity was established through a peer review process involving two language education specialists and one educational technology researcher prior to data collection.

Data Collection and Analysis

The questionnaire was administered online via a survey tool and distributed through the university's official communication channels. Prior to completing the survey, participants were informed of the purpose of the study, assured of confidentiality, and reminded that completion of the survey was optional. The length of time it took for the participants to complete the survey ranged from ten to fifteen minutes. Data were analysed using IBM SPSS Statistics (Version XX). The initial stages of the data analysis involved preliminary data screening procedures such as checking for missing values, outliers, and normality. The skewness and kurtosis values for each of the variables were within acceptable limits (+/-2) and thus indicated approximate normal distributions. The means and standard deviations of the variables were calculated to summarise the levels of motivation and perceived ESL learning outcomes. Pearson correlation analysis was conducted to identify the relationships

between the motivational subscales and perceived learning outcomes. Multiple regression analysis was conducted to determine whether the motivational subscales predicted perceived ESL learning outcomes. The perceived ESL learning outcomes served as the dependent variable, and the three motivational subscales (interest/enjoyment, perceived competence, and value/usefulness) served as the independent variables. Significance was evaluated at $p < .05$.

FINDINGS

Descriptive statistics were calculated to examine students' levels of motivation for mobile-assisted ESL learning and their perceived ESL learning outcomes. Table 1 presents the means and standard deviations for the key study variables.

Table 1: Descriptive Statistics of Motivation and Perceived ESL Learning Outcomes (N = 135)

Variable	Mean	SD
Interest/Enjoyment	3.92	0.64
Perceived Competence	3.78	0.69
Value/Usefulness	4.05	0.58
Overall Motivation	3.92	0.55
Perceived ESL Learning Outcomes	3.88	0.62

The results indicate that students generally reported moderately high levels of motivation toward mobile-assisted ESL learning ($M = 3.92$, $SD = 0.55$). Among the three motivational dimensions, value/usefulness recorded the highest mean score ($M = 4.05$, $SD = 0.58$), suggesting that students strongly perceived mobile applications as beneficial tools for improving their English skills. Students also reported positive perceptions of ESL learning outcomes associated with mobile learning ($M = 3.88$, $SD = 0.62$), indicating that they believed mobile-assisted learning contributed to improvements in vocabulary, comprehension, writing, speaking confidence, pronunciation, and overall English performance.

Internal consistency reliability of the measurement scales was assessed using Cronbach's alpha. As shown in Table 2, all constructs demonstrated satisfactory reliability.

Table 2: Reliability Analysis

Construct	Number of Items	Cronbach's α
Interest/Enjoyment	4	.84
Perceived Competence	4	.81
Value/Usefulness	4	.86
Overall Motivation	12	.92
Perceived ESL Learning Outcomes	8	.88

All Cronbach's alpha values exceeded the recommended threshold of **.70**, indicating good internal consistency reliability for the instruments used in this study.

Pearson correlation analysis was conducted to examine the relationships between the motivational constructs and perceived ESL learning outcomes. The results are presented in Table 3.

Table 3: Pearson Correlations Among Study Variables ($p < .01$)

Variable	1	2	3	4
1. Interest/Enjoyment	—			
2. Perceived Competence	.62**	—		
3. Value/Usefulness	.58**	.55**	—	
4. Perceived ESL Learning Outcomes	.65**	.61**	.68**	—

The results show that all three motivational dimensions were significantly and positively correlated with perceived ESL learning outcomes. The strongest relationship was observed between value/usefulness and perceived ESL learning outcomes ($r = .68$, $p < .01$). Interest/enjoyment ($r = .65$, $p < .01$) and perceived competence ($r = .61$, $p < .01$) also demonstrated strong positive correlations with perceived learning outcomes.

DISCUSSION

This study examined how students' motivation to use mobile devices to learn English affects what they believe about the results of their ESL studies. The researchers used Self-Determination Theory (SDT) by Deci & Ryan (2000) as the theoretical base for defining motivation as being made up of three sub-dimensions: interest/enjoyment, perceived competence, and value/usefulness. The data provided evidence for each of the motivational dimensions being associated with what students believed about the results of their ESL learning using mobile devices.

Motivation and Perceived Learning Outcomes

The results of the study showed moderate levels of motivation for mobile-assisted ESL learning ($M = 3.92$), and students reported positive perceived ESL learning results ($M = 3.88$). More importantly, there was a correlation between all three motivational sub-dimensions and perceived ESL learning results. The multiple regression analysis suggested that motivation as a whole accounted for approximately 55% of the variance in perceived ESL learning results ($R^2 = .55$). The findings suggest that there is a large relationship between motivation and what students believe about their ESL learning results.

SDT explains that when students have a high level of intrinsic motivation to participate in a particular activity, they will have a higher likelihood of perceiving that the activity has resulted in positive outcomes and sustaining their participation in the activity (Deci & Ryan, 2000). In the context of mobile-assisted ESL learning, students who enjoyed their experience with mobile learning for ESL, found it meaningful and confidence-building, had a larger likelihood of reporting improvements in vocabulary, comprehension, writing, speaking confidence and overall English performance.

The Role of Value/Usefulness

Amongst the three sub-dimensions of motivation, value/usefulness emerged as the most powerful predictor of perceived ESL learning results ($\beta = .35$, $p < .001$). This indicates that students' beliefs regarding the usefulness of mobile learning for enhancing their ESL skills is a critical factor in determining their learning perceptions. When students perceive mobile applications as having a real-world benefit for improving their ESL skills, they are more likely to attribute learning gains to their use of those mobile applications. Prior mobile-assisted language learning research supports the current study's findings (Garzón et al., 2023; Lin & Lin, 2019) in identifying perceived utility as a major motivator of both technology adoption and learning effectiveness in mobile-assisted language learning settings. Additionally, the perceived instrumental value of mobile apps is likely to be a stronger motivator for many students enrolled in higher education programs where pragmatism and a focus on achieving desired outcomes are the norm.

Interest/Enjoyment and Learning Engagement

Interest/enjoyment was another sub-dimension of motivation that significantly contributed to predicting perceived ESL learning results ($\beta = .31$, $p < .001$). This emphasises the importance of intrinsic motivation in digital learning environments. Mobile applications often include interactive features, multimedia content, and gamified elements that can increase student engagement and participation. When students find their experience of learning English through mobile applications enjoyable, they may invest greater amounts of time and cognitive energy into their mobile-assisted ESL learning, which could result in strengthened perceptions of improved ESL learning.

Research examining gamification and engagement in mobile-assisted language learning supports the findings of the current study (Shortt et al., 2021) as demonstrating that enjoyable learning experiences promote persistence and repeated engagement with mobile-assisted ESL learning activities. While the current study did not measure actual learning outcomes but instead assessed perceived learning outcomes, the strength of the relationship between enjoyment and perceived learning outcomes provides further evidence of the role of affectivity in mobile-assisted ESL learning.

Perceived Competence and Confidence

Finally, perceived competence was shown to be a significant predictor ($\beta = .26$, $p = .001$) of ESL learning results, indicating that students who believe they possess the capability to learn English via mobile applications are more likely to perceive ESL learning gains. This finding supports SDT's assertion that perceived competence is one of the primary psychological needs that contributes to motivation and learning outcomes (Deci & Ryan, 2000).

Mobile-assisted ESL learning environments may foster perceived competence through various features, including immediate feedback, opportunities for repetition, and self-paced learning. Such affordances can provide learners with a sense of agency and mastery, and therefore reinforce their belief in their capacity to improve. Therefore, mobile learning environments should be designed to include mechanisms for providing clear feedback, offering challenges that are achievable, and offering a structured pathway of progress.

Implications

This research adds to the existing literature for Mobile Assisted Language Learning by providing empirical evidence of the contribution of motivational dimensions towards perceived ESL learning outcomes. As previously discussed in the literature review, mobile learning has been shown to improve vocabulary acquisition and language performance (Lin and Lin, 2019; Garzon et al., 2023). However, this current study demonstrates the psychological basis for why mobile assisted ESL learning is effective. The study shows that the efficacy of mobile-assisted ESL learning is largely based upon students' perception of their own motivation, and not simply due to the technology available to them. Therefore, the study supports the claim made in the literature review that mobile learning should be viewed from an instructional/technological lens, as well as through a motivational/psychological framework. From a pedagogical perspective, the study indicates that teachers should prioritise strategies that support students' perceptions of value, enjoyment, and competence when using mobile applications in ESL instruction. Simply suggesting a mobile application will not be enough. Teachers should also be able to; show students how mobile applications are useful for improving English, create engaging and interactive tasks and provide structured guidance to help students feel competent in completing mobile applications. By strengthening these motivational dimensions, educators may increase the likelihood that students perceive meaningful learning gains from mobile-assisted ESL activities.

CONCLUSION

Although the study contributes to the field, there are some limitations to the study. One limitation is the fact that the study uses self-reported perceived learning outcomes, rather than objective measures of language improvement. To strengthen the validity of the study, researchers may want to include objective performance measures, such as vocabulary tests or students' course grades, in future studies. Another limitation of the study is the cross-sectional design, which prevents drawing causal conclusions. Researchers may be able to test if motivation causes language improvement over time in longitudinal studies. Researchers may also want to consider including moderator variables, such as English proficiency levels, types of mobile applications being used, or how often students engage with mobile applications, in order to get a better understanding of how mobile-assisted ESL learning works. In summary, the study demonstrates that motivation has a strong influence on what university students perceive about their ESL learning outcomes while using mobile technology. Interest/enjoyment, perceived competence, and especially value/usefulness were all significant predictors of perceived improvements in English skills. The results of this study reinforce the need for researchers to take into account the motivational aspects of students when incorporating mobile technology into ESL instruction and further support the idea that the success of mobile learning is both psychologically and technologically related.

REFERENCES

1. Adnan, A. H. M. (2025). Survey of Video-based Learning Deployment by Secondary School Teachers. International Journal of Research and Innovation in Social Science (IJRISS), 9(11).
2. Adnan, A. H. M., Salim, M. S. A. M., Tsang, J., Shah, D. S. M., Tahir, M. H. M., & Salim, M. N. F. M. (2024). Supporting postgraduate students from China in Malaysia through learning communities. Asian Journal of Research in Education and Social Sciences, 6(S2), 105–120.
3. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
4. Garzón, J., Lampropoulos, G., & Burgos, D. (2023). Effects of mobile learning in English language learning: A meta-analysis and research synthesis. Electronics, 12(7), 1595. https://doi.org/10.3390/electronics12071595
5. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate data analysis (8th ed.). Cengage Learning.
6. Karim, R. A., Adnan, A. H. M., Salim, M. S. A. M., Kamarudin, S., & Zaidi, A. (2020, September). Education innovations through mobile learning technologies for the Industry 4.0 readiness of tertiary students in Malaysia. InIOP Conference Series: Materials Science and Engineering(Vol. 917, No. 1, p. 012022). IOP Publishing
7. Krisnan, A. S. K., Paramasivam, S., Jamil, N. I., Ahmad, S. N. D., & Mohd Salim, M. N. F.(2022). Student perspective of ACE website to complete presentations in open anddistance learning (ODL). International Research in Education, 10(2), 1–15.doi:10.5296/ire.v10i2.19885
8. Lin, J.-J., & Lin, H. (2019). Mobile-assisted ESL/EFL vocabulary learning: A systematic review and meta-analysis. Computer Assisted Language Learning, 32(8), 878–919. https://doi.org/10.1080/09588221.2018.1541359
9. Mohd Salim, M. N. F., Mohamad Yusuf, A., Halim, N. S., & Mohd Salim, M. S. A. (2025). Digital learning in Malaysian schools. Buletin APB Edisi 14.
10. Mohd Salim, M. N. F., Mohamad Yusuf, A. H., Ahmad, I., & Mohd Salim, M. S. A. (2020).Unleashing learning potentials among passive students. Journal of Islamic, Social,Economics and Development, 5(33), 28–33. https://doi.org/10.1234/jised.v5i33.2020
11. Salim, M. N. F. M., Karim, A. A., Husnin, H., & Purwarno, P. (2025). A Behavioural Needs Analysis in Professional Communication Education. Environment-Behaviour Proceedings Journal, 10(33), 65–70. https://doi.org/10.21834/e-bpj.v10i33.7311
12. Salim, M. N. F. M., Yusuf, A. M., Salim, M. S. A. M., Murnin, N. E. A., Zailani, I. N. M., Azamee, N. A. M., & Effendy, N. D.M. K. (2024). Student Preferences, Challenges, and Strategies in Group Work: A Case Study.International Journal of Advanced Research in Education and Society,6(4), 269–284.
13. Salim, M. S. A. M., Salim, M. N. F. M., Shah, D. S. M., Adnan, A. H. M., Othman, S., & Khalil, M. I. M. (2025). Immersive vocabulary learning with Step Into Vocabulary (S.I.V): A 360-degree approach. In Compilation of Innovative Ideas 2025: International Creative & Innovative Idea Competition (ICIIC 2025) (pp. 408–415)
14. Shah, D. S. M., Mohd Salim, M. S. A., Adnan, A. H. M., Vivine Nurcahyawati, Mohd Salim, M. N. F., & Othman, S. (2025a). Evaluating the Effectiveness of Telegram Chatbots for Vocabulary Learning in ESL and EFL Contexts. Environment-Behaviour Proceedings Journal, 10(32), 13–19. https://doi.org/10.21834/e-bpj.v10i32.6734
15. Shah, D. S. M., Adnan, A. H. M., Salim, M. S. A. M., & Salim, M. N. F. M. (2025b). Deploying Educational Chatbots as Virtual Assistants for Language Teaching and Learning in Malaysian Tertiary Education. Journal of Advanced Research in Computing and Applications, 39(1), 206-211.
16. Shah, D. S. M., Salim, M. S. A. M., Salim, M. N. F. M., Hadianti, S., Fauziah, N. I., & Hartati, R. D. (2025c). Explainer Videos for Language Learning: A Comparative Study between UiTM and UT. International Journal of English Language and Pedagogy, 3(2), 1-10.
17. Shah, D. S. M., Othman, S., Salim, M. S. A. M., Salim, M. N. F. M., Khalil, M. I. M., & Kusmawan,U. (2024). The Impact of Immersive 360-Degree Video Learning on Enhancing Oral Communication Skills. Journal of Advanced Research in Applied Sciences and Engineering Technology, 1-17. https://doi.org/10.37934/araset.58.2.117

18. Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2021). Gamification in mobile-assisted language learning: A systematic review of Duolingo literature from public release of 2012 to early 2020. Computer-Assisted Language Learning. https://doi.org/10.1080/09588221.2021.1933540
19. Tahir, M. H. M., Shah, D. S. M., Adnan, A. H. M., Salim, M. S. A. M., Salim, M. N. F. M., Nazrin, S. N., & Badioze Zaman, H. (2026). Assessing the effects of virtual teaching tools on ESL primary students' vocabulary learning. In H. Badioze Zaman et al. (Eds.), Advances in visual informatics: IVIC 2025 (Lecture Notes in Computer Science, Vol. 16215). Springer. https://doi.org/10.1007/978-981-95-3808-9_9
20. Wan Mustapha, W. Z., Mohd Salim, M. N. F., Ahmad, I., & Paramasivam, S. (2019). A case study on Week Without Walls (WWW) in UiTM Negeri Sembilan: Critical reading and creative writing beyond the second language classrooms. KnE Social Sciences, 2019, 958–969. doi:10.18502/kss.v3i19.4920
21. Wu, Q. (2015). Designing a smartphone app to teach English (L2) vocabulary. Computers & Education, 85, 170–179. https://doi.org/10.1016/j.compedu.2015.02.013
22. Xodabande, I., & Hashemi, M. R. (2022). Learning English with electronic textbooks on mobile devices: Impacts on university students' vocabulary development. Education and Information Technologies, 28, 1587–1611. https://doi.org/10.1007/s10639-022-11230-1
23. Yusuf, A. H. M., Salim, M. N. F. M., Mohd, M. S. A., Salim, A. S. R., Amri, W. N. D. A. W.,Sobirin, N. F. M., & Rohaizad, N. I. M. (2024). Gadget dependency and its impact on academic performance: a study among higher education students. International Journal, 6(23). https://doi.org/10.35631/IJMOE.623016