



FACTORS MEDIATING EFL STUDENTS' READINESS AND IMPLEMENTATION OF SELF-DIRECTED VOCABULARY LEARNING VIA MOBILE ENGLISH LEARNING RESOURCES

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Abstract: This study investigates factors mediating Vietnamese EFL students' readiness and implementation of self-directed learning (SDL) of vocabulary through mobile English learning resources (MELR) in Sociocultural Theory (SCT) perspectives. Adopting a mixed-methods approach, the study collected quantitative data from 388 undergraduates via a survey measuring SDL readiness and perceived factors impacting students' SDL of vocabulary. Qualitative data included student learning journals and follow-up interviews. Results indicate that the learners exhibit high readiness, motivation, and moderate autonomy in vocabulary learning, with motivation being the strongest SDL component. Besides, students' actual vocabulary learning practices are significantly mediated by such factors as technological access, social support, and content relevance, highlighting the interdependence between individual agency and contextual affordances. However, challenges such as time management, limited access to quality resources, and lack of contextual alignment hinder sustained engagement. Analysis of qualitative data reveals that students use diverse MELR (e.g., flashcard apps, dictionaries, videos), demonstrate selective strategy use, and benefit from peer or teacher support. Findings underscore the importance of sociocultural mediation in SDL and highlight the need for pedagogical support and accessible, context-appropriate mobile tools to enhance autonomous vocabulary learning beyond the classroom.

Keywords. Self-directed learning, vocabulary, mobile English learning resources

1. Introduction

Vocabulary knowledge is widely recognized as a foundational component of second language proficiency, critically supporting learners' abilities to comprehend texts, engage in conversations, and succeed in academic tasks (Nation, 2013). However, vocabulary is usually understood to be in learners' responsibility for self-study. The widespread availability of mobile technologies has enabled students to access a variety of MELR, such as digital dictionaries, flashcard apps, learning platforms, and podcasts (Godwin-Jones, 2011). These tools allow for flexible, just-in-time learning that aligns with the growing emphasis on learner autonomy and personalized learning. Despite the pedagogical promise of mobile-assisted language learning (MALL), few studies have examined how learners self-direct their vocabulary acquisition through MELR in real-world contexts or applied a sociocultural framework to understand the interaction between learners and MELR (Lantolf & Thorne, 2006). The present study addresses this gap by investigating how EFL university students in Vietnam implement SDL for receptive vocabulary learning using mobile resources.

This study aims to explore the cognitive, motivational, and contextual dimensions of self-directed vocabulary learning via MELR among Vietnamese EFL students. Drawing on SCT, the study examines both internal and external factors mediating EFL students' implementation of SDL of vocabulary in mobile platforms. Specifically, it addresses the following research questions:

1. To what extent are EFL students ready for self-directed vocabulary learning via mobile English learning resources?
2. What factors do students perceive as mediating their self-directed vocabulary learning via mobile English learning resources?

2. Literature review

2.1. *Self-directed learning (SDL) and learner autonomy*

Self-directed learning (SDL), as conceptualized by Knowles (1975), refers to the process whereby learners take the initiative in diagnosing their learning needs, formulating goals, identifying appropriate resources, choosing and implementing learning strategies, and evaluating outcomes. Holec (1981) defines SDL as the capacity to take charge of one's own learning. In the context of vocabulary learning, SDL entails students independently recognizing vocabulary gaps, setting specific learning goals, choosing appropriate tools, using varied strategies such as flashcards or apps, and monitoring their progress over time. Although the potential of SDL is widely recognized, several studies highlight its limitations in practice. In Vietnamese higher education, where students often experience exam-oriented instruction, the

transition to SDL is not always smooth (Lai & Gu, 2011). Moreover, SDL is not a solitary activity. It requires scaffolding, particularly from teachers and learning environments (Little, 1995).

2.2. *Mobile-assisted language learning (MALL) for vocabulary development*

MALL refers to the use of mobile technologies to support language learning beyond traditional classroom settings. Kukulska-Hulme and Shield (2008) highlighted the flexibility and personalization MALL offers. Vocabulary learning is especially suited to mobile formats because it often requires frequent, short-term exposure and repetition. Applications like Anki, Quizlet, and eJOY employ spaced repetition algorithms and gamified content to enhance vocabulary retention (Burston, 2015). Research has demonstrated the benefits of MALL for vocabulary development, such as better retention (Thornton & Houser, 2005), enhancing vocabulary recall (Lu, 2008) and higher learner engagement (Sung et al., 2015) when apps provide audio-visual elements and gamified challenges.

2.3. *Sociocultural theory (SCT) and mediated learning*

SCT, developed by Vygotsky (1978), emphasizes that learning is mediated by tools and shaped by social interaction. In other words, SCT positions learning as a socially mediated process in which learners interact with tools, symbols, and social agents to internalize new knowledge. In MALL contexts, mobile resources serve as tools that mediate vocabulary learning by structuring how learners access, engage with, and retain new lexical items (Lantolf & Thorne, 2006). Therefore, learners' vocabulary development through mobile apps can be viewed as a socially and culturally situated practice, not merely an individual cognitive task. Kukulska-Hulme and Viberg (2018) also argued that mobile learning should be viewed through a sociocultural lens, accounting for learners' contexts, interactions, and the culturally shaped nature of mobile tools. Features of these tools, such as feedback mechanisms, reminders, and gamification, make them act as mediational artifacts that scaffold vocabulary learning, helping students operate within their Zone of Proximal Development (ZPD) and stay engaged and reflect on their learning (Lai & Zheng, 2018).

With regard to mobile-assisted vocabulary learning, learners' readiness and capacity to undertake SDL are shaped by sociocultural aspects and mediational circumstances. As highlighted by Lai (2017), factors such as a learner's digital literacy and their community's attitude towards mobile learning greatly influence a learner's SDL strategies. Readiness for SDL with MELR, therefore, cannot be framed purely as an internal characteristic but as an interplay of the learner's sociocultural context, technological environment, and institutional frameworks. Also, Stockwell and Hubbard (2013) emphasized that learners' active participation in mobile learning depends on how well the tool design accommodates their requirements, aspirations, and sociocultural circumstances. Features such as personalized pathways to learning, tracking

progress towards goals, and peer and instructor feedback not only mediate the content but also influence both learners' perceived control over the process, independence, and sustained engagement. As noted by Lai and Gu (2011), community norms alongside peer support toward mobile learning shape whether students take up SDL practices or not. These considerations highlighted that readiness for SDL via MERL is not a singular cognitive skill but rather a capacity shaped by sociocultural considerations that integrates learners and their contexts over time. Therefore, vocabulary learning through MELR can be understood as a socially situated practice profoundly rooted in the learners' relationships with their technology, institutions, and culture.

2.4. *Previous studies on students' SDL of vocabulary via MELR*

Recent research has increasingly emphasized the intersection of MALL and SDL, particularly in the area of vocabulary acquisition. Among the most relevant studies is Shen et al. (2023), who investigated factors influencing Chinese undergraduate students' adoption of MELR. Drawing on a modified unified theory of acceptance and use of technology model, the study found that facilitating conditions (such as device availability and technical support) were the most significant predictors of students' behavioral intention to use MELR, followed by perceived enjoyment and ease of use. Interestingly, social influence was found to be non-significant in this model. While the study offers valuable insights into the technological and motivational determinants of mobile learning adoption, it did not explore actual learning behaviors or the deeper sociocultural context shaping learners' practices, an area that the current study addresses through qualitative data and a sociocultural theoretical lens.

Previously, Zhang and Pérez-Paredes (2021) also explored how Chinese postgraduate students self-directed their vocabulary learning using mobile resources. Their mixed-methods study highlighted that vocabulary acquisition was the most common goal among mobile learners, with micro-learning (short, frequent engagements) being the dominant pattern. However, learners reported difficulty in selecting appropriate apps and often depended on social media or expert recommendations. Although the study acknowledged the role of enjoyment and design features in learners' preferences, it lacked an in-depth theoretical framing of how social and cultural influences mediate SDL behaviors to help clarify how learners' environments, such as peer interactions, teacher guidance, and cultural attitudes, affect their use of mobile resources.

In another controlled study, Boroughani et al. (2023) assessed the impact of using Quizlet digital flashcards on Iranian EFL learners' academic vocabulary acquisition and self-regulatory learning. Over a semester-long intervention, students using Quizlet demonstrated significantly greater gains in both vocabulary knowledge and self-regulation compared to a control group using traditional study methods. The authors suggested that app features such as gamification and immediate feedback enhanced metacognitive awareness and learning motivation.

However, because the study was conducted within a structured course and required app usage, it remains unclear whether such gains in autonomy would persist in a truly self-directed environment. Moreover, the lack of qualitative data limits understanding of how learners interacted with the app or integrated it into their personal learning strategies.

Furthermore, Wang et al. (2020) proposed a Contribution-Oriented Self-Directed Mobile Learning Ecology (CSDMLE) model that encourages learners to collaboratively use mobile tools for vocabulary learning in group-based, student-led activities. Their mixed-methods study with Chinese EFL students revealed that the CSDMLE group outperformed a control group on immediate vocabulary tests and expressed strong satisfaction with the learning process. However, the delayed post-test showed no significant difference between groups, raising questions about long-term retention. Although the approach fostered learner agency and collaboration, it did not fully capture whether students sustained autonomous practices beyond the study period.

While research supports SDL and MELR for vocabulary, gaps exist regarding independent, real-life use and the influence of sociocultural factors. Few studies analyze learner autonomy or explicitly use a sociocultural lens to understand how social environments and cultural norms shape mobile learning. The interplay between SDL readiness and external sociocultural factors in MELR usage is underexplored, as is the application of SCT to understand mobile tools as mediators in broader learning contexts. This study addresses these gaps by using a mixed-methods approach grounded in SCT to investigate how Vietnamese EFL university students' self-direct vocabulary learning with MELR, aiming for a holistic understanding of individual, technological, and sociocultural factors in real-world, learner-initiated mobile learning practices.

3. Methodology

This study adopted a convergent mixed-methods design (Creswell & Clark, 2018) to explore how Vietnamese EFL university students engage in self-directed receptive vocabulary learning through MELR. Mixed-methods research offers a comprehensive view by combining the generalizability of quantitative data with the depth of qualitative insights (Creswell & Clark, 2018). In this study, quantitative survey results provided patterns of learner behavior, while qualitative journals and interviews enriched the data with contextual explanations.

3.1. Participants

The participants included 388 undergraduate EFL students from a public university in Vietnam, aged between 18 and 22 years. These students were enrolled in various English courses across different academic years and represented a range of English proficiency levels, from B1 to C1 according to the CEFR framework. Participation was voluntary, and informed

consent was obtained from all respondents. Data were collected over a 15-week period, from late December 2024 to early April 2025, which corresponded to the second semester of the participants' academic year. The initial data collection was conducted through an online survey using Google Forms. Students who indicated that they had never engaged in self-directed vocabulary learning via MELR were excluded from the analysis. Based on the survey results reflecting students' levels of readiness for self-directed learning, a purposive sampling strategy was employed to invite 20 students to participate in the qualitative phase. This group was selected to ensure a range of self-directed learning readiness levels and varied experiences with MELR, and all participants joined the interviews voluntarily (Patton, 2002).

3.2. Instruments and data collection

The quantitative instrument was a self-report questionnaire comprising 24 Likert-scale items divided into two parts: (1) SDL readiness, including dimensions such as autonomy, goal-setting, motivation, self-monitoring, and time management; and (2) external influences, covering technological, socioeconomic, educational, environmental, and cultural-linguistic factors. The questionnaire was developed based on validated frameworks (e.g., Knowles, 1975; Garrison, 1997; Macaskill & Taylor, 2010) and reviewed by experts for content validity. It was pilot-tested with 30 students before distribution. Survey data were collected via Google Forms. The internal consistency was high, with a Cronbach's alpha of 0.927, indicating excellent reliability (DeVellis, 2016). Below is a detailed description of the questionnaire:

Table 1. Description of the questionnaire

Aspect	Description
Purpose	To investigate students' readiness for and implementation of self-directed receptive vocabulary learning via MELR, and to examine external factors influencing this process.
Target Participants	EFL university students who use mobile English learning resources for vocabulary development.
Structure	Two main parts: • Part 1: Readiness for SDL with MELR (4 subscales) • Part 2: External factors affecting SDL (5 subscales)
Total Items	24 items
Measurement Scale	5-point Likert scale: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral, 4 = Agree; 5 = Strongly Agree

Part 1 Subscales	• Autonomy and goal setting (3 items) • Motivation (3 items) • Self-monitoring and evaluation (3 items) • Time Management (3 items)
Part 2 Subscales	• Technological infrastructure and access (4 items) • Socioeconomic factors (2 items) • Educational support (2 items) • Learning environment (2 items) • Cultural and linguistic Context (2 items)
Language	Vietnamese (with translation cross-checked for accuracy)

For the qualitative phase, the 20 selected students were asked to maintain reflective journals over four weeks. Guided prompts facilitated structured reflections on mobile resource usage, vocabulary learning strategies, encountered challenges, and support mechanisms. Journals, a valuable tool for capturing ongoing learner experiences and self-directed behavior (Boud, 2001), were collected digitally. Subsequently, semi-structured interviews lasting 30-45 minutes were conducted in Vietnamese, the participants' and researchers' first language, which was preferred by the participants, to make it easy for them to express themselves naturally and easily.

3.3. Data analysis

Quantitative data were analyzed using SPSS version 26. Descriptive statistics (Means, standard deviations) and One-Sample T-Tests were used to examine SDL tendencies and perceptions of external factors. Reliability coefficients were calculated for the full scale and subcomponents. Qualitative data, including translated journal entries and transcribed interviews, were subjected to thematic analysis following Braun and Clarke's (2006) six-phase procedure. Codes were generated inductively and deductively based on the research questions and existing literature. Key themes emerged, such as vocabulary learning strategies, motivational drivers, technological barriers, and sociocultural mediation.

Findings from both data sources were integrated at the interpretation stage to triangulate results and enhance the credibility, depth, and validity of conclusions. The SCT framework informed the analysis, offering insight into the mediating roles of mobile tools, social interactions, and cultural context. Besides, the study adhered to ethical guidelines.

4. Findings and discussion

4.1. Students' readiness for self-directed vocabulary learning via MELR

Overall, the survey indicates that students' readiness for self-directed vocabulary learning is above average (Part 1: Mean = 3.69, SD = 0.58 on a 5-point scale), a value significantly higher than the neutral midpoint (One-Sample $t(387) = 23.56, p < .001$). This suggests a generally positive disposition toward autonomous vocabulary learning using mobile resources. To determine whether this Mean significantly differs from the neutral midpoint of 3.0, a One-Sample T-Test was conducted.

Table 2. One-Sample T-Test – EFL Students' Readiness for SDL of Vocabulary via MELR

Test value = 3.0

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Average (Q1_Q12)	23.56	387	0.000	0.69	0.63	0.75

The statistical results confirm that students' readiness for self-directed learning via MELR exceeds the midpoint on the 5-point scale, and are consistent with the average scores of individual statements in Part 1, as shown below.

Table 3. EFL Students' Readiness for SDL of Vocabulary via MELR

Statements/ Items	Min	Max	M	SD
Autonomy and goal setting				
1. I regularly decide what new English words to learn based on my interests and needs.	1	5	3.68	0.82
2. I create specific learning goals for acquiring new English vocabulary (e.g., learning 10 words a week) via MELR.	1	5	3.65	0.88
3. I prefer to explore MELR on my own for vocabulary rather than rely solely on my teacher.	1	5	3.80	0.79
Average (Q1_Q3)	1	5	3.71	0.60

Motivation				
I feel motivated to expand my English vocabulary even without external rewards or deadlines.	1	5	3.67	0.829
I enjoy the challenge of learning new English words, even if I find them difficult.	1	5	3.61	0.855
I believe learning new vocabulary is essential for improving my overall English proficiency	1	5	3.98	0.834
Average (Q4_Q6)	1	5	3.75	0.68
Self-monitoring and evaluation				
I often reflect on the vocabulary I have learned to evaluate my progress.	1	5	3.67	0.822
I regularly test myself (e.g., using flashcards or apps) to check if I remember the words I have learned	1	5	3.65	0.848
When I struggle to remember or understand a word, I look for alternative ways to learn it (e.g., using the word in sentences or finding synonyms).	1	5	3.88	0.845
Average (Q7_Q9)	1	5	3.73	0.67
Time management				
I allocate time each day or week to study new English vocabulary.	1	5	3.63	0.86
I balance time spent on mobile devices and platforms learning vocabulary and doing other activities (reading news, recreation, etc.) effectively	1	5	3.57	0.89
I manage to keep up with my vocabulary learning goals, even when I'm busy with other activities.	1	5	3.49	0.89
Average (Q10_Q12)	1	5	3.56	0.77
Mean (Overall Average) Q1_Q12	1	5	3.69	0.58

A comparative analysis of the four sub-clusters indicates important differences in EFL learners' readiness for self-directed receptive vocabulary learning with MELR. Out of the four dimensions, motivation stood out as the strongly rated sub-cluster with a mean score of 3.75, which suggests that the students were willing to learn vocabulary even in the absence of external motivation. This was almost equaled by self-monitoring and evaluation ($M = 3.73$), implying that the students showed considerable engagement in reflecting on their learning progress and adjusting their strategies as needed. Autonomy and goal setting came third ($M = 3.71$), indicating that a relatively strong average among the students to plan their vocabulary learning, make independent decisions concerning the resources to be used, as well as set appropriate learning targets. However, time management was the lowest-scoring sub-cluster ($M = 3.56$), which suggests that while the students tended to be motivated and goal-oriented, they might struggle to maintain regular study schedules and balance other commitments with vocabulary learning among several competing priorities. This ranking indicates that while the students demonstrated considerable motivation and cognitive readiness for SDL through MELR, developing sustained and consistent learning behaviors over time, especially under competing academic or personal demands, remains a primary focus area.

Planning and goal setting

Quantitative results show that students engage in considerable planning and goal-setting for vocabulary learning. The survey items on autonomy and goal setting (Q1–Q3) averaged $M \approx 3.71$ ($SD \approx 0.60$), indicating that, on average, students “agree” that they regularly decide what vocabulary to learn, set learning goals, and prefer independent exploration of MELR. Notably, the statement “*I prefer to explore MELR on my own for vocabulary rather than rely solely on my teacher*” received a relatively high Mean ($M = 3.80$, $SD = 0.79$), suggesting a strong autonomous orientation. A slightly lower but still positive Mean was observed for “*I create specific learning goals (e.g., 10 new words a week) via MELR*” ($M = 3.65$, $SD = 0.88$), implying that while many students set goals, a few may do so less systematically. These results suggest that a majority of the learners take initiative in planning their vocabulary study and tailoring it to personal needs. This proactive stance reflects core principles of self-directed learning: learners are assuming responsibility for what and how they learn.

Qualitative data from journals and interviews reinforce this finding. Many students described planning their mobile-based study in advance. For example, one student wrote, “*Every week I choose a set of new words from the TED Talks I watch on my phone and make a list to learn.*” Another student set concrete targets, explaining in an interview, “*I set a goal to learn at least five new words per day using a vocabulary app and track my progress.*” These accounts illustrate deliberate goal-setting behavior, as students identify learning materials from mobile resources and establish routine targets for themselves.

Motivation

Students demonstrated strong intrinsic motivation toward expanding their English vocabulary using mobile resources. The Motivation cluster (Q4–Q6) had the highest Mean of all readiness dimensions (average $M = 3.75$, $SD = 0.68$). They agreed that they feel motivated to learn new words without external rewards (Q4 $M = 3.67$, $SD = 0.83$) and enjoy the challenge of difficult words (Q5 $M = 3.61$, $SD = 0.85$). The most highly rated statement in the entire survey was *“I believe learning new vocabulary is essential for improving my overall English proficiency”* (Q6 $M = 3.98$, $SD = 0.83$). This near-4.0 Mean indicates that virtually all students recognize the importance of vocabulary knowledge to their language success. Interviews and journal excerpts further illustrate the learners’ intrinsic motivation. Many students expressed enthusiasm for independent vocabulary learning. *“I actually enjoy picking up new words on my phone – it’s satisfying to learn a word I didn’t know before,”* one participant noted. Another student wrote, *“Even without a deadline or a test, I find myself learning new words because I want to improve my English for myself.”* Such comments show that learners derive personal satisfaction and a sense of achievement from mastering new vocabulary, even in the absence of external pressure.

Actions and strategies

This dimension refers to the concrete self-directed actions and learning strategies students employ when using mobile resources to learn vocabulary. Quantitative data suggest that while students are motivated and planful, maintaining consistent action (especially time management) is somewhat challenging. The Time Management items (Q10–Q12) formed the lowest-scoring readiness subscale (average $M = 3.56$, $SD = 0.77$). In particular, students were only slightly above neutral regarding *“I manage to keep up with my vocabulary learning goals, even when I’m busy”* (Q12 $M = 3.49$, $SD = 0.89$, the lowest individual item in Part 1). This indicates that external demands (like coursework or other activities) sometimes disrupt their intended study routines. However, students did moderately agree that they allocate regular time for vocabulary (Q10 $M = 3.63$, $SD = 0.86$) and try to balance vocabulary learning with other mobile activities (Q11 $M = 3.57$, $SD = 0.89$). In practice, many students seem to utilize small windows of time and multitask, for example, studying vocabulary during breaks or while commuting. The slight drop in consistency (Q12) may reflect the realities of a student’s schedule rather than lack of effort.

Qualitative findings shed light on the specific strategies students use and how they integrate vocabulary learning into their daily routines. A common theme in the journals was micro-learning – using short periods throughout the day for vocabulary practice. *“I use a flashcard app on my phone whenever I have a few minutes, like on the bus or waiting in line,”* one student reported. Others mentioned contextual learning strategies: for instance, reading English news or social media posts and saving new words. *“When I scroll Facebook in English and see a new word, I look it up immediately on my dictionary app and add it to my word list,”* wrote another

student, illustrating how everyday mobile usage becomes an opportunity for vocabulary acquisition. Several interviewees highlighted specific MELR tools: a number of students used apps like Duolingo or Quizlet to practice vocabulary through games and quizzes; some created their own digital flashcards; and some listened to English songs or podcasts on their phones, writing down unfamiliar words. These self-initiated strategies demonstrate resourcefulness and variety in approaches. Rather than passively relying on a teacher's assignments, learners are actively choosing methods that suit them and taking advantage of the ubiquity of mobile devices. As one participant explained, *"My phone is always with me, so I can learn new words anytime and anywhere – during lunch, before bed – instead of only in class."* One student's strategy illustrates this depth: *"If I encounter a word I keep forgetting, I will not only memorize the definition but also use the word in a sentence and find a synonym on my app. This helps me remember it better."* This example shows a conscious effort to deeply process the word's meaning, consistent with research finding that the more mental effort invested in a word, the better it is retained. However, while many students show such strategic behaviors, the slight shortfall in sustained time management (as noted in Q12) suggests a need for improved self-regulation. It might be beneficial for learners to develop more robust routines or use app-based reminders to ensure regular engagement. Overall, the actions and strategies dimension reveal an active learner population making good use of mobile affordances, yet also facing the common challenge of maintaining consistent study habits in a busy life.

Evaluation and reflection

The data indicate that learners are practicing self-monitoring, evaluation, and reflection to a considerable degree during their vocabulary learning. The survey cluster of Self-Monitoring and Evaluation (Q7–Q9) had a high average ($M = 3.73$, $SD = 0.67$), second only to Motivation. Students generally agreed that they *"often reflect on the vocabulary learned to evaluate progress"* (Q7 $M = 3.67$, $SD = 0.82$) and *"regularly test themselves (e.g., using flashcards or apps) to check if they remember words"* (Q8 $M = 3.65$, $SD = 0.85$). They were especially likely to agree with *"When I struggle to remember or understand a word, I look for alternative ways to learn it (e.g., using the word in sentences or finding synonyms)"* – this item (Q9) had $M = 3.88$ ($SD = 0.85$). Such results suggest that many learners are not only acquiring vocabulary but also actively monitoring their learning process and adapting their strategies when necessary.

Qualitative evidence corroborates this interpretation. Students' journal entries often included personal assessments of their learning. For instance, one student wrote, *"By the end of the week, I will review all the new words I saved in my phone. I test myself and I can see which ones I still remember and which I forgot."* This quote exemplifies deliberate self-evaluation – the student is measuring progress and identifying words that need more work. Another student mentioned an iterative approach: *"If I realize I keep forgetting a word, I try something different, like listening to its pronunciation or using it in a sentence. Changing the method helps me remember."* In interviews,

participants echoed the value of reflection. One interviewee described keeping a vocabulary journal on her tablet: *“Every few days I look back at my vocabulary journal and quiz myself. It’s encouraging to see how many words I’ve learned, and I focus on those I haven’t mastered.”*

4.2. External factors mediating students’ SDL of vocabulary via MELR

The Mean score for Part 2 of the survey was calculated and achieved 3.3434 (SD: 0.7129). This represents the average score for “External factors affecting EFL students’ SDL of vocabulary via MELR”. Then, to determine whether this Mean differs significantly from the neutral benchmark of 3.0 on the 5-point Likert scale, a One-Sample T-Test was conducted.

Table 4. One-Sample T-Test – Factors Mediating EFL Students’ SDL of vocabulary via MELR

(Test Value = 3.0)

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Average (Q13_Q24)	9.488	387	0.000	0.3434	0.2723	0.4146

The T-Test indicates that the Mean score of 3.3434 is statistically significantly higher than the neutral midpoint of 3.0 ($t = 9.488$, $df = 387$, $p = 0.000$). This suggests that EFL students perceive the external factors as having a meaningful influence on their self-directed learning of vocabulary through mobile English learning resources. These results are also consistent with the average scores of individual statements in this section.

Table 5. Factors mediating EFL Students’ SDL of vocabulary via MELR

Statements/ Items	Min	Max	M
Technological infrastructure and access			
13. I often struggle to access MELR due to poor internet connection.	1	5	3.30
14. The quality and features of my mobile device affect my ability to learn English vocabulary effectively.	1	5	3.45

15. I find it difficult to access high-quality mobile vocabulary learning resources due to their cost.	1	5	3.66
16. I have difficulties handling technical issues with mobile apps or programs for learning vocabulary.	1	5	3.40
Average (Q13_Q16)	1	5	3.45
Socioeconomic factors			
17. The cost of mobile data or the internet limits my ability to use MELR regularly.	1	5	3.38
18. I sometimes struggle with using mobile learning platforms because of my limited digital skills.	1	5	3.35
Average (Q17_Q18)	1	5	3.36
Educational support			
19. I do not receive enough guidance from teachers on how to use MELR for vocabulary learning effectively.	1	5	3.20
20. My school curriculum does not integrate MELR, which makes it harder for me to stay motivated.	1	5	3.12

Average (Q19_Q20)	1	5	3.16
Learning environment			
21. In my cultural environment, learning vocabulary through MELR is not highly encouraged.	1	5	3.09
22. My peers' attitudes toward MELR affect my willingness to use them for vocabulary learning.	1	5	3.21
Average (Q21_Q22)	1	5	3.15
Cultural and linguistic context			
23. The vocabulary taught by MELR is not always relevant to my language learning goals.	1	5	3.50
24. Some mobile resources do not offer localized content for my region or learning needs.	1	5	3.45
Average (Q23_Q24)	1	5	3.48
Overall average (Q13_Q24)	1.00	5.00	3.34

The survey's Part 2 examined external factors that can influence students' self-directed vocabulary learning via MELR. Overall, students perceived these factors as moderately influential (overall Mean = 3.34, SD = 0.71, significantly above neutral). In other words, learners acknowledge that their self-directed efforts do not occur in a vacuum – they are facilitated or hindered by outside conditions. The data revealed several key categories of external mediating factors, each with varying degrees of impact.

An analysis of the five sub-clusters pertaining to external factors influencing EFL students' SDL of vocabulary via MELR reveals differences in levels of impact. The mean score recorded within technological infrastructure and access was 3.45, which suggests that the students perceived issues related to internet access, device technology, and other technical devices as the most important external constraints. Cultural and linguistic context also pose issues for the students with a Mean of 3.48, indicating that they might often struggle with the irrelevance of vocabulary content and the absence of culturally appropriate materials concerning MELR. At the same time, Socioeconomic Factors came out as an important obstacle as well (M = 3.36). In this case, the impact of financial burden, such as mobile data expenses, coupled with poor digital skills, significantly influenced learners' engagement with MELR. Educational Support averaged moderately high (M = 3.31), signifying insufficient educators' attention, together with low curriculum priority given to MELR, are regarded as restricting factors. Contrary to these results, Learning Environment got the lowest Mean (M = 3.15), indicating that while peer attitudes toward mobile learning and culturally framed views constitute a barrier towards mobile learning, they are less significant than the barriers posed by technology, socio-economics, or pedagogy. All of the above results emphasize that the students face content and infrastructure challenges as primary obstacles far more than sociocultural acceptance. This shows key areas in which both educational institutions and technology need to focus their resources.

Technological accessibility

Students reported that technology-related issues affect their learning to a noticeable extent (cluster Q13–Q16, Mean ~3.45, SD ~0.80). In particular, access to quality resources and stable connectivity emerged as concerns. Many agreed *"I find it difficult to access high-quality mobile vocabulary learning resources due to their cost"* (Q15, M = 3.66, SD = 1.00), the highest individual Mean in Part 2. This suggests that paid apps or premium content are perceived as barriers for some learners. In addition, basic infrastructure issues were present: for example, *"I often struggle to access MELR due to poor internet connection"* (Q13 M = 3.30, SD = 1.05) and *"technical issues with mobile apps"* (Q16 M = 3.40, SD = 0.97) garnered moderate agreement. Qualitative comments confirm these challenges – one student lamented, *"Sometimes the app crashes or my phone is too old to run the newest learning programs, so I get frustrated."* Another said, *"When the Wi-Fi in my dorm is slow, it interrupts my vocabulary practice."* Such obstacles highlight

that reliable technology and affordable, high-quality resources are crucial for enabling continuous self-learning.

Socioeconomic factors

Financial and skill-based factors also play a role (Q17–Q18, Mean ~3.36, SD ~0.90). Students moderately agreed that *“The cost of mobile data/internet limits my ability to use MELR regularly”* (Q17 M = 3.38, SD = 1.03). In low-resource settings, the price of connectivity can indeed deter extensive use of data-heavy resources (like streaming vocabulary videos). Additionally, some learners struggled with limited digital skills (Q18 M = 3.35, SD = 1.05), indicating that not everyone is equally equipped to exploit mobile apps efficiently. From interviews, there were comments like *“I’m not very tech-savvy, so I only use a couple of simple apps,”* and *“If the interface is too complicated, I get discouraged.”*

Educational support

The support (or lack thereof) from formal educational systems was another factor, though somewhat less strongly felt (Q19–Q20, Mean ~3.16, SD ~0.91). Some students agreed that *“I do not receive enough guidance from teachers on how to use MELR for vocabulary learning effectively”* (Q19 M = 3.20, SD = 0.98). Similarly, *“My school curriculum does not integrate MELR, which makes it harder for me to stay motivated”* (Q20 M = 3.12, SD = 1.00) was rated just above neutral by many. These Means suggest a mild concern: while students are largely self-directed, they notice the absence of institutional support. In their journals, a few students wrote about feeling “on our own” in figuring out which apps to use or how to approach learning: *“Our classes don’t really talk about learning vocabulary by ourselves. I had to learn by trial and error which apps to trust,”* one student noted. Another mentioned that when teachers encourage using certain apps or provide tips, it boosts her confidence to use them outside class, but such instances were rare. Thus, the lack of integration of MELR into classroom practice or guidance from instructors can leave students less certain or less motivated to persist.

Learning environment

This was the lowest-rated category among external factors (Q21–Q22, Mean ~3.15, SD ~0.93). Students were close to neutral on statements like *“In my cultural environment, learning vocabulary through MELR is not highly encouraged”* (Q21 M = 3.09, SD = 1.06, the lowest single item in Part 2). They slightly agreed that *“My peers’ attitudes toward MELR affect my willingness to use them”* (Q22 M = 3.21, SD = 1.04). The relatively lower scores imply that overt cultural or social discouragement is not a major barrier for most, or at least not uniformly so. In interviews, several students mentioned that using mobile apps to learn English is common among their friends, thus they feel it’s a normal part of learning. However, a few did point out that older family members or some traditional teachers didn’t take mobile learning seriously: *“My parents think I’m just playing on the phone, not learning,”* one student chuckled, highlighting a possible

lack of recognition from others. Another student noted, *"If none of my friends were using English apps, I might not use them either, but actually a lot of us do share app recommendations."* These mixed anecdotes suggest that peer environment can either encourage or have little effect, depending on the group, and that the broader culture is gradually accepting mobile learning. The moderately low impact of this factor could indicate that, for these university EFL learners, the culture is not strongly opposed to independent mobile learning, a positive sign that there are few social stigmas.

Cultural and linguistic context

Interestingly, the cluster concerning content relevance and localization (Q23–Q24) had one of the highest Means within Part 2 (Mean ~3.48, SD ~0.81). Students moderately agreed that *"The vocabulary taught by some MELR is not always relevant to my goals"* (Q23 M = 3.50, SD = 0.88) and *"Some mobile resources do not offer localized content for my region or needs"* (Q24 M = 3.45, SD = 0.91). These ratings indicate a perception that the quality and suitability of content in mobile apps/resources can be misaligned with learner needs. In their reflections, a number of students noted that certain apps focus on vocabulary that feels too easy, too general, or not in line with what they personally need (for instance, many apps target general TOEIC/IELTS word lists, which might not match a student's specific field or interests). One interviewee said, *"I stopped using App X because it kept teaching very basic words I already knew, and there was no way to adjust the level to more academic vocabulary."* Others mentioned the lack of Vietnamese translations or culturally relevant examples in some English learning apps, which made it harder to understand or less engaging. These comments underscore that content relevance is a significant factor: if students cannot see the connection between the vocabulary provided by an MELR and their own objectives, or if the content feels foreign and unrelated, their motivation and usage may drop. It reflects the importance of localized and personalized content in self-directed learning.

4.3. Discussion

This study aims to investigate how EFL students are engaged in self-directed vocabulary learning via MELR and the factors mediating their self-directed vocabulary learning practice. The findings offer a nuanced view of learners' readiness, motivation, strategic behaviors, and the sociocultural and contextual factors shaping their vocabulary development.

The results indicate that students show a promising level of readiness for SDL, especially in terms of planning and goal-setting. Many participants described setting weekly or daily vocabulary targets, selecting content of personal interest, and maintaining learning routines, behaviors that align with Garrison's (1997) conceptualization of SDL readiness and autonomy. Such intentional planning, when paired with the ability to choose learning materials and schedules, reflects what Deci and Ryan (2000) defined as autonomy in self-determination

theory, a psychological need that, when fulfilled, fosters intrinsic motivation. These findings reinforce earlier observations by Lai and Gu (2011), who emphasized the importance of learner agency and self-initiated goal setting in promoting engagement and persistence in learning.

In line with this, the study found high intrinsic motivation among learners, especially regarding the value they placed on vocabulary as a foundational component of language proficiency (Waldvogel, 2013). Students frequently reported enjoyment and personal satisfaction in learning new words independently, often outside any graded or teacher-assigned context. These expressions resonate with Deci and Ryan's (2000) framework, where internalized goals and the satisfaction of competence and autonomy drive meaningful engagement in learning.

However, while students reported strong planning and motivation, sustaining consistent study behavior proved more challenging. The weakest area in SDL readiness was time management, echoing findings from Macaskill and Taylor (2010), who identified this as a persistent obstacle in self-directed university learners. The current study's qualitative data reveal that while students attempt to integrate vocabulary learning into daily routines, they are often interrupted by academic pressures, digital distractions, or irregular habits. These findings parallel observations by Zhang and Pérez-Paredes (2021), where learners used mobile tools opportunistically but lacked sustained, structured engagement. In addition, evaluation and reflection were particularly strong among participants. Many reported tracking their progress, using app analytics or vocabulary journals, and adapting methods when certain strategies proved ineffective. This kind of adaptability supports deeper learning and long-term retention, as shown in studies by Waldvogel (2013) and supported by Vygotsky's (1978) SCT of mediated learning. In this context, mobile devices become mediating tools that scaffold learner reflection and enable strategic adaptation, aligning with Lantolf and Thorne's (2006) notion of tools extending learners' capabilities within their ZPD.

Importantly, external contextual factors also shaped learners' engagement with MELR. Socioeconomic issues, including access to reliable devices, data costs, and internet connectivity, were reported as tangible barriers, consistent with findings from Shen et al. (2023). Moreover, some learners faced limitations in digital literacy or felt discouraged in environments where mobile learning was not socially endorsed. These constraints reflect the importance of sociocultural mediation in SDL – learners do not operate in isolation but are embedded within social, institutional, and technological contexts that can enable or hinder their efforts.

In summary, the findings confirm that EFL learners are actively engaging and ready for self-directed vocabulary learning through mobile tools, guided by their intrinsic motivation and strategic use of technology. However, their success is mediated by several contextual and sociocultural factors (technical, economic, educational, and cultural ones) that shape how they access, use, and benefit from MELR. These insights contribute to the literature by addressing

gaps noted in earlier research, particularly the need to examine learner practices in everyday, unguided settings (e.g., Zhang & Pérez-Paredes, 2021), and by applying a sociocultural lens to better understand how the environment mediates SDL behavior.

5. Conclusion

This study explored how Vietnamese EFL students engage in self-directed receptive vocabulary learning via MELR, employing a convergent mixed-methods design grounded in SCT. The findings revealed that most participants demonstrated a reasonably high level of SDL readiness, particularly in motivation, autonomy, and self-monitoring. Students were able to set goals and use mobile tools strategically, such as vocabulary apps, e-dictionaries, and online content, to reinforce learning. However, consistent with existing SDL literature, time management emerged as a key weakness, with many learners reporting difficulty in maintaining regular study routines amidst distractions and competing demands.

On the other hand, students' actual vocabulary learning practices are significantly mediated by external factors such as technological access, social support, and content relevance, highlighting the interdependence between individual agency and contextual affordances. They selectively used MELR based on perceived usefulness, ease of access, and engagement features such as gamification or reminders. While the mobile tools facilitated independent learning, they also served as mediational artifacts, shaping learners' behaviors through structure, feedback, and interaction, as SCT suggests.

The study also highlighted the impact of contextual factors on SDL. Technical constraints (e.g., internet access, device limitations), socioeconomic issues (e.g., data costs), and the lack of educational guidance were recurrent barriers. Although few learners experienced overt discouragement, many reported minimal institutional or teacher support in effectively navigating MELR. Conversely, those with social or academic encouragement were more confident and consistent in their SDL efforts. The learners' ability to benefit from MELR, therefore, was not solely a function of personal motivation but was embedded in a sociocultural matrix of tools, norms, and support systems. These findings emphasize the need to support learners not just internally (building SDL skills), but externally (providing access and guidance), as effective self-directed mobile learning hinges on the synergy between the learner and their sociocultural context.

Despite its contributions, this research has several limitations. The reliance on self-reported data may be prone to recall bias or social desirability effects, though triangulation helped mitigate this risk. The study's context, Vietnamese university learners, may limit generalizability to other populations or ESL environments. Moreover, vocabulary learning outcomes were not objectively measured, restricting conclusions to behavioral engagement

rather than vocabulary gains. Future studies could adopt longitudinal or experimental designs to measure learning outcomes over time and across diverse learner groups. Future research should also examine specific MELR tools and app features to identify which affordances best support SDL of learners.

Based on these findings, it is essential for educators and institutions to actively support students in developing effective self-directed vocabulary learning habits using MELR. Teachers should not only encourage autonomy but also provide explicit training in strategic vocabulary learning, including how to select suitable apps, set achievable goals, and manage learning time effectively. Institutions can play a pivotal role by curating and promoting access to high-quality, contextually relevant mobile tools, improving digital infrastructure, and embedding MELR into formal curricula. Furthermore, fostering a culture of SDL through mentoring, peer sharing, and classroom integration can enhance learners' confidence and consistency. As the data indicate, students are more likely to persist in their self-directed efforts when they receive social and pedagogical support. Therefore, a combined approach that builds internal learner capacity while optimizing external learning environments is key to maximizing the potential of mobile-assisted self-directed vocabulary learning.

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