

The Impact of Mobile-Assisted Vocabulary Learning Tools on English Majors' Vocabulary Learning: a Case Study of Shanbay Word

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ABSTRACT

With the proliferation of mobile-assisted learning technologies, mobile-assisted vocabulary learning tools have emerged as a prominent alternative to traditional lexical instruction in university classrooms. In a bid to improve students' willingness and interest in vocabulary learning, this study selected four junior English majors from an university in Northeast China, investigating the impact of Shanbay Word on the vocabulary learning of four junior English majors and giving some necessary suggestions when using mobile-assisted vocabulary learning tools. Statistics of the questionnaire in this study were analyzed by SPSS 16.0. The findings are as follows: Firstly, findings revealed improvements in the participants' vocabularies, which embodies that the application of mobile-assisted vocabulary learning tools exerted a positive role in enlarging students' vocabularies. Secondly, according to the interviews, the mobile-assisted vocabulary learning tool also posed an upward effect on participants' learning behaviors, particularly in enhancing their motivation for vocabulary learning. The study contributes to the broader discourse on Mobile-Assisted Language Learning (MALL) by offering practical insights for its implementation in language education.

KEYWORDS

Mobile-Assisted Language Learning (MALL); English majors; Shanbay word; Vocabulary learning

1 Introduction

Vocabulary plays a fundamental role in language learning, serving as the cornerstone for developing core language skills such as listening, speaking, reading, writing, and translation. For English majors in China, vocabulary learning is particularly crucial, as they are required to master approximately 13,000 words in order to pass the Test for English Majors Band 8 (TEM-8)—a benchmark that reflects advanced language proficiency.

Traditionally, students relied heavily on printed vocabulary books for rote memorization. However, with the rapid advancement of mobile technology, an increasing number of mobile-assisted vocabulary learning (MAVL) applications have emerged, providing them with new experiences and feelings.

In response to this shift, a growing body of research has investigated the effectiveness and pedagogical impact of these mobile learning tools, aiming to explore their potential in enhancing vocabulary learning among EFL learners. However, although previous theses mainly focused on the overall effects and benefits of those vocabulary learning tools, researches about specific vocabulary learning tools are limited and scarce.

This study adopts a mixed-methods approach to investigate the effects of mobile-assisted vocabulary learning tools, with a specific focus on the application Shanbay Word, on the vocabulary learning of English majors and aims at investigating how Shanbay Word, a mobile-assisted vocabulary learning tool, impacts the learning efficiency of English majors, focusing on improvements in vocabulary changes and its effect on shaping their learning habits.

2 Literature review

Mobile-Assisted Language Learning (MALL), a significant branch of Computer-Assisted Language Learning (CALL), has evolved rapidly since the early 21st century, marking a pivotal transformation in the digitalization of language education. MALL is characterized by "portability, immediacy, personalized learning, and efficient use of fragmented time", making it particularly well-suited for vocabulary acquisition, which demands continuous input and review in second or foreign language learning contexts (Nawaz et al., 2025). Early MALL studies focused primarily on learners' acceptance, platform functionalities, and the impact on motivation and engagement. Gürkan (2018), through an empirical investigation, found that mobile vocabulary learning applications significantly improved vocabulary mastery and enhanced learners' motivation. Moreover, studies by Huang (2019) extended the boundaries of MALL research by exploring "pronunciation training and peer feedback", confirming the value of mobile-based tools in improving language production.

Among MALL research topics, vocabulary learning has drawn particular attention due to its fundamental role and measurable outcomes. Mobile-Assisted Vocabulary Learning (MAVL) emphasizes the acquisition and reinforcement of both "receptive and productive vocabulary knowledge" through mobile devices, often supported by algorithms that manage review schedules based on memory retention principles (Li & Hafner, 2022; Mohammadi et al., 2024).

Multiple studies have confirmed that MAVL tools can significantly enhance the efficiency and quality of vocabulary

retention. Mohammadi et al. (2024), in a longitudinal study involving university students, found that participants who used MAVL tools demonstrated superior performance in academic vocabulary mastery, productive vocabulary usage, and overall language fluency compared to those using traditional methods.

Despite the wealth of research on the general effectiveness of MAVL tools, little attention has been paid to specific platforms, especially Shanbay Word. Most existing studies tend to focus on user satisfaction, functionality evaluation, or short-term learning outcomes, while failing to investigate the long-term impact of Shanbay on learners' behavior and vocabulary development—particularly among English majors. Li Zhangjing et al. (2021), for instance, explored Shanbay Word's application among English major students and found that it positively influenced vocabulary size and motivation. However, their study was limited by a short observation period and lacked deeper analysis of "strategy transfer, learner persistence, and productive output development".

In summary, existing research both domestically and internationally has established that MALL and MAVL can effectively promote vocabulary acquisition and learner motivation. However, context-specific studies on local MAVL platforms such as Shanbay Word remain insufficient, particularly concerning English major students' learning trajectories, strategic behaviors, and integration into curriculum design. This study, therefore, aims to fill this gap by empirically investigating the impact of Shanbay on vocabulary learning among English majors.

3 Research methodology

This study adopted a mixed methodology to deeply explore the relationships between mobile-assisted vocabulary learning tool and English majors' English vocabulary learning. This paper aims at responding to these questions:

- (1) Will the mobile-assisted vocabulary learning tool increase English majors' vocabularies?
- (2) Will the mobile-assisted vocabulary learning tool exert positive influence on shaping English majors' learning habits?

Four English majors from a certain university in Northeast China were recruited for the study. All of them are English majors at the same grade and all of them are male participants. The four participants have passed Test For English Majors-Band 4 (TEM-4). Before the research, the writers had released a questionnaire to make clear of the situation that how many people had used mobile-assisted vocabulary learning tools (such as Baicizhan), the four participants were selected during this process. In this questionnaire, the four were who expressed their willingness to participate in a further study. Before the study, the four's vocabularies had been tested by Test your vocabulary, a website to test one's vocabulary. Table 1 shows the scores of TEM-4, vocabularies and their codes.

Table 1 Scores of TEM-4, vocabularies and codes of the four participants

Number	Scores and the grade of their TEM-4	Vocabularies tested by Test your vocabulary
1	89 an excellent grade	10568
2	74 a good grade	6981
3	81 an excellent grade	13522
4	63 a pass grade	7100

Research procedures are as follows:

Firstly, a questionnaire was released a week before the formal study to select research participants and to get an panorama of students' usage of mobile-assisted vocabulary learning tools. Secondly, the data of the questionnaire were analyzed by SPSS. Thirdly, the four participants were included in a 7-days experiment to observe the effect of mobile-assisted vocabulary learning tool on them. Fourthly, an interview was conducted one week after the experiment to gain the qualitative data. Finally, both quantitative and qualitative data were analyzed. Therefore, results were presented and research questions could be addressed.

4 Results and discussion

4.1 Analysis of quantitative data

To delve deeper into the specific influence of mobile-assisted vocabulary learning tools on vocabulary acquisition among English major students, this study meticulously designed and disseminated the questionnaire titled "The Impact of Mobile-Assisted Vocabulary Learning Tools on Vocabulary Learning of English Major Students". A total of 68 valid samples were successfully collected. The interviewees range from freshman, sophomore, junior, senior and postgraduates of a certain university in Northeast China. Among these, 17 respondents reported using "Shanbay Words", accounting for 28.33% of the user population. The overall survey findings manifested the following two prominent trends:

- (1) Positive Impacts on Vocabulary Expansion

From an objective cognitive standpoint, mobile-assisted vocabulary learning tools have substantially facilitated students' acquisition of new words and the construction of semantic networks. Specifically, a significant 71.67% of the respondents indicated their "agreement" or "strong agreement" that these tools enable them to "more accurately comprehend the meaning of new words". 61.66% of the respondents opined that, in comparison to traditional vocabulary books, such tools are "more effective in assisting the construction of semantic networks", encompassing aspects like roots, synonyms, and collocations.

Moreover, 73.33% of the respondents concurred that the testing functionality of these tools aids in discerning between words they have mastered and those they have not, thereby highlighting the advantages of systematic learning and immediate feedback.

(2) Positive Guidance of Learning Behaviors and Motivation

Beyond cognitive outcomes, mobile-assisted tools also exhibit potential in molding learning behaviors and motivating students. 63.34% of the participants stated that they could adapt their vocabulary learning progress according to their individual learning rhythms, thereby demonstrating a relatively high level of learning autonomy.

Despite the prevalence of a "check-in mechanism" in many tools, 65% of the respondents indicated that they would still be inclined to use these tools even in the absence of such a mechanism, suggesting a gradual shift from "passive check-in" to "active engagement" in learning behavior.

In contrast to the traditional paper-based word memorization approach, 71.67% of the respondents believed that the multimodal presentation of "audio + image + example sentences" enhances the depth of memory, further enriching the learning experience.

More significantly, 76.67% of the students reported that they would proactively employ various strategies when encountering word recall difficulties, such as recalling example sentences and memorizing word roots. This reflects that mobile tools effectively stimulate students' strategic learning behaviors.

This survey outcome aligns seamlessly with the themes that emerged from the subsequent interviews. Respondents commonly cited keywords such as "mobile tools enhance learning initiative", "vocabulary memorization is no longer mechanical", and "a stronger sense of achievement during the usage process". This indicates that such tools can effectively stimulate the intrinsic motivation of English major students and foster the development of their continuous and autonomous vocabulary learning habits.

Results of experiments :

The four participants were required to use Shanbay Word to do vocabulary learning for seven days, with each day learning an hour. After the seven-days experiment, researchers used Test your vocabulary to test their vocabularies again. Table 4.2 reveals the change in their vocabularies.

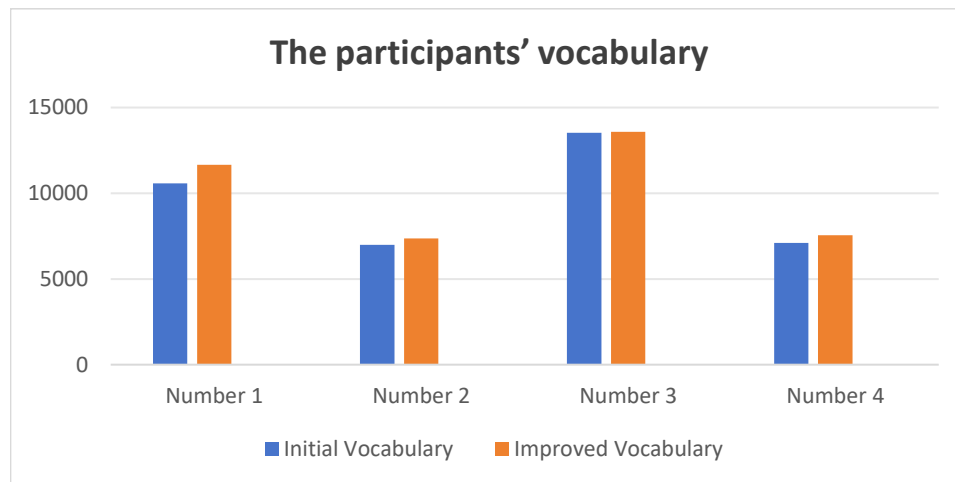


Figure 1 Participants' vocabularies before and after the experiment

4.2 Analysis of interviews

An interview was conducted one week after the experiment to collect qualitative data. The four participants were included in the interview. Contents of interviews were recorded, and then transcribed, coded.

During the interview, almost all of the four participants argued the importance of using Shanbay Word as a way for vocabulary learning. They considered it convenient to start vocabulary learning everywhere and at any time because it was an app in their phones, which were indispensable for daily life. Furthermore, the mechanism of daily reminder for Shanbay Word urged them to learn vocabulary every day. One participant said that he once didn't accustomed to learning vocabularies via apps, however, the mechanism would remind him all the time if he hadn't finished tasks.

In addition to positive comments on Shanbay Word, they also came up with some concerns about Shanbay Word. One participant pointed that the usage of Shanbay Word might make him distracted because he had to stare at the screen for a long time. Besides, one participant also mentioned that some certain services should be only adopted when he got a VIP account. Some services such as suffixes of the words, vocabulary association should only be accessible by getting a VIP account.

4.3 Discussion

The results of this study share many similarities with existing literature, verifying the positive effects of mobile-assisted vocabulary learning tools on enhancing vocabulary mastery, learning motivation, and learning autonomy. Similar to the studies by Li & Hafner (2022) and Mohammadi et al. (2024), this study also found that mobile learning can promote students' receptive and productive vocabulary knowledge, with significant advantages in contextual memory, feedback mechanisms, and control over learning pace. Participants generally reported that through mobile-assisted learning tools, they could more accurately grasp word meanings and their application abilities. The questionnaire and interview data of this study also reflected the research results of Gurkan (2018), indicating that MALL has a positive impact on learners' learning motivation and self-regulation ability. Most students demonstrated strong self-regulatory behaviors during the usage process, such as arranging learning tasks according to their personal pace. This suggests that the use of mobile learning tools helps to stimulate learners' initiative. By providing multimodal input, timely feedback, and autonomous control functions, mobile learning tools facilitate the internalization of learners' knowledge, offering a new perspective for MALL research.

Compared with existing studies, this paper demonstrates unique research innovations in the following aspects. This study focuses on English major students, a group with higher vocabulary demands yet underrepresented in mobile-assisted vocabulary learning (MAVL) research. Using a small sample, it combines quantitative assessment, experimental intervention, and semi-structured interviews to explore not only the effectiveness of Shanbay Words, but also the underlying mechanisms driving its impact.

Despite the contributions made by this study, several limitations remain and should be addressed in future research. Firstly, the sample size was small and homogeneous, involving only four male junior English majors. While this enabled an in-depth examination of individual behavioral changes and strategy use in mobile-assisted vocabulary learning, it limits the external validity of the results. Future research should recruit larger and more diverse samples, including participants of different genders, academic levels, and educational backgrounds. Secondly, the one-week research period was relatively short, potentially insufficient to capture long-term effects such as vocabulary retention and sustained motivation. A longitudinal approach is recommended to explore dynamic and lasting changes in learner behavior. Thirdly, variable control was limited; factors such as gender, language proficiency, and motivation types were not fully considered, preventing nuanced analysis of learner differences. Future studies should incorporate a wider range of variables and apply both quantitative and qualitative methods for deeper insights. Additionally, although this study used questionnaires, vocabulary tests, and interviews, it lacked objective behavioral data such as actual learning time, feature usage, and review patterns. Integrating platform-based data or learning logs would allow for more comprehensive process tracking. Finally, the vocabulary testing tools used had limitations. The study employed the online tool "Test Your Vocabulary," which participants found generally accurate, though it lacks empirical validation. More reliable and empirically supported vocabulary assessment tools are needed for future research.

5 Conclusion

The statistics reveal that Shanbay Word could pose a positive effect on English major students' vocabulary learning in terms of vocabulary growth, memory retention, and learning autonomy. Participants not only expanded their vocabulary within a short period but also demonstrated a stronger awareness of self-regulated learning. A key conclusion that can be drawn from this study is that mobile-assisted vocabulary learning is of great significance not just for English majors, but also for English learners in general, especially in promoting long-term and flexible learning strategies. Meanwhile, Shanbay Word can also be utilized as a practical tool to help cultivate students' consistent learning habits and improve their motivation to engage in vocabulary learning on a regular basis.

In conclusion, this study not only confirms the effectiveness of mobile-assisted vocabulary learning through Shanbay Word, but also emphasizes its potential in shaping learners' habits and fostering autonomy. As technology continues to reshape language education, integrating such tools thoughtfully into learning environments will be essential for supporting sustainable and learner-centered vocabulary development.

About the Author

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