

Exploring Mobile Apps in English Learning

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Abstract. With the gradual integration of information technology in education, mobile devices have been critical tools to achieve informal learning in the domain of language. The application software uploaded to mobile devices with its characteristics of intelligence, personalization, game, and sociability, breaks the limitations of traditional learning methods in time and space and has been of great help to learning languages. In China, English as an International language is a compulsory course in elementary and secondary education, which is also important for college students who are required to pass English-level exams CET-4 and CET-6. Therefore, based on the literature research in the past ten years, this paper attempts to fully reveal the advantages and disadvantages of mobile apps for English learning and explore the challenges they face. Studies have shown that language learning apps have incomparable advantages: 1) user-friendly design, 2) wide-range available learning materials, 3) effectiveness in improving English skills and learning motivation, 4) effectiveness in aiding traditional English teaching. However, it still has some defects in its own design and practical use: 1) the under-improved feedback and connects functions, 2) the low-efficient Internet connection, 3) the not-so-good external environment for its use, and the insufficient utilization. This paper proposes that it is necessary for teachers, educators, and developers to make a joint effort in order to design more engaging and effective apps for English learning. It is also key to give guidance to students and teachers in order to achieve the full utilization of apps.

Key words: Mobile learning; Mobile Assisted Language Learning; Language Learning Applications; English learning.

1. Introduction

In recent decades, mobile technology has brought about a new form of learning, mobile learning (M-learning), which mainly features mobility and makes the happening of learning not limited by time and place. The ubiquitous mobile devices are important tools to realize it. The conduct of using them to learn language has aroused great interest among researchers in the domain of linguistics and pedagogy and it is called mobile-assisted language learning (MALL). Kukulska-Hulme studies the properties presented by MALL and especially compare them with computer-assisted language learning (CALL) [1]. Some researchers pay attention to the theoretical basis underlying MALL. The constructivism theory, social-cultural theory, second language acquisition theory, and multimedia theory have been discussed [2-6].

With the advances in mobile devices, functional language learning apps have mushroomed over the past years and played an important role in MALL. In this paper, the authors review the status quo of research on language learning apps and find that it mainly covers three aspects: the design, category, and use of language learning apps in practical education. They especially focus on English learning apps which are most used in China where English is a foreign language and is very important at each education level, attempting to figure out the current state of English apps and their application in English learning and teaching: the advantages and the disadvantages and then make suggestions about English apps' further development on the basis of the problems they are faced with.

2. The Overview of Mobile learning

In recent decades, IT (information technology) has pervaded every single domain in society, among which mobile communication and mobile computer technology have greatly changed people's daily work and study. Applying mobile technology to education creates a brand-new way of learning -- mobile learning (M-learning).

Actually, the use of technology in education is not novel. Before m-learning, distance learning (d-learning) which is based on information technology has existed for decades. The well-known theory of d-learning's development is from Keegan, who divides it into three stages. The first phase is distance learning. The second one is the period of electronic learning caused by the Electronics Revolution. The third one is mobile learning as a product of the integration of mobile and wireless technology with education. M-learning with its unique feature -- mobility -- distinguishes from d-learning and e-learning and arouses many researchers' interests.

Although there is no unified definition of m-learning, three points have been acknowledged by many researchers: the use of personal electronic devices, social and content interaction, and situation. In Dye's interpretation of m-learning, he stresses that the implementation of m-learning is free from being limited by specific time and space and that the mobile devices learners use are expected to effectively provide learning materials as well as two-way communication between teachers and learners [7].

3. The Profile of Mobile-assisted Language Learning

With support from handheld mobile devices, along with web and telecommunication technology, it has been increasingly inviting to learn languages in an easy-to-change strategy. This language learning method is recognized as Mobile-Assisted Language Learning (MALL).

Kukulka-Hulme holds that MALL is done by personal, portable devices and stresses accessing language knowledge continuously or spontaneously under different contexts of use [1]. Apart from the inherent feature of m-learning: mobility, MALL specially features portability, individuality, context sensitivity, as well as social connectivity.

Exploring the theoretical basis of MALL is important to make this domain mature and systematization. The authors especially pay attention to it, and through reading relevant literature they found that it mainly includes the following theories. Constructivism emphasizes the subjective role of students in learning and focuses on the effects of mobile learning on students' motivation, independent learning, and other aspects. Studies focused on sociocultural theories mainly characterize the mobile device as the mediating tool in the collaboration process [2-3]. Besides, a few papers have focused on specific conceptions in second language acquisition theories such as vocabulary acquisition theory and input-output hypothesis [4-5]. Moreover, the dual decoding theory and cognitive load theory related to multimedia learning theory are often used for designing vocabulary mobile learning [6].

4. Language Learning Apps in MALL

The language learning app is the main tool to achieve MALL. The authors review studies on language learning apps (LLA) published from 2012 to 2022 and find they mainly discover three aspects: design, category, and usage of LLA.

4.1 Design

The design of apps is related to their effect on learning experience and outcomes. In the early stage of m-learning, most comments pointed to the design of mobile devices, such as small screens, inefficient text input systems, poor-quality audio, and slow Internet connection. Godwin-Jones later points out that these drawbacks hamper many research projects on m-learning and also lead apps to few and low-efficient [8].

After 2007, with the advance in technology, the weaknesses of mobile devices' design are gradually overcome and more language learning apps show up. Much attention is paid to mobile apps' potential in promoting language learning. Some researchers demonstrate this possibility based on the principles underlying the design of language learning apps (LLA). Ally explains that among these are the autonomous use of learning resources and independent knowledge units for better processing information [9]. Other principles used for guiding language learning implemented by mobile apps come from the gamification area. One piece of evidence for this point is the game design elements in mobile language learning.

In recent years, the research perspective is placed on the internal functional design of LLA and many shortcomings are proposed. These include the criticism made by Burston that user-interface design is poor, the translation function is too focused on and online connection with other users is neglected [10]. In the research of Heil et al., they reveal that providing drills or similar services is common in apps, but the drill-relevant feedback for explanation or correction is little. Plus, most apps are not well at providing individualized service[11]. Rosell-Aguilar argues that when developing language learning apps, many practitioners fail to radically integrate pedagogical theories. This is reflected by the exercises without efficient instruction and feedback on performance with only marking true or false [12].

The authors find that fewer research projects directly explore the common guiding principles or theories regarding the current language learning apps' design and make relevant suggestions to developers or discuss how to better integrate some learning theories into the design of LLA, like situated learning and metacognitive theory which encourage users' self-regulated and lifelong learning.

4.2 Category

In reviewed literature, it is presented that dictionary apps are commonly characterized as utility apps and other apps are generally divided into categories on the basis of the learning skill the app mainly aims to enhance.

Sweeney discusses the style of the language learning app on the basis of its nature--mobile app. He points out that a fundamental kind of app should exist from an app design's point of view[13]. According to Ginsburg's interpretation that apps should be developed based on Apple's HIG(Human Interface Guidelines) and belong to one of the three types: utility, productivity, and immersive, Sweeney proposes that a dictionary app should not only be coincided with utility standard (single function, quick look-up) but also need to present productivity property(diverse functions, helping to achieve goals).

Similarly, dictionary apps and translation apps are considered Liang utility apps due to their property of rapid look-up function[14]. Besides, in accordance with the major skill the app focuses on, he groups 20 commonly recommended apps for learning English into 8 categories such as vocabulary, grammar, listening, speaking, and so on. This kind of classification can also be found in Nami's research on college students' choices and perceptions of LLA[15].

Rosell-Aguilar proposes different opinions and classifies LLA in a more detailed way[12]. In his taxonomy, the apps focusing on different language skills, named Separate Language Learning Skills Apps, belong to a broader category: apps designed for language learning, which also involve Full Language Learning Package Apps -- these are developed for handling rounded language learning, which provide wide-range exercises, show explanation for grammar, allow interaction between learners, and give users opportunities to communicate with native speakers or ask help from learners' communities. He also notices the app useful, not designed for language learning, including device-native apps like web browsers, additional apps that are installed in mobile devices like BBC News, and other useful apps like maps and geography.

The third aspect is the most discussed by reviewed studies, and the use of apps for English learning is most focused on. In China, English is a demanded course in both elementary and secondary education, and many adults regard high English proficiency as a good tool for job hunting or

promotion. So, the authors especially focus on the usage of English learning apps and discuss their advantages and disadvantages.

5. The Advantages of English Learning Apps

The wild usage of English learning apps is mainly due to their user-friendly design and their effectiveness in English learning and teaching.

5.1 The User-friendly Design

In order to attract users, many developers have allowed low-cost or even free utility of English learning apps, designed engaging user interfaces, put wide-range and diverse learning materials, and set up some practical functions in them. These all make English learning apps efficient and useful learning tools. For example, in addition to focusing on the textbook, English learning apps have various contexts to facilitate vocabulary accumulation. Learners can use portable vocabulary apps to prepare for the level exams, such as TEM-4, and TEM-8, instead of taking heavy dictionary books in hand. The apps also set up many games such as matching pictures and completing words to stimulate participants' interest in learning and strengthen their memory.

5.2 The Effectiveness on English Learning

This part is divided into three aspects: the effect on learning outcomes, motivation and higher-order thinking skills.

5.2.1 The Effects on Learning Outcomes

Many studies prove the English learning apps' effect on specific English skills [16-17]. Most of them are aimed at vocabulary learning enhancement. It is suggested that students get improvement in their vocabulary knowledge and retention after using mobile apps due to their design, readable content, and easy absorption.

Z. Wang and F. Han find that mobile application has a significant effect on their monologic oral production in the aspects of complexity, fluency, and accuracy [16]. In the research of Naderi and Akrami, they claim that group study in apps can positively effect students' reading comprehension or critique writing proficiency [17]. Mobile apps provide English foreign language learners an accessible, easy, and helpful way to learn language skills and enhance their academic performance because of their design features like gamification.

5.2.2 The Effects on Studying Motivation

Motivation is an important psychological issue, which influences the use of the application and the outcomes of language learning. Many studies suggest that their participants can be motivated when using mobile apps to learn. For example, Klimova indicates that due to the meaningful content and immediate feedback, learners are encouraged to use the applications to study[18]. The feedback learners receive makes them more confident and more participated in class.

5.2.3 The Effects on Higher-order Thinking or Competence

Higher-order thinking skill(HOTS) is highly valued by many educators. HOTS can be reflected by skills like analysis, synthesis, evaluation and so on. In the research conducted by Hwang and Chen, it is shown that the students who use the proposed system designed by researchers can give more useful comments on others' writing[19]. This is because that many convenient tools provided in that system are of great help in encouraging students' analytical thinking, comparing, and communication skills. An experimental study done by Kondo shows that students using a mobile device with a program developed on the basis of a principled self-regulated learning framework are more likely to conduct self-regulated study [20].

5.2.4 The Effect on English Teaching

English learning apps can also assist teachers' teaching process. First, English learning apps with rich content can attract students' attention and pique their interest in learning. There are numerous content-rich animations, interesting dubbing at varying difficulty levels, and oral follow-up training in numerous English learning apps [21]. The conventional method of teaching spoken English in the classroom consists primarily of reading or repetition, which does not motivate students to learn. Attention and interest of students are essential factors that influence the quality of instruction, and the integration of English learning apps with English classes can optimize them. This can make dull language learning lively and exciting, reducing students' cognitive difficulty and making it easier to accept knowledge.

Second, numerous English-learning apps can provide students with an authentic environment for speaking practice. By integrating new lesson content with students' prior knowledge, teachers provide students with various ways to practice speaking. Thereby it can attract their attention and increase their interest in learning spoken English, making classroom instruction more flexible and efficient and fostering an environment conducive to independent, individualized learning.

6. The Disadvantages of English Learning Apps

What about the disadvantage of current English learning apps? The authors review relevant literature published from 2012 to 2022, finding that the cons of apps for English learning mainly refer to two aspects: the drawbacks regarding apps' design, and the shortcomings of using apps for English learning.

6.1 English Learning Apps' Design

The disadvantages of apps design mentioned in previous papers are divided into two kinds: one about functions in apps, and the other regarding technical features. As for functions, many fail to provide connection functions--allowing users to connect with others, either for group study or for communicating with partners in English. Teodorescu summarizes students' perceptions about the apps' disadvantages, among which the lack of human contact is shown in most apps[22]. Besides, lacking feedback or corrective feedback is another common issue in many English learning apps. It is suggested that current apps run on smartphones fail to instruct users timely as well as give them feedback[23], although it is worth noting that several apps do well in this point like Learn English listening & speaking BBC, VOA news which gives learners guidance on what the mistakes are, and how to adjust them[24]. The cons about technical features include Internet connection and payment system. Several researchers point out that the low-efficient Internet connection and the online mode required for accessing learning materials negatively influenced students' learning experience[21][25]. Also, the charge for extra high-quality learning materials in some apps makes students discontent.

6.2 English Learning Apps' Utility

The shortcomings in the use of English learning Apps are as follows.

First, although the external learning environment is more conducive to the integration of apps in English learning, it still needs to be further optimized. In reviewed papers, the authors find that there are still many teachers failing to fully appreciate the use of apps and appropriately combine it with traditional teaching. Obviously, the lack of teachers' proactive participation in using technology is not beneficial to students' language learning. Also, the common usages of apps for students are social chatting, entertainment, and shopping. Some still practice English skills like speaking in traditional mode. Of course, this is also the reflection of a common app's drawback: poor communication function.

Second, through reviewing the literature, the authors find it is usual for students to be distracted by other entertainment apps and end up checking other apps' notifications when they are using apps to learn English. This phenomenon leads it difficult for teachers or tutors to know clearly about

students' behaviors when they use apps to learn English. In Subrata's study about applying Google Classroom in online teaching, an app for online teaching, he finds that the students are negatively affected in terms of psychomotor [26]. A lot of factors caused this to happen, for instance, teachers cannot monitor and control the students' attitudes or behavior during the learning process conducted in this learning management system.

Third, even though some use the English learning app, they lack a rounded understanding of its effectiveness and seldom consider how to make full use of this tool to truly improve their English proficiency. It is shown in the reviewed papers that students' perceptions of English learning apps primarily cover apps' technical features, learning materials and functions they provide. It seems that many students fail to recognize that apps help them keep pace with the times and help them in fostering independent and innovative learning abilities.

7. Suggestion

Based on the disadvantages above, the authors make their suggestions for English learning apps' design and their practical usage.

7.1 English Learning Apps' Design

First, functions in English learning apps should be diverse and effective. It is stated that the apps' functionality is a determinant of students' satisfaction levels. The authors propose two functions that need to be added or reinforced. The feedback function refers to two points. For one thing, using various charts apps can visualize users' learning process, like how long they learn, how many times they are interfered with by the notification from other apps, and present their progress in specific language skills. For another, the feedback on users' mistakes should be given indirectly with tips that encourage users to think that what might be wrong and try to make adjustments by themselves, instead of being presented simply with a score and no correction. In this way, learners may be trained in higher-order thinking skills. The final one is the connection function. Establishing online aisles is a key way to satisfy users' need of communicating and sharing, and it can also promote collaborative learning valued by many researchers.

Second, learning content should be more related to the knowledge learned in school. This point is supported by Lee's finding in his study on the effects of integrating a platform into college students' English learning[23]. He finds that students show a preference for learning apps in which the learning content is school-course related. Furthermore, the authors add that the learning activities provided by apps can create more opportunities for learners to apply what they have learned. For example, timely and interesting exercises, relevant short videos, and online group discussions are all worth being recommended.

Third, teachers and experts should be more involved in learning apps' development. Many studies come to the same conclusion that most students only use English learning apps on their mobile devices for no more than one hour per day. This reveals that although some apps do prove their effectiveness in English learning, they cannot hold their users for a long time. One reason the authors think is that they fail to genuinely attract users and improve their English proficiency level. Many developers pay much attention to how to make their apps profitable. Teachers are the ones most close to learners. Linguists and educators are those with sufficient pedagogical and psychological knowledge. With their participation, the apps can more fit into users' learning process mechanism and the above two suggestions can be better achieved, which may bring fundamental progress in learners' English learning.

7.2 English Learning Apps' Utility

First, it is necessary to create a good internal and external learning environment for students. Schools need to pay attention to the importance of promoting mobile app learning projects. They can first select some students with relatively high information literacy to participate in mobile learning

projects and integrate cutting-edge teaching content into mobile apps. If this project proves its effectiveness on those students' learning motivation and outcome, it is worthy of expanding it. In this way, teachers' awareness of the prospect of MALL and students' appreciation of English learning apps can be improved.

Second, developers and educators should pay attention to explaining apps' functions and effectiveness to students and teachers, as well as give guidance about how to properly choose from and fully utilize diverse English learning apps. The explanation and guidance can be spread in kinds of ways, like interesting explanation videos, online and offline campus forums, and electronic brochures.

8. Conclusion

In this review, it can be concluded that MALL has been an emerging research direction in English learning. With its user-friendly design, wide-range learning content, and practical functions, the English learning app has brought many benefits in improving students' English skills and learning motivations and has been proven helpful to traditional teaching. This effective tool also has much potential to help develop learners' higher-order thinking skills. But from the relevant literature, the authors also find some disadvantages of English learning apps and their use in practical education. The feedback and connection functions in apps are not effective; The low-efficient Internet connection and the extra fees for more learning materials may lead to the decline in user satisfaction; As for the utilization, the authors conclude that when the students use the application, distraction may make them fail to get the ideal achievement they expect. Besides, some applications haven't been introduced to the classroom, and the teachers haven't found an effective combination between informal learning with apps and formal learning in the classroom. Based on these cons, the authors make some suggestions. Firstly, English learning apps' functions should be improved more diversely and effectively, and their learning materials should be more related to the school's content. Also, teachers and experts should take a more active part in designing the applications for language learning. Finally, it is recommended for schools improve the external environment of informal learning with apps and for developers to give instructions about how to choose and use apps rationally and thoroughly.

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