

Exploring Deep Learning of English Vocabulary Acquisition in a Mobile Learning Environment

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Abstract. With the continuous development and extension of mobile learning technology, English vocabulary learning has become more extensive, personalized and communicative with the support of the mobile learning environment; at the same time, the creation of this environment has gradually become one of the important ways to learn English vocabulary. However, there are two sides to everything, and mobile learning is no exception. In the learning process, we find that English vocabulary learning becomes more fragmented in the mobile learning environment, and the relevant information is not effectively accessed by learners, lacking some deep learning thinking skills. Deep learning in education is a way of learning that aims to construct more meaningful learning, to understand, generalize, master and apply on the basis of memory, to critically accept and learn new knowledge in conjunction with pre-existing knowledge structures, to establish interconnections between knowledge, and through analysis, to make decisions and solve problems through learning. Based on the research on English vocabulary learning in mobile learning environment, this paper makes corresponding elaborations and suggestions on the problems and effective strategies for deep English vocabulary learning in mobile environment in order to improve learners' efficiency in English vocabulary learning, enhance the depth of learning and improve the thinking ability of learning.

Keywords. English lexicon; Deep learning; Mobile learning; Teaching English as a Foreign Language; MALL

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1. Introduction

In today's society, the fast-moving Internet industry has brought new changes and new challenges. The development of education is governed by and mutually reinforced by the development of science, technology and productivity levels. In order to improve the quality of education and promote educational equity, a range of educational technologies such as mobile learning can build a smarter learning environment and transform teaching and learning for the digital generation of learners. Optimizing the way of deliver the education has become a very important issue in education reform. The advent of the 5G era brings the following features as ultra-high speed efficiency, high reliability, low latency, low power consumption and massive links to mobile learning. By enhancing the experience of using high speed broadband, it provides solutions and aids to crack the problems in pedagogy.

English is one of the main international languages spoken in the contemporary world and is one of the most widely spoken languages. Around twenty countries in the world use English as an official

or second language, and almost one in five people in the world knows English to some degree. English is also so widely spoken that more than seventy per cent of the world's mail is written in English or addressed in English. Sixty percent of the world's broadcast programs are conducted in English. The vast majority of international thesis materials are published in English, the vast majority of international conferences are held in English as the first common language and it is one of the official working languages of the United Nations. The requirements of examinations such as the university entrance examinations, the TOEFL, IELTS examinations have also led to a significant increase in the demand for English as an internationally important language. Vocabulary learning is one of the essential language learning activities. As an important part of language learning strategy research, second language vocabulary learning strategies are also one of the hot topics in the field of second language acquisition research in Japan and worldwide. When interfering information replaces the real learning content, not only does the learning effect have to be greatly reduced, but the learner's psychological state is also affected. Does mobile-based English vocabulary learning also lead to fragmentation? Can mobile learning facilitate learners' systematic acquisition of English vocabulary and improve their vocabulary competence? These are questions that deserve to be explored, but no systematic research has been conducted in the field of mobile learning and second language vocabulary acquisition from the perspective of deep vocabulary learning.

2. Previous Research

John Traxler (2005) summarizes the current state of mobile learning, outlining that it is gaining widespread interest and academic recognition. Academic conferences and international workshops on mobile learning are increasing year by year. He defines mobile learning as “any educational provision where the sole or dominant technologies are handheld or palmtop devices”. He further explains the mediums through which this can be achieved, namely 'mobile 'phones, smartphones, personal digital assistants (PDAs) and their peripherals, perhaps tablet PCs and perhaps laptop PCs”.

, Sharples (2009) argues that mobile learning should not be explored solely in terms of technology, but rather in terms of different aspects of how knowledge is acquired. He defines mobile learning as "Research into mobile learning is the study of how the mobility of learners augmented by personal and public technology can contribute to the process of gaining new knowledge, skills and experience."

In order to clearly articulate the concept and meaning of m-learning, this section first classifies mobile learning specifically through a summary of existing definitions and categories of mobile learning definitions, and gives typical definitions within each category. John Traxler (2007) classified the emerging trends of mobile learning.

3. The Significance of the Research

Rapid advances in information technology have made mobile learning ubiquitous. Among the various forms of mobile learning, the use of apps specifically designed to run on mobile devices can improve the learning experience. The rapid growth of the m-learning app market has provided learners with a wide range of options and, as a result, the market for this category is highly competitive, competing to gain user preference, while the combination of industry and research has led to m-learning becoming a new research hotspot. Previous research has mostly focused on the development and validation of m-learning App design evaluation models and App development and design from the perspective of user perceived value, and on learners' attitudes towards m-learning. However, vocabulary acquisition itself, as the essence and connotation, has been neglected.

The practical implications of this thesis are that it can provide concrete suggestions for improving the effectiveness of mobile-based English vocabulary learning. On the one hand, this thesis examines the strengths and weaknesses of major mobile vocabulary learning software in facilitating deep vocabulary learning from the perspective of deep vocabulary learning, and obtains ideas on how deep vocabulary learning can be achieved. On the other hand, this thesis investigates learners' purposes and needs for mobile vocabulary learning, and their perceptions of what aspects of English vocabulary learning can be achieved with current mobile devices. Integrating the researcher's and learner's perspectives in order to deepen the understanding of the feasibility of realizing deep English vocabulary learning on mobile terminals and, on this basis, to propose practical suggestions to

promote the effectiveness of English vocabulary mobile learning and help learners improve their English vocabulary skills.

4. Research Method

4.1. Literature Research Method

Literature research can reflect the development history, latest trends and core views of a certain research field, and provide a starting point, foothold and breakthrough for new research. Based on the extensive collection of relevant literature at home and abroad, this study systematically compares and analyzes the existing research on mobile learning and deep learning, summarizes the classical theories on mobile learning and its related research experiences, extracts the possible influencing factors, puts forward the research hypothesis and establishes a model of mobile English vocabulary learning based on deep learning.

4.2. Questionnaire survey method

According to the proposed theoretical model and research hypothesis, this study systematically investigated the definition and measurement of each influencing factor, referred to a large number of measurement scales and combined with the characteristics of mobile learning to design a deep learning factor questionnaire for mobile learning, after the questionnaire was tested, modified and formally distributed to collect sample data, and used SPSS22.0 to conduct statistical analysis of the data. The combination of theoretical research and empirical research ensures the scientific validity of this study.

5. Conclusions

The study on the effectiveness of mobile English vocabulary learning from learners' perspectives showed that:

1. The interviewed learners spent nearly half of their total time on mobile vocabulary learning.
2. More than 70% of the respondents considered understanding the meaning of words in different contexts or using vocabulary flexibly as the ultimate goal of mobile learning, while less than 30% of the respondents only considered vocabulary building as the ultimate goal. This indicates that learners have the need to improve their vocabulary skills.
3. Existing software plays a role in the breadth of vocabulary knowledge, but it falls short in promoting deeper learning to improve vocabulary skills.

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