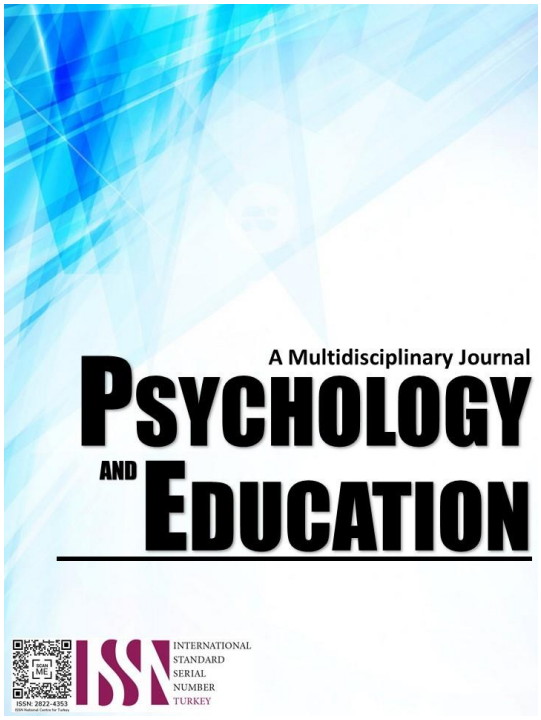
STUDENTS' PERCEPTIONS OF MOBILE ENGLISH LEARNING



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Research Article

Students' Perceptions of Mobile English Learning

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Abstract

As an informal way of learning, mobile learning has attracted many researchers and learners. A quantitative survey method on students' opinions of and language performance in mobile learning was undertaken, particularly among science majors at Taishan University (one comprehensive Chinese university in Shandong province), to investigate the current state of mobile learning among college students in China. Through the investigation, it is found that college students seem to know little about m-learning. They are receptive and supportive of m-learning, and most have participated, even though they are presumably unaware of the critical concepts. Besides, as an informal way of learning, m-learning has become a fashion for college students. They have been motivated to learn English with mobile devices, mainly prefer learning words and practicing listening and spoken language via mobile gadgets. In brief, college students are well prepared for m-learning in terms of their perceptions towards and language performance in m-learning. The present study is far from flawless in a proper academic sense because of various subjective aspects, despite the author's efforts to analyze the status of m-learning through a survey of science majors. As a result, it is essential to note that this study still has certain shortcomings. The study is intended to provide some insight into how teachers might successfully incorporate mobile learning into traditional modes of instruction.

Keywords: *language performance, perception, mobile learning, science majors*

Introduction

Mobile learning has recently been prevalent in many people's lives, including banking, shopping, travel, entertainment, and library research. This development makes it inevitable to combine new technology and learning. The emergence of mobile learning (m-learning), which is now a new generation of e-learning due to the ubiquity of mobile devices like mobile phones, iPads, and tablets in our lives, is one striking example (e-learning). In China, most universities have been applying the traditional approach to the English classroom, where the students gather in a stable room with an assigned teacher, outdated textbooks, and a blackboard. The students, in this instance, cannot choose their favorite materials, the times, or the locations where they want to learn. Therefore, the learning experience and outcome are far from what they may have been. This is particularly true for students in science majors who seem to have different learning styles and features from art majors. For 20 years of teaching, it has been observed that science majors are not as highly motivated as art majors in English. They usually devote less time to English learning than art majors after class and lack autonomous learning ability. Since m-learning is a form of informal and supportive learning that enables students to access learning materials whenever and wherever they choose via mobile devices and the Internet, it appears to be the perfect solution to the issue and a way to satisfy students' demand for learning English.

Since mobile learning was introduced to China in 2000, scholars, linguists, and educators in China have attached much attention to m-learning and conducted many studies on it from different perspectives. Some are concerned with the construction model of teaching English via mobile devices (Chang, 2021 ; Wang, Gao & Wu, 2022). Some focus on applying mobile technology in a particular course, like vocabulary (Li, Ju & Qi, 2021) and extension (Wu & Cao, 2021). Still, others compare the different effects on listening between mobile and network environments (Cai, 2021). However, there are few studies on the status of mobile learning for Chinese English learners, particularly for non-English significant students in universities. Therefore, the study aims to explore the current situation of mobile English learning on campus through the survey at Taishan University. It is intended that the research will throw some light on how teachers may effectively incorporate mobile learning into traditional made to cultivate students' autonomous learning abilities and provide specific references for developing and enhancing mobile learning systems and resources..

Research Questions

The study focuses on using mobile devices in college students' English learning. A questionnaire survey was undertaken among science majors to investigate the current state of mobile device use. The research questions are as follows:

1. What are the students' perceptions of mobile

English learning?
2. What learning performance do students have in mobile learning?

Literature Review

Since 2000, there has been exponential growth in research on mobile learning. This novel approach to learning has been the subject of extensive research and is still being developed. This part is dedicated to reviewing the relevant studies to lay a foundation for the following survey and analysis.

Mobile learning

As a new research field, there is not a uniform consensus on what mobile learning is. Keegan (2002) treats mobile learning as an advancement of online and distance learning. He stresses the background of the emergence of mobile learning but does not reveal the features of mobile learning or its educational materials. Georgiev (2004) defines m-learning as a mix of mobile computing technology and e-learning through which learners can experience learning whenever and wherever they want. This definition considers digitalization's effects on mobile learning. Centering around the learner, Sharples (2005) considers mobile learning as a concept strongly linked to the device and the potential for enabling lifelong learning. So, it is a challenge to achieve a single definition of m-learning. The partial reason is that it is a field in rapid advancement and more advanced mobile devices keep being constantly developed by researchers and sold on the market (Hockly, 2013). However, despite various definitions given on m-learning, there are three factors involved in m-learning: mobile technology, mobile device, and learners. Therefore, in this paper, just as Wang Jianhua et al. (2009) points out, mobile learning is "a process of personal and social knowledge building achieved by learners accessing to learning resources as well as communicate and collaborate with others anytime and anywhere via mobile devices, such as mobile phone, PDA, etc. and wireless communication network."

Research in China and abroad

The research regarding m-learning in the world may date back to 1994 when Carnegie Mellon University launched the Wireless Andrew project in the United States. Since its emergence, m-learning has received much attention from academics and researchers worldwide and has developed into a mature field.

Research Abroad

The research on m-learning starts relatively earlier in such developed countries as America and Europe than in China. Most of the research focuses on the feasibility of m-learning, the effects of m-learning on learning, and the model of integration between m-technology and learning. However, a few studies are concerned about the status of m-learning.

The research on the feasibility of m-learning is concerned with applying different mobile devices to education. Stanley (2006) focused on how learners use podcasts to support English learning and teaching in the classroom. He found that language learners could not only have access to authentic listening materials from podcasts but also students could be involved in creating podcasts for their audience. Kukulska-Hulme and Shield (2008) explored the extent to which mobile devices contribute to collaborative learning and found the possibilities for m-learning to provide items for independent learning.

Regarding the effects of m-learning, the research has found that m-learning has advantages for language learning. To promote mobile-supported peer-assisted learning for school children learning English as a foreign language, Lan et al. (2007) fixed attention on tablets. The findings show that language learners are very interested in using new technologies, and their learning effect has been improved. In reviewing the research on m-learning, Viberg and Grnlund (2012) and Alshalan (2019) pointed out that learners are more flexible in m-learning and more exposed to the target language.

In addition, a few studies are concerned with constructing models for m-learning. A complicated model was proposed by Parsons et al. (2007), which involves generic issues of the mobile environment, learning objectives, contexts of learning, and learning experiences. From a socio-cultural perspective, Kearney et al. (2012) proposed a pedagogical framework of m-learning in teacher education communities. They concluded that the structure of the m-learning environment in terms of space and time dimension is greatly influenced by the characteristics of m-learning: authenticity, collaboration, and personalization.

Research in China

When mobile learning was first offered to China in 2000, researchers did not begin their studies until then. Over the past 20 years, they have achieved outstanding

achievements both in theoretical and practical research of m-learning. Theoretically, Ye Chenglin (2004) provided a concept and examples of mobile learning initiatives in other nations. Yu Shengquan (2007) examined the development of mobile learning and asserted that it has transitioned from the cognitive construction of knowledge to contextual cognition. Fang Haiguang et al. (2011) identified the environment roadmap for m-learning where six elements are involved: network, resources, platform, terminal, activities, and content.

Much practical research on the effects of m-learning has also been conducted. The pros and cons of m-learning are conducted by Ren Haifeng and Zhaojun (2009,) who found that mobile learning includes the benefits of mobility, efficiency, and universality, as well as the drawbacks of pupils being easily distracted and technology restrictions. The necessity of including mobile learning in college English classes is explored by Bao Songbin (2013). Still, much research is concerned with constructing models by integrating mobile learning into a traditional mode (Chang, 2021 ; Wang, Gao & Wu, 2022).

A few studies in different groups were conducted on mobile learning. Focusing on adult learners involved in distance learning, Chen Yiqin (2013) examined their current state of and needs for mobile learning. Yang Liyuan and Li Jiawei (2015) surveyed university students. They found that mobile learning can promote students' participation, basic skills, and fundamental learning interests. Some drawbacks include distraction from the lecture in session and difficulty in notetaking. Wen-Min Hsieh and Chin-Chung Tsai (2017) interviewed teachers in high school. They found that teaching mobile devices greatly influences teaching review shows that researchers, educators, and scholars have achieved some encouraging results on mobile learning in both theories and practices in recent decades. All of these suggest that m-learning influences language learning and teaching. However, its effectiveness is determined by how learners and educators are involved in its implementation strategy (Sharples et al., 2005; Al-Emran et al., 2016). Moreover, mobile learning is a new fashion in different learning contexts. Its effects may co-vary with the differences in learners' attitudes regarding their characteristics, like major, learning performance, country, etc. Consequently, I have been motivated to examine science majors' attitudes toward earning in a Chinese university by following models conducted in other environments.

Methodology

The study mainly adopted the quantitative method by distributing questionnaires to science majors at Taishan university to collect the data needed. The frequency analysis was conducted on all the collected data.

Instrument

The Survey of Current Situation of Mobile English Learning was used to examine students' attitudes and performance of mobile learning to fulfill the study's objectives. Part I consists of four questions on students' demographics and basic information, and Part II consists of 10 questions about mobile learning. In the second part of the questionnaire, questions 5 to 9 are used to students' perceptions of mobile learning, and questions 10 to 14 concern students' mobile learning behavior and habits.

Considering the research environment, the questionnaire was modified from studies by Tindell and Bohlander (2012) and Berry and Westfall (2015). A pilot test was conducted to ensure the questionnaire was valid and reliable. Because the questionnaire is composed chiefly of choice questions, the subjects can choose more than one option simultaneously. They were distributed to 240 students, and all of them were collected.

The population of the study

Regarding the research objective, the study used the purposive convenience sampling approach and drew 240 undergraduate students from science majors to attend the survey. To ensure the representation of students, one-third of them are from artificial intelligence majors, one-third from civil engineering, and one-third in mechanical designing and manufacturing. They all have at least one mobile device, either a one or a tablet. They are from Taishan University (one comprehensive Chinese university in Shandong province), aged 19-21. Indeed, like every Chinese student, they are all required to take English as a compulsory course. Table 1 lists the demographics and prior experience of the individuals.

Table 1. *Demographic and background information of students*

Item	*Frequency*	*Percentage %*
Gender		
Male	186	77.5
Female	54	22.5
Age		
19 years	55	22.9
20 years	96	40
21 years	89	37.1
Major		
Artificial Intelligence	80	33.3
Civil Engineering	80	33.3
Mechanical Designing and Manufacturing	80	33.3
The year in the university		
Sophomore	120	50
Junior	120	50

Procedures

Before the formal survey was conducted, the pilot test was carried out to examine the questionnaire's reliability and validity. Then the questionnaires were distributed to participants and collected from them to have first-hand data from the respondents. In the end, all the collected data were processed by excel to get the frequency for further discussion and analysis. Inter-Agency Task Force protocols were observed to ensure the safety of the participants and the researcher himself from the COVID-19 pandemic. Furthermore, participants were informed that all collected data were kept confidential and utilized for the study.

Results

After the data was collected, they were processed in excel. The following sub-sections are dedicated to showing the results of data analysis and the related discussion. Frequency and percentage were computed to know the number and proportion of selected choices. The term agreement covers "Strongly agree" and "Agree" responses, while disagreement covers "Strongly disagree" and "Disagree responses."

Perceptions of mobile learning

This part is dedicated to exploring the students' perceptions of mobile learning through the survey on students' attitudes toward and how much they know about mobile learning.

Table 2. *Students' knowledge of mobile learning*

Choice	*Frequency*	*Percentage %*
Q5 Have you heard of m-learning?		
Yes	175	72.9
No	65	27.1
Q6. How much do you know about m-learning?		
Completely know	31	12.9
know	73	30.4
Know little	101	42.1
Not know	35	14.6

Questions 5 and 6 of Table 2 show students' knowledge about mobile learning. From Table 2, it can be found that there is deficient impaired mobile learning among science majors. Most subjects, namely 72.9%, have heard of mobile learning, and only 27.1% of subjects have not heard about it. This implies that college students, as a generation of the information age, are familiar with mobile learning. However, it seems that they do not know much about mobile learning. Only 12.9% of subjects ultimately know entirely about learning, but the subjects know nothing about m-learning, accounting for 14.6%, and 42.1% of subjects know little about m-learning. This shows that more than half of the subjects, namely 56.7%, have little knowledge of m-learning.

Questions 7 and 8 of Table 3 shows how students perceive the effects m-learning has on them. As to question 7, whether there are m-learning influences, more than half, namely 63.3% of subjects, believe it influences their study. In comparison, 7.5% of subjects disagree that m-learning influences their study, and neutral 29.2%. This implies that most students believe that as a new mode, mobile learning can exert influence on their study to some extent and can significantly influence their learning styles (75.4%), efficiency (68.3%), interest (54.2%), and autonomous learning ability (49.6%).

Table 3. *Effects of m-learning on students*

Choice	*Frequency*	*Percentage*
Q7. Does mobile learning affect your learning?		
Strongly agree	26	10.8
Agree	126	52.5
Neutral	70	29.2
Disagree	12	5
Strongly disagree	6	2.5
Q8. What does mobile learning affect?		
Learning belief	71	29.6
Learning interest	130	54.2
Learning motivation	36	15
Learning style	181	75.4
Learning efficiency	164	68.3
Autonomous learning	119	49.6
Others	29	1.2

The results of question 9, "I am in favor of m-learning," reveal students' attitudes toward m-learning. It is found that 47.6% of subjects favor m-learning, and almost the same number of subjects, namely, 48.2% of subjects, have a neutral position toward m-learning. This indicates that college students are very reasonable in their attitude toward m-learning. In addition, there is much scope for mobile learning applications because only a few (4.2%) are opposed to mobile learning.

Learning performance in m-learning

Learning performance is a learner's behavioral tendency in the learning process and outcome (Wang, 2016). Following this definition, the present research involves learners' tendency in frequency, moment, length, content, and style when they take m-learning.

Table 4. *Average times for mobile learning a week*

Times	*Frequency*	*Percentage*
0	0	0
1-2	85	35.4
3-4	79	32.9
5-6	45	18.8
Seven and more	31	12.9

Table 4 clearly shows the results of question 10, "how many times do subjects take m-learning per week." The data in the table show that only 12.9% of subjects are involved in m-learning daily, and 18.8% of subjects take m-learning five or six times. At the same time, up to 35.4% of subjects take m-learning only for no more than two times. Besides, 32.9% of subjects take m-learning three or four times. This indicates that college students do not develop a habit of taking m-learning, and it only occurs on occasion.

Table 5. *Moment of m-learning*

Occasion	*Frequency*	*Percentage*
Encounter trouble in class	81	33.8
Want to learn after class	184	76.7
Waiting (e.g., in line)	68	28.3
Bored	53	22.1
Before sleeping	49	20.4
Others	42	17.5

The data of question 11, "When do you often learn English by mobile devices?" in Table 5, illuminate the favorite time students are usually involved in m-learning. As shown in the table, only one-third of subjects are involved in m-learning in class, while up to 76.7% of subjects take m-learning after class. A small number of subjects, accounting for 22.5%, take m-learning while waiting, for example, for dinner in line. Others prefer to take m-learning casually and occasionally, such as when bored (16.3%) and preparing for sleep (17.5%). Autonomous learning after class is primarily casual and purposeless, and it is, in nature, a kind of self-initiating, self-monitoring, and self-responsible informal learning. The investigations show that mobile learning occurs mainly after class as informal learning.

Table 6. *Time spent on m-learning*

Time	*Frequency*	*Percentage %*
0-30 minutes	136	56.7
31-60 minutes	91	37.9
61-90 minutes	8	3.3
90 minutes and more	5	2.1

For question 12, "How long do you learn English on mobile devices every time?" the responses in Table 6 show a clear map. The table shows that most subjects tend to learn English with mobile devices for no more than 30 minutes. Those who are involved in mobile learning for 30 minutes and less account for 56.7%, and the number of those taking mobile learning for more than 30 minutes and less than 60 minutes takes

up 37.9%. Only a small number of subjects can learn English with mobile devices for more than one hour, which accounts for only 3.3%, and let alone those spending more than 90 minutes on mobile learning take up 2.1%. This suggests that using a mobile device to learn English for no more than 60 minutes is appropriate and practical for learners.

The responses to question 13, "What do you mainly learn about English by mobile devices?" in Table 7 show students' favorite contents of m-learning. According to the table, it is found that listening is the most popular content for students, and up to 82.1% of subjects enjoy practicing English listening with mobile devices. Then follows the word learning, and the number for it reaches 71.7%. 62.5% of subjects tend to practice their spoken English via mobile devices. This is probably consistent with the fact that these three aspects of English learning are suitable for mobile learning. Besides, more and more relevant mobile applications make it easier and more convenient for students to download apps and install them onto their mobile devices. However, it does not seem easy for students to access suitable grammar, writing, and reading resources.

Table 7. *Favorite contents of m-learning*

Contents	*Frequency*	*Percentage %*
Words	172	71.7
Grammar	50	25
Listening	197	82.1
Spoken	150	62.5
Reading	62	25.8
Writing	29	12.1
Culture	56	23.3
Others	27	11.3

Table 8. *The favorite learning style of m-learning*

Style	*Frequency*	*%*
Study on your own	179	74.60
Online interaction	36	15.00
Get instruction from the teacher (Wechat/QQ)	13	5.40
Participate in an online learning community	10	5.00
Others	2	0.80

The responses to question 14, "What is your favorite way of English mobile learning?" in Table 8 represent college students' favorite learning styles. From the table, it can be found that nearly two-thirds, that is, 74.6% of subjects, prefer to study on their own. 15% of subjects enjoy "online interaction with their peers." However, 5.4% of subjects claim they prefer teachers' instruction through WeChat or QQ. Still, 5% of subjects tend to "participate in the online learning community and collaborative learning." Mobile learning is characteristic of the strong interaction, but presently, college students are prone to take it as a tool to access learning resources.

Discussion

The results in the above section clearly show a picture of students' perception of m-learning as well as their behavior and performance in m-learning. This section discusses students' perspectives and learning performance to examine the state of college students' m-learning. Regarding the students' perceptions of m-learning, students do not have a clear idea of m-learning, but they still believe that m-learning is beneficial to their English learning and are open to this new way of learning. In the investigation, about 72.9% of students claim that they have heard of m-learning, but only a minority know about it (43.3%). This implies that students lack cognition on m-learning even though some learn English on their smartphones and mobile devices. Moreover, most students believe m-learning affects their studies (63.3%). It dramatically affects students' learning styles, efficiency, interest, and autonomous learning ability; they do not tend to be thoroughly in favor of this way of learning (47.6%). Nearly 48.2% of pupils are neutral in mobile learning. This could be explained by the fact that m-learning is characterized by "a low degree of planning and organizing in terms of the learning context, learning support, learning time, and learning objectives" (Decius et al., 2019) and that its typical mechanisms include trial and error or learning-by-doing, modeling, feedback, and reflection (Kyndt & Baert, 2013). That is, m-learning is, in nature, a kind of informal learning, so it may not be taken seriously by students as they treat formal learning. Another reason may lie in the drawbacks that m-learning has. Wang Wei (2018) conducted a survey among undergraduates in a Chinese university and found that many challenges exist for students in m-learning, such as distraction, insufficient interactions, incomplete function, and lack of immediate feedback, among other drawbacks. However, the fact that only 4.2% of students oppose mobile learning suggests a

good chance that it will be seen as an effective teaching tool.

Moreover, students' perceptions are demonstrated in their learning performance. As defined in this study, it is represented as times of m-learning a week, moments when students take m-learning, the minutes spent on m-learning, students' favorite contents in m-learning, and their style of m-learning. The results in Tables 4, 5, 6, 7, and 8 reveal that students perceive m-learning as a helpful learning tool and use its mobility value well. Although students do not develop a habit of m-learning, more than half of students (51.7%) take m-learning three to six times. This suggests that most students are using mobile devices to learn English at least once every other day. It should be noted that students would prefer to take m-learning after class (76.7%) rather than in class (33.8%). They may take m-learning before sleeping when bored and waiting for a friend or in line for dinner, although most students (56.7%) may spend less than half an hour on this new way of learning each time they take it. Besides, as the data presented in Table 8, students may also choose their way of learning English. Following these results, students can learn English with mobile devices at any time and place and choose how they like to learn English. It seems that students have been at the center of m-learning. These findings are to the research by Viberg and Grnlund (2012) and Alshalan (2019) that mobile devices offer learners more flexibility and mobility in learning. Besides, as Kukulska-Hulme and Shield (2008) claim, learners may have more opportunities to learn independently, thus developing their autonomous learning ability. Moreover, m-learning is an effective way for students to learn vocabulary, speaking, and many other skills. M-learning has been proven to have a significant impact on the learning of language skills (Cai, 2021). The data in Table 7 show that students most enjoy learning words (71.7%), practicing listening (82.1%), and speaking English (62.5%) via mobile devices. One reason may be that there are many applications for words, listening, and speaking. At the same time, this implies that college students recognize the advantages of m-learning in learning words, practicing listening, and speaking. It can be claimed that, in this instance, students were prepared to incorporate their mobile devices into their language learning in the classroom. According to studies, college students are digital natives; therefore, using mobile devices in the classroom presents no challenges (Pegrum, Oakley, & Faulkner, 2013).

Conclusion

This study investigates the state of mobile learning among Chinese undergraduates majoring in science. The goal of this study is to gain some understanding of how students view mobile learning and how they perform linguistically in it. Based on the analysis and discussion of the data from the survey, it is found that college students seem to know little about m-learning. They are receptive and supportive of m-learning, and most have participated, even though they are presumably unaware of the critical concepts. Besides, as an informal way of learning, m-learning has become a fashion for college students. They have been motivated to learn English with mobile devices, mainly prefer learning words and practicing listening and spoken language via mobile gadgets. In brief, college students are well prepared for m-learning in terms of their perceptions towards and language performance in m-learning.

The present study is far from flawless in a proper academic sense because of various subjective aspects, despite the author's efforts to analyze the status of m-learning through a survey of science majors. As a result, it is essential to note that this study still has certain shortcomings. Firstly, the study is only conducted through a questionnaire survey without an interview, making it impossible to get a thorough investigation into the situation of m-learning. Besides, the study was conducted only among students from three science majors, leading to fewer subjects. This drawback might reduce the universality and persuasion of the research.

References

Al-Emran, M., Elsherif, H. M. & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior , 56* , 93-102. https://doi.org/10.1016/j.chb.2015.11.033

Alshalan, K. (2019). Investigating EFL Saudi students' vocabulary improvement in Micro-blogging on Twitter at Imam University. International Journal of Linguistics, *Literature, and Translation, 2,* 108-115. https://doi.org/10.32996/ijllt.2019.2.2.18

Bao, S. (2013). Blending mobile learning with college English teaching. *Lab Exploration and Research, pp. 4,* 144–151.

Berry, M. J. & Westfall, A. (2015). Dial d for distraction: The making and breaking cell phone policies in the college classroom. *College Teaching, 2*, 62-71.

Cai, C. (2021). A comparative study on English engagement in different network environments and their relationships with listening performance. *Journal of PLA University of Foreign Language, pp. 3,* 93–101.

Chang, W. (2021). Smartphone-based mobile learning mode construction of college English. *Journal of Shanxi University of Finance and Economics, S2*, pp. 171–174.

Chen, Y. (2013). A survey of adult learners' mobile learning. *Chinese Journal of Distance Education*, pp. *10*, 47–52. http://doi.org/10.13541/j.cnki.chinade.2013.10.017

Decius, J., Schaper, N., & Seifert, A. (2019). Informal workplace learning: Development and validation of a measure. *Human Resource Development Quarterly* , 4, 495-535. https://doi.org/10.1002/hrdq.21368

Fang, H., Wang, H. & Huang, R. (2011). The roadmap of system environment of mobile learning. *Modern Educational Technology, 1*, 14-20.

Georgive, T. (2004). E-learning-a new stage of E-learning. *International Conference on Computer Systems and Technologies*, pp. 4, 1–5.

Hockly, N. (2013). Mobile learning. *ELT Journal*, pp. *1*, 80–84.

Hsieh, W. M., & Tsai, C. C. (2017). Taiwanese high school teachers' conceptions of mobile learning. *Computer & Education, 115*, 82-95.

Kearney, M., Schucka, S., Burdenb, K. & Aubusson, P. (2012). Viewing mobile learning from a pedagogical perspective. *Research in Learning Technology*, *20*, 1–17.

Keegan, D. (2002). Future learning: From e-learning to m-learning. Germany: Zentrales Institut für Fernstudienforschung.

Kukulska-Hulme, A. & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL, 20(3),* 271-289.

Kyndt, E., & Baert, H. (2013). Antecedents of employees' involvement in work-related learning: A systematic review. *Review of Educational Research, 2* , 273-313. https://doi.org/10.3102/0034654313478021

Lan, Y., Sung, Y. & Chang, K. (2007). A mobile device-supported peer-assisted learning system for collaborative early EFL reading. *Language Learning & Technology, 11,* 130-151.

Li, Z., Ju, F. & Qi, L. (2021). Mobile learning in vocabulary learning for English majors. *English Square*, pp. 3, 115-117

Parsons, D., Ryu, H. & Cranshaw, M. (2007). A design requirements framework for mobile learning environments. *Journal of Computers, 2 (4),* 1–8.

Pegrum, M., Oakley, G., & Faulkner, R. (2013). Schools going mobile: A study of the adoption of mobile handheld technologies in Western Australian independent schools. *Australian Journal of Education*, pp. 5, 67–89.

Ren, H. & Zhao, J. (2009). The features of mobile learning in teaching. *Adult Education*, pp. *12*, 60–61.

Sharples, M. (2005). Learning as conversation: Transforming education in the mobile age. In Proceedings of Conference on *Seeing, understanding, learning in the mobile age* (pp. 147–152). Budapest, Hungary.

Sharples, M., Taylor, J. & Vavoula. G. (2005). Towards a theory of mobile learning. *Proceedings of mLearn, 1(1),* 1-9.

Stanley, G. (2006). Podcasting: Audio on the internet comes of age. *TESL-EJ*, pp. *9*, 1–7.

Tindell, D.R. & Bohlander, R.W. (2012). The use and abuse of cell phones and text messaging in the classroom: A survey of college students. *College Teaching, 1*, 1-9.

Viberg, O., & Grnlund, K. (2012). *Mobile assisted language learning: A Literature review.* Paper presented at the meeting of the 11th World Conference on Mobile and Contextual Learning, Helsinki, Finland.

Wang, Y., Gao, Q. & Wu, Y. (2002). Blended mode of mobile and task-driven learning. *Journal of Liaoning University of Technology (Social Science Edition),1*,100-102.

Wang, W. (2018). Survey and analysis of mobile English learning for application-oriented undergraduates. *Journal of Liaoning Institute of Science and Technology, pp. 3*, 59–61.

Wu, X. & Cao, L. (2021). Teaching practice and exploration of reading courses for English majors assisted by mobile learning. *Journal of Anshan Normal University, 5*, 43-46.

Wang, Z. (2016). *Research on influencing factors of mobile learning on college students' learning performance - based on cognitive load theory*. Thesis. Shanghai: Donghua University.

Wang, J., Li J. & Zhang, L. (2009). *Mobile learning theory and practice*. Beijing: Science Publication Press.

Yang, L. & Li, J. (2015). The survey on college students' mobile learning and strategies. *Software Guide, 7*, 51-53.

Ye, C. (2004). Review of mobile learning. *E-education Research, 3*,12-19.

Yu, S. (2007). From knowledge transmission through cognitive construction to contextual cognition. *China Audio-visual Education, pp. 6*, 7–18.

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