

Study on the Current Situations of English Teaching Model in Secondary School based on Ubiquitous Learning

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Abstract: Based on the transformation of ubiquitous learning (U-learning) and new media, secondary school students are in desperate need of high-quality English learning resources as well as cultivation of autonomous learning. However, currently there is no mature institutional mechanism for ubiquitous learning for English, which has not effectively promoted learners' learning. This paper attempts to survey the current status of U-learning in English teaching by applying a mixed method combining qualitative and quantitative approaches. Meanwhile, it aims to identify shortcomings and propose relevant strategies. It is expected that this study can provide practical insights and suggestions for ubiquitous learning researchers and practitioners as well.

Keywords: Ubiquitous Learning; Secondary School; Situations; English Teaching Model.

1. Introduction

In 1988, Weiser first proposed the concept of “ubiquitous computing.” Since then, both domestically and internationally, researches on ubiquitous learning have been continuously conducted. With the rise of new sci-tech revolution and industrial transformation along with the rapid development of new media, U-learning is gradually coming into people's view, which indicates engagement in learning at any time, any place, and using any device. Currently, learners' thinking and methods are being in transformation. And there is a shared demand among teachers and students to utilize U-learning methods, emphasizing the learner as the point and breaking through temporal and spatial limitations in English education. Nevertheless, according to the practices of scholars both domestically and internationally, U-learning projects have not demonstrated significant effectiveness in actual teachings. Even until today, U-learning has not played a prominent role in English education.

In recent years, China has been committed to enhancing the capabilities of teachers and cultivating top talents. U-learning is playing a crucial role in the cultivation of high school talents. It is dedicated to promoting lifelong learning, emphasizing equitable education, and improving learning efficiency. Despite the insufficient practices and the lack of significant effects, there is still a development trend for related U-learning applications with the advancement of new media and the shift in educational concepts. Therefore, this study aims to investigate the current application and development status of U-learning in English teaching, and to explore and summarize the value of U-learning. It is expected that U-learning can be better utilized by researchers and learners in English language teaching as well as learning.

2. Literature Review

2.1. Related Studies on Ubiquitous Learning

Sakamura & Koshizuka (2005) mentioned that they initiated a ubiquitous computing research and development project in 2003. They leveraged the new information and

communication infrastructure of the 21st century to provide various information services and manage living environment. This is the same true to U-learning (anytime, anywhere, anyone, any-device, any learning) as well.

Currently, in the field of application research in China, there are limitations at various levels such as technological proficiency, uneven urban-rural development, inconsistent educational philosophies, and inadequate research design capacity. Researchers primarily focus on discussing the application models, methods, activity strategies, and improvement aspects of U-learning in theory. They conduct scientific teaching experiments to validate the effects by observing the comprehensive data that combines theory with practice. However, these efforts have not yielded significant results in actual teaching, and the adoption rate remains relatively low. In practice, U-learning has also struggled to provide scientific guidance. Overall, there is a shortage of domestic expertise and scholarly research on the practical application of ubiquitous learning. Whereas, with the advancement of internationalization in education, changing educational perspectives, and the improvement of computer and internet technologies, there are still promising trends in related applications (Liu & Zhang, 2022). Examples of such applications include MOOC, flipped classroom, Xuexitong, and vocabulary learning apps like Baicizhan.

The majority of overseas researches on U-learning applications is based on existing learning theories or strategies. Researchers design relevant environments, tools, and activities by leveraging the advantages of ubiquitous learning (Liu & Zhang, 2022). Harvard University implemented the “Handheld Devices for Ubiquitous Learning (HDUL)” project from 2003 to 2005, and the Massachusetts Institute of Technology conducted the “Reliving the Revolution (RtR)” project (Zhang & Xiong, 2016). These two studies focused on supporting learning with wireless handheld devices, namely, “portable research assistants” and “online learning tour channels” (Zhang & Xiong, 2016).

However, overseas researches on U-learning applications also face challenges including proficiency and uneven development. According to magazine *The Economist*, several

studies have pointed out that India's digital resources not only significantly lag behind but also have extremely unequal distribution. The GGSMA, a telecommunications trade organization, estimated that in 2021, half of Indian adult males owned smartphones, while only one-fourth of Indian females did so. There is also a disparity in the level of digitalization between urban and rural areas in India. The internet penetration rate in cities is 103%, but in rural areas, it is only 38%. This poses significant technological challenges for the implementation of ubiquitous education.

2.2. Related Studies on Secondary School English Teaching Methods

With the development of English teaching concepts, the cultivation of English learners' language communication and communication ability has been highlighted (Yao, 2023). During secondary education, it is more important to cultivate students' subjective initiative in learning. Currently, the teaching approaches for English language learning among secondary school students, as mentioned by Guo (2021), Ping & Wang(2020), have made some innovations in the curriculum, such as international classes, immersive learning, and a combination of online and offline learning. It's a pity that these approaches still rely on some traditional instruction models and fail to fully integrate U-learning into English education for students. Additionally, information technology often has a significant impact on changing teachers' instructional styles, while its influence on transforming students' English learning ways is minimal (Bai, 2016).

Compared to the relatively well-established English teaching system in universities, there are insufficient researches and limited examples for secondary school students. Some teachers still lack the ability to learn new things, and students struggle with self-discipline and motivation, making it difficult for them to effectively utilize U-learning and develop good study habits. The software available for English teaching in universities includes Unipus, English Liulishuo, super star learning and so on. Due to having more spare time and stronger self-discipline, college students can generally engage in autonomous English learning. They can even engage in simulated conversations with English-speaking AI, such as Hi, Echo—a conversational English software, which can effectively improve spoken English. However, for high school students, smartphones are typically used more for entertainment purposes, and they often lack sufficient self-discipline. Although there are ubiquitous learning apps tailored for high school students, such as Palm English and Mofun English, they often struggle to have practical effectiveness. How to enhance students' motivation for English learning? How to improve learning efficiency and actively construct knowledge? Furthermore, how to enhance the English educational value and highlight students is also receiving attention. Similar to Chinese language, English is both a language-oriented subject and a cultural subject. Its unique humanistic quality enriches individuals' spiritual world and enables students to be more proactive and comprehensive in their learning (Zhao, 2019). It enables teachers to have more time for in-depth and multi-perspective tactical demonstrations by preparing U-Learning resources in advance, implementing flipped classrooms, allowing students to preview learning tasks, clarify learning objectives, and grasp essential content through these resources (Sun, 2020).

2.3. Summary of Previous Researches on Ubiquitous Learning and English Education

To summarize, it's obvious that the application research of U-learning in English education for secondary school students lacks sufficient case studies available both domestically and internationally. However, it is evident that there is a gradual increase in the importance placed on English education for secondary school students in China. Meanwhile, researches on U-learning in English education are also gradually being conducted. People in China are continuously engaging in comparative practices to find an English teaching model that is suitable for secondary school students and integrates with new media (U-learning). Related researches on college students have developed relatively mature, while there is a need for more researches and practices regarding the important stage of individual growth for secondary school students. However, research in this area has remained limited.

Therefore, this study will focus on the following questions. Firstly, what are the issues in the English teaching models within U-learning platforms? Secondly, what progress has been made in English computer-assisted instruction? Lastly, what are the developments and innovations in English teaching models with U-learning? By considering the points mentioned above, it is crucial to thoroughly analyze the current application of U-learning in English teaching, identify issues and then propose relevant strategies. This will enable educational researchers and practitioners to have a clearer understanding of the usage and implementation of U-learning platforms, optimize existing English teaching methods and enhance learning efficiency for secondary school students.

3. Research Design

3.1. Research Methodology

To have a comprehensive and in-depth understanding of the current status of the application of ubiquitous learning platforms in English language teaching and learning, this study is based on a mixed method combining qualitative and quantitative methods.

This study includes literature analysis, interviews, questionnaires, and data analysis. Qualitative methods were used to obtain various information about teaching practices through literature analysis and interviews. On the other hand, quantitative methods were used to provide a more objective overview of the actual situation. The current status of the application of ubiquitous learning platforms in English language teaching was analyzed through questionnaire surveys and data collection.

3.2. Research Questions

To achieve the research objectives, the following research questions were formulated.

- 1) What are the current problems of teaching English in ubiquitous learning platforms?
- 2) What developments and innovations can be considered effective help for teaching and learning in the development of digital English language teaching and learning in the context of ubiquitous learning? How can ubiquitous learning platforms play a positive role in English language education?
- 3) What progress has been made in the computerized teaching of English?

3.3. Participants

Teachers and students from two secondary schools in Sichuan Province participated in this study, and based on their personal experiences they were invited to share their feelings about English education, express their understanding of digital English teaching and learning, and offer their opinions and insights into the current English teaching model.

3.4. Data Collection and Analysis

Through literature analysis, in-depth interviews, and after-data analysis and collection have been conducted. Firstly, the literature analysis aims at whether digital teaching and learning in ubiquitous learning conditions are supported by corresponding systematic research. Second, questionnaires were sent to teachers and students. Each questionnaire contained nine items asking whether the participants agreed that the English language resources they gave/received met their learning needs in a targeted and accurate way, with five options organized in the following way: A = always; B = usually; C = sometimes; D = seldom; E = never. Third, two open-ended interviews with teachers and students were also conducted in the target schools. The interviews were

completed within 30 minutes by telephone or face-to-face communication. Besides, the main focus of the interviews was on the participants' personal feelings about the current state of English informatics teaching and the status of its implementation in class, during class, and after class.

4. Results and Discussions

4.1. Current Issues of the Ubiquitous Learning Platform for English Education in Secondary Schools

4.1.1. Insufficient Digitalization Construction of English Ubiquitous Learning Platform in Secondary Schools

In the era of high-speed interconnection, information overload is hard to avoid. How to cope with the bombardment of information is a dilemma faced by everyone, and in this field of self-media teaching, such problems also exist. How teachers organize teaching content logically and in-depth, and how students learn knowledge selectively and purposefully have a profound impact on the development of media education.

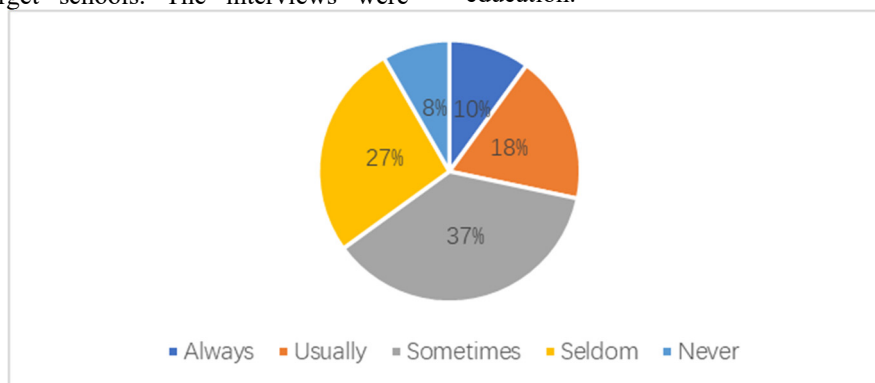


Figure 1. The Frequency of Accurately Finding Learning Resources Needed

According to the results in Figure 1, only 37% of the students agreed that the English education resources they were given to receive could be targeted and accurately meet their learning needs. This is due to the large number of English learning resources on the Internet, which are either richly illustrated or a mixture of good and bad quality, making it difficult for young students to recognize them. Existing English teaching platforms are numerous, but some problems are still existing such as the blind construction of platforms and the explosion of homogenized information, which can't be targeted according to the learning characteristics of students, and it's difficult to adapt to the characteristics of the learning stages of different students, and students can't find suitable learning materials for themselves in the massive teaching platforms.

Therefore, at present, it is necessary to build and develop an English digital teaching platform with many learning resources, high search efficiency, and accurate information materials, to integrate high-quality teaching resources, and to effectively discriminate, scientifically filter and carefully screen the vast amount of English learning information. In this way, a high-quality English digital teaching platform can better play the essence of ubiquitous learning, i.e., the use of self-media means to realize distance education, sharing of quality education, precise positioning, development of special projects, and the implementation of educational equity to provide the possibility.

4.1.2. Insufficient Application Practice of Ubiquitous Learning in Teachers' Pedagogical Coping

At present, many secondary school teachers are still in the traditional teaching mode and are weak in digital teaching ability, new resource development and integration ability, new information technology operation level, new knowledge acquisition ability, etc., which makes it difficult to effectively integrate ubiquitous learning resources and get rid of the thinking inertia of teacher-centered and class-lecture-centered. Through sorting out the above problems, as far as secondary school English teachers are concerned, the cultivation of the application ability of ubiquitous learning platforms mainly faces two kinds of problems, namely the cultivation of the useability of ubiquitous learning platforms and the cultivation of the design ability of teaching resources of ubiquitous learning platforms. These two kinds of problems lead to the low pedagogical coping skills of secondary school teachers in digital teaching, which makes it more difficult to actively and flexibly increase the application of ubiquitous learning platforms in teaching mode. This prevents teachers from changing their roles, reshaping the teacher-student relationship, and guiding students to future learning and development.

4.1.3. Insufficient Systematic Research on English Digital Teaching with Ubiquitous Learning

Digital teaching under the condition of ubiquitous learning

is the deep integration of information technology and language teaching represented by the Internet. However, under the new and rapidly developing technological environment, there is a lack of systematic and in-depth research on various aspects of English teaching and related teaching elements, such as the integration of digital learning with "MOOC" and "micro-course", whose design and implementation of English digital teaching should consider a learner-friendly digital learning environment from an interdisciplinary perspective, and the impact of digital learning on "human beings". For example, the integration of digital learning with "MOOC" and "micro-teaching" should take the human factor of digital learning into consideration, including the motivation, attitudes, digital literacy, and digital learning strategies of both teachers and learners in the new technological environment (Jiang, 2020).

4.2. Measures to Improve Current Issues of the Ubiquitous Learning Platform for English Education in Secondary Schools

In the context of the network era, teaching activities are more dependent on the Internet, so networked teaching has undoubtedly become the mainstream, especially for the secondary school English course, a compulsory basic course with the application of English language knowledge and skills, cross-cultural communication and learning strategies as its main content, and adapting to the needs of socio-economic development and global cultural exchanges as the teaching goal. In the face of the teaching problems existing in the existing ubiquitous learning platform, the use of digital teaching opportunities, innovation, and development of digital teaching development of the English subject, will improve the overall teaching effect of the English subject.

4.2.1. To Improve and Optimize the English Digital Teaching Platform and Teaching Resources

In the era of digital intelligence, the ways and effects of English teaching are undergoing unprecedented changes. Secondary school English teaching is responsible for cultivating students' international vocational communication skills, and there is an urgent need to introduce informalized teaching means and resources to enrich the content of English learning, mobilize students' interest in English learning, and enhance the effectiveness of students' English learning. Informative teaching technology centered on massive resources and intelligent analysis will completely change the mode of English teaching and learning, and the application of an intelligent teaching platform will be of great significance in enriching learning resources, improving the interactivity of teaching, and enhancing scientific and effective learning.

4.2.2. To Integrate and Innovate English Digital Teaching Models

The construction of ubiquitous learning provides theoretical support and platform construction for the construction of secondary English education. The ubiquitous learning paradigm meets the balanced needs of "teaching and learning" in the mobile Internet era. For secondary school English teaching, the common effect and mutual influence among the elements of ubiquitous learning are extremely important. To comprehensively improve the level of formalized education and teaching in schools, schools need to put forward the concept of formalized teaching promptly, advocate that the advantages of information technology be brought into play in the whole process of teaching, use rich

media resources to stimulate students' interest, adopt informalized means to break through the important as well as difficult points of teaching and implement the process of evaluation as well as multiple evaluations with the help of an informative platform. In the future, information technology means should be combined to promote the pilot work of online and offline blended teaching gradually, under the premise of ensuring the teaching progress and teaching quality, meanwhile various methods should be adopted, so as to promote and explore the reform of information technology teaching methods, and let the classroom revolution blossom in the school (Hou, 2021).

For students, the intelligent learning model created by ubiquitous education can stimulate learners' autonomy and subjectivity to the greatest extent. The sustainability, directness, interactivity, initiative, and accessibility characteristics of ubiquitous education provide learners with the best quality learning resources in the country and even in the world. It revolutionizes the previous teaching mode, changes the blind and undifferentiated supply of teaching resources, and emphasizes the differentiated development of individual learners. It gives learners the right to know their knowledge level, and they can choose their own learning time, teaching design, and learning progress according to their situation. In addition, English ubiquitous learning pays more attention to the cultivation of students' language information processing and humanistic sentiment construction and is oriented to students' spiritual needs, not a patchwork of knowledge and literacy, but a fusion. It pays full attention to learners' personal interests and growth paths and finally accomplishes the realization of individual values.

4.2.3. To Enhance Teachers' Capacity in Teaching English Digitally in Ubiquitous Learning Environments

The ubiquitous learning platform eliminates time and space barriers, realizes zero-distance interaction between teachers and students, and better meets the needs of students' personalized learning. At the same time the transformation of students' learning mode, also further promotes the change of teachers' teaching mode. Thus teachers can carry out different teaching designs for different learners so that learners can choose to learn or get learning help through the network according to their needs, and satisfy the personalized needs of different learners, which facilitates continuous improvement of the effectiveness of teaching and enhance the confidence and enthusiasm of the learners, and then improve the efficiency of teaching and learning.

4.3. Development and Innovation of English Digital Teaching and Learning in the Context of Ubiquitous Learning

4.3.1. Innovation of English Digital Teaching Models

In the context of ubiquitous learning, the English digital teaching model creatively put forward five kinds of innovation models, namely based on the cyberspace flipped classroom model, personalized learning model, maker education model, home school cooperative model, and professional development model (Yang, 2016).

Taking the flipped classroom as an example, it makes the traditional teaching mode of "listening to the teacher's explanation in class and doing homework at home after class" "flip" into "watching the teacher's explanation video at home before class and doing homework under the teacher's

guidance in class." This model makes use of the "resource push" and "online communication" functions of the ubiquitous learning platforms so that learners can obtain relevant course resources before formal learning and get answers to simple questions through communication on the platform. At the same time, it enables students to strengthen the secondary internalization of knowledge in the formal classroom. In addition, compared with the traditional model, a flipped classroom enables students to bring questions to class, which is convenient for teachers to accurately answer students' doubts and improve teaching efficiency. Due to the integration of the concept of ubiquitous learning, flipped classrooms realize the free control of students in the learning process before and after class, and students can arbitrarily control their own learning time, place, and environment.

4.3.2. Development of Modern Distance Education

Modern distance education is a grand and far-reaching project, which includes a wide range of resources and a fast update speed. Only relying on institutions to construct learning content is no longer in line with the requirements of the times. At present, ubiquitous learning adopts dynamic and open resource construction methods. In addition to remote management organizations, every learner on the platform is both a resource acquirer and a resource provider and builder. In addition, the ubiquitous learning environment also focuses on the provision of learner support services, supporting online learning, discussion, homework detection, evaluation, and other functions. It can also track the learning trajectory of learners and record information, greatly enrich the content of distance education resource library, provide more effective and practical information for other distance learners, and meet the learning needs of all social strata in many ways (Li, 2014).

5. Conclusion

The current English informatization teaching promoted by the ubiquitous teaching platform can realize a high degree of sharing public English teaching resources through the teaching platform and provide information and data support for teaching, learning, and research. Eventually, it will create a smart platform for teaching, learning, testing, evaluating, and practicing based on mobile terminals, gradually realize the transformation of informatization in the whole process of English teaching and learning, and facilitate students to carry out personalized and independent learning in the three phases of pre-course, in-course, and post-course. English digital teaching in the context of ubiquitous learning is in a constant state of development, which needs not only to focus on improving and optimizing the English digital teaching platform and teaching resources but also to continuously integrate and innovate the English digital teaching mode. And at the same time, the digital teaching ability of teachers should also be highlighted, so as to improve the overall effect of English digital teaching.

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