Exploration on the Innovative Path of Information-Based Mobile Learning in English Teaching in Colleges and Universities, China from the Perspective of Information Ecology

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Abstract. With the development of Internet information technology, information-based mobile learning has been widely applied in various fields of education and teaching, providing a broader development space for English teaching in colleges and universities. College English is a compulsory course for all majors in colleges and universities. College students must have good English listening, speaking, reading and writing skills in order to have a broader employment prospect in the future. Therefore, college English teaching occupies a decisive position in the whole college teaching. Teachers must keep pace with the times and make use of the current advanced information technology and systematic scientific teaching methods. In addition, with the rapid development of science and technology, there are new challenges for English teaching. Mobile devices have gradually occupied the dominant position in people's life. In daily life, people have to spend a lot of time on mobile devices for learning and entertainment, which makes mobile learning one of the learning methods of college students. However, there are many problems in the current English teaching in China, such as the backward teaching concept, low efficiency of the use of information-based teaching means, and imperfection of the whole teaching evaluation system, which hinder the innovative development of English teaching under the information-based background. At present, there are few studies on English teaching from the perspective of systematics. Based on this, this study explores the current situation of English teaching, the existing problems and innovative paths of mobile learning in English teaching from the perspective of information ecology, such as: clarifying students' learning tasks, strengthening the management of mobile learning resources, improving the informatization teaching level of English, and ensuring the smooth development of information-based mobile learning, etc., so as to promote the development of English teaching in colleges and universities.

Keywords: Ecological vision · English teaching · Learning innovation

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1 Introduction

With the progress of society, human beings have entered the information age. The Internet and mobile devices have become an inseparable part of people's daily life and have had a great impact on people's daily learning. Informatization makes learning resources constantly updated. People have to accept all kinds of information from mobile devices every day, which also shows that the future information has gradually been mobile. Against this background, "mobile learning" mode conforms to the development trend of the information age and becomes the future direction of English teaching in colleges and universities. Secondly, in the information age, data resources are updated with each passing day, which has accelerated the pace of learning resources updating. At the same time, with the rapid development of knowledge, lifelong learning has become an essential skill for contemporary college students. The concept of "mobile learning" was first put forward by western countries and introduced into China in recent ten years. Mobile learning was initially built on the basis of digitalization, so that learning can be achieved anytime and anywhere. Besides, the anxiety of students caused by waiting will be relieved. Learning English is not achieved overnight. And English belongs to an applied discipline. Mobile devices are applied in English teaching. After teachers exercise students' basic English skills in class, students can strengthen their actual communication skills with people through mobile devices. In addition, mobile devices have diversified functions, which can also meet the needs of students to improve their English skills alone. Furthermore, the information ecology focuses on the integrality and systematicness. On the basis of information-based English mobile teaching, it is feasible to explore the relationship among people and learning resources and subject development in the information age. Mobile learning devices not only have the advantages of comprehensive information presentation of learning content anytime and anywhere, but also have the disadvantages of mixed learning information and inflexible use of mobile devices in college English teaching. Therefore, it is imperative to seek the commonness and innovative development path of information-based mobile learning from the perspective of information ecology, so as to promote the integration of university information-based mobile learning mode and social factors.

2 Current Situation of English Teaching in Colleges and Universities

2.1 Low Utilization of Informatization

English learning in colleges and universities first aims to improve students' English literacy and their English listening, speaking, reading and writing skills. However, the information literacy of English teachers in colleges and universities is low, and they still use the traditional teaching mode in class. Although many information-based teaching methods have been applied, teachers have not integrated it with the classroom teaching content organically, or they just ask students to practice in class or after class without checking the practice effect. Therefore, colleges and universities still adopt the traditional teaching mode in English teaching. Moreover, with the popularity of mobile devices, the use of mobile devices should become a learning habit of students. However, due to the low information literacy of teachers in colleges and universities, students only study passively or spend most of their time on mobile devices for entertainment [1].

2.2   Outdated Teaching Concept

An important problem in the English teaching of non-English majors in colleges and universities is that there are few English class hours. Both traditional English teachers and school leaders believe that the key to learn English well is to lay a good foundation. However, English is an applied subject, and the use of English to exercise the ability to communicate with people should also be the focus of English teaching, which is often ignored by most teachers. Secondly, according to the traditional teaching concept, it is not suggested to combine classroom teaching with information-based mobile devices, and it is believed that mobile learning is not suitable for the long-term development of students, which greatly hinders the development of information-based mobile learning in English teaching of colleges and universities. Moreover, most English teachers' teaching methods are not novel. In addition, the amount of class hours is less, and students' attention is also low, resulting in the inability to complete teaching tasks and the failure to effectively improve students' English ability. Therefore, in the innovation of information-based mobile learning, the first thing is to attract students' attention and ensure the smooth completion of teaching tasks.

2.3   Improvement of Student and Teacher Evaluation System

English teaching evaluation in many colleges and universities is only for teachers, without considering the students' learning effect. Secondly, CET-4 and CET-6 are traditionally regarded as the assessment standard for college entrance examination or employment, which leads to teachers' wrong guidance and makes English learning gradually utilitarian. Students' autonomy in English learning is basically driven by examinations. Many students have passed the exam, but their practical application ability of English is very poor, and the English curriculum is gradually homogenized across the country. Therefore, the information-based teaching of English courses in colleges and universities should also gradually improve the teaching evaluation system, so that English teaching can be gradually enriched with the development of information technology, and information-based mobile learning can be combined with English teaching organically.

3   The Relationship Between Information Ecology and Mobile Learning

3.1   Both Have the Characteristics of Openness

The information ecosystem itself has a certain degree of dynamic openness. It is suggested to consider problems from the perspective of human social development and link related factors together. Because the information itself has the characteristics of openness and circulation, it forms a new ecological cycle by dynamically linking different information. Secondly, information-based mobile learning achieves the sharing of network learning resources with the use of mobile devices. Mobile learning devices must be based on the Internet. Due to the openness of the Internet, students' English learning resources can be continuously updated. At the same time, with the development of the times, colleges and universities have gradually diversified the training of talents to meet

the needs of students' personality development and diversified teaching. Therefore, the theories of information ecosystem and information-based mobile learning are similar, and both need to have a virtuous circle for their development with the help of the dynamic update of information resources [2]. Moreover, information ecosystem and information-based mobile learning are both dynamic and open. Using them in English teaching of colleges and universities can better promote the development of English teaching and meet the personalized needs of students' English learning.

3.2   Both Have Certain Innovation

As mentioned above, the information ecosystem focuses on issues from the perspective of social development, thus giving birth to new information resources. Therefore, the information ecosystem seeks development through continuous adaptation to the environment, and has a certain degree of innovation. Based on the Internet technology, the information-based mobile learning is an innovative learning method under the development of the scientific and technological era. With the development and change of information technology, mobile devices are constantly updated. At the same time, the learning contents are also constantly updated. The original simple video and presentation has been transformed into cloud video, which brings learners a constantly updated learning experience. Therefore, information ecosystem and mobile learning have the commonality of innovation. In the information age, the continuous updating and change of information has promoted the development of information ecosystem and mobile learning. Although English teaching of colleges and universities has been combined with Internet technology, its teaching ideas are old-fashioned. Their innovation provides an inexhaustible driving force for English teaching innovation in colleges and universities. In the information age, English teaching must be innovated in real time in order to keep pace with the times [3].

4   Problems Existing in Information-Based Mobile Learning in English Teaching in Colleges and Universities

4.1   The Source of Mobile Learning Content is Complex, and the Good and Bad are Intermingled

In recent years, with the popularization of information technology, colleges and universities have gradually adopted information-based mobile teaching methods. However, due to the large variety of learning resources in information-based mobile learning, students' attention is distracted by non-learning content. Secondly, some learning resources in information-based English learning may only play a guiding role, which is not targeted to improve students' professional ability. As a result, teachers need to integrate a large number of information resources when guiding students to use information-based mobile learning. In addition, students are faced with multiple mobile applications for learning. Teaching gradually meets the breadth but lacks the depth, and students are also faced with numerous English learning resources. In the Internet information age, online information resources are mixed, college students' self-control ability is poor, and they

are easily induced by some bad information on the network, which violates the original intention of information-based mobile learning [4]. Finally, if teachers want to adopt information-based mobile learning methods in the classroom, they should make full use of a variety of information resources, resulting in miscellaneous and poorly targeted learning contents in the classroom.

4.2 Teaching is not Closely Connected with Mobile Equipment

Against the background of the information age, the information literacy of university teachers as a whole is low, and they fail to keep up with the pace of information updating. In English classroom teaching of colleges and universities, teachers must integrate a large number of resources before class if they want to closely integrate with information-based mobile learning. However, some teachers with low information literacy have poor ability to integrate resources and cannot effectively use teaching resources related to information. Teachers are in a mess and students cannot receive the effective information transmitted by teachers. In the long run, students' interest in English learning has gradually weakened. Moreover, students need a period of time to buffer the use of information-based mobile learning. At this time, experienced teachers are required to guide them in time. However, some English teachers in colleges and universities have a low level of information technology, which makes it impossible for students to organically combine classroom content with information-based mobile learning methods. Therefore, the low informatization level of teachers in the information age also reflects the disadvantages of insufficient motivation and little development potential in English teaching of colleges and universities. In the future, teachers should gradually strengthen the improvement of teachers' information literacy.

4.3 Students Lack Correct Learning Attitude Towards Information-Based Mobile Learning

The key to English informatization mobile learning in colleges and universities is to mobilize students' autonomy in English learning, so that they can learn English anytime and anywhere. However, being subject to the traditional learning concept, students are still faced with a variety of learning methods, such as listening to teachers' guidance, lack of self-learning enthusiasm, and lack of correct learning attitude towards information-based mobile learning. At the same time, the roles of teachers and students in information-based mobile learning method have also changed compared with that of the traditional ones. Teachers are more likely to supervise the process of students' information-based mobile learning and feed back the results. The key highlight of this model is students' learning dominance [5]. Secondly, colleges and universities don't offer relevant courses to actively guide students. With the popularization of information-based mobile learning, it not only aims to enrich learning means in form, but also to understand the connotation of information-based mobile learning and have a correct attitude towards English learning. Therefore, in the promotion of information-based mobile learning in colleges and universities, colleges and universities have the responsibility to actively and correctly guide college teachers and students.

4.4 It Is Suggested to Establish a Perfect Information-Based Mobile Learning Mechanism

At present, with the development of the information age, many English teachers in colleges and universities have gradually realized the importance of informatization in English teaching and gradually promoted the informatization-based mobile learning method. However, the leaders of colleges and universities do not pay enough attention to it. Only relying on teachers' own efforts to make the promotion, the information-based mobile English learning interest is not strong enough, and learning only stays in the form of mechanical promotion. The promotion of information-based mobile learning method aims to transform classroom teaching methods. Besides, relevant technical departments of the school should provide supports to improve teaching equipment. Therefore, another difficulty faced by informatization-based mobile English learning is that the school's security mechanism is not perfect, which restricts the popularization of informatization in English teaching [6]. In the future construction, colleges and universities should establish professional institutions to ensure the operation of information-based mobile learning mechanism, support the long-term development of English Teaching in action, and promote the cultivation of diversified and comprehensive talents.

5 Innovative Implementation Path of Information-Based Mobile Learning in English Teaching in Colleges and Universities from the Perspective of Information Ecology

5.1 Clarifying Students' English Learning Tasks

The key of information ecosystem and information-based mobile learning lies in the dominance of people. Therefore, in the process of information-based mobile learning, students should give full play to their dominant position. English learning tasks should be carried out by students. In the face of a large number of learning resources, students' English learning tasks should be clear. Secondly, in order to change the idea that students must listen to teachers in the past, it is suggested to clarify the position of students in the system in the combination of information ecology and information-based mobile learning, urge students to recognize the main position of mobile learning, recognize the initiative of English learning from the perspective of subjective consciousness, and actively adapt to the information-based English learning. Moreover, the dynamic balance between information-based mobile learning and information ecology is reflected in the fact that the system can be carried out for a long time with new information input. Therefore, students face a large number of learning resources under information-based mobile learning. They should learn to identify learning resources and bad information, and then student will understand the correct learning task [7]. Colleges and universities should also carry out relevant courses, so that both teachers and students can correctly understand the connotation of information-based mobile learning. The first is to let teachers clarify their teaching tasks, and students can understand the connotation of information-based mobile learning, thus contributing to the comprehensive popularization of information-based mobile learning.

5.2 Strengthening the Management of Mobile Learning Resources

Before class, the information-based mobile learning resources, as the carrier of flowing "information" in the information ecosystem, need to be systematically developed, utilized and integrated. Therefore, colleges and universities should carry out professional training for teachers and learn to effectively integrate and utilize the learning resources they face [8]. Secondly, in addition to the promotion by teachers, colleges and universities should also gradually improve the relevant supporting facilities to create a favorable learning environment for information-based mobile learning of English. Based on the establishment and improvement of information equipment and the training of professional teachers, colleges and universities should introduce teaching resources suitable for the English level of their students in combination with the actual situation of their English teaching, so as to improve their English learning ability. Moreover, colleges and universities should establish relevant departments for information-based mobile learning, timely adjust the integration of resources, systematize existing teaching resources, break the disadvantages of fragmentation of information resources, gradually establish rational information management, optimize the information-based mobile learning environment, and promote the information-based mobile learning of English to form a virtuous circle [9]. Finally, the management of information-based mobile learning resources should also carry out relevant work training for students. The main body of information-based mobile learning is students, and teachers play an active guiding role. Therefore, colleges and universities should guide students to carry out rational management of information-based mobile learning resources.

5.3 Improving the Informatization Teaching Level of English

English teachers in colleges and universities are the key to the formation of a virtuous circle of English information-based mobile learning, so colleges and universities should carry out regular training for teachers. With the gradual updating of the information age, it is required to improve teachers' information-based teaching ability. First, it is suggested to clarify the position and responsibility of teachers in information-based guided learning. In the process of mobile learning, teachers should not only actively guide students in information-based mobile learning, but also timely supervise and guide students' learning. In terms of mobile devices, teachers should give students timely evaluation, so as to promote the improvement of students' English ability. Moreover, with the development of the information age, teachers' position in the information-based mobile learning and information ecosystem may change slightly. Teachers should keep up with the pace of the times, gradually improve their own information-based teaching level, enrich their own knowledge reserves, continuously give students pertinent evaluation in the development of the information age, and provide an inexhaustible driving force for the development of English information-based mobile learning in colleges and universities [10].

5.4 Ensuring the Smooth Development of Information-Based Mobile Learning

The key to the virtuous cycle between information-based mobile learning and information ecosystem lies in the correct guarantee mechanism, so does English teaching in colleges and universities. It is necessary to mobilize multi-party information-based mobile

learning resources to coordinate the development of English teaching. First of all, the relevant responsible departments established in information-based mobile learning should clarify their responsibilities and ensure the responsibilities of each department in charge of information. Secondly, the stability and security of the learning network environment should be ensured in the information-based mobile learning. Colleges and universities must issue relevant policies to implement the security supervision of the network environment, and urge relevant departments to ensure the supervision and maintenance of the network environment of information-based mobile learning. Moreover, information-based learning resources have the characteristics of fragmentation [11]. In addition to making resources systematic, colleges and universities should also avoid redundancy and repetition of network information resources in order to ensure the smooth development of English information-based mobile learning.

6   Conclusion

The development of the information age is the general trend, which has also had an important impact on English teaching in colleges and universities. English teaching in colleges and universities must keep up with the trend of the times and keep the dynamic update of English teaching resources at all times. To sum up, this study first analyzes the current situation of English teaching in colleges and universities, makes clear the relationship between English informatization mobile learning in colleges and information ecosystem, and shows that both of them have the characteristics of innovation and openness, which can help the smooth development of English informatization mobile learning in colleges and universities. In addition, it explores the existing problems in English teaching in colleges and universities and puts forward targeted and innovative solutions in order to promote the formation of a virtuous circle of English mobile learning in colleges and universities in China. Firstly, it is suggested that students' learning tasks should be clarified at the very beginning. Secondly, the management of information-based mobile learning resources should be strengthened. Thirdly, the information-based teaching level of English teachers should be improved. Fourthly, colleges and universities should also avoid redundancy and repetition of network information resources in order to ensure the smooth development of English information-based mobile learning.

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