



Mobile-Based VR Technology and Its Application in English Learning

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Abstract

In recent years, with the development and progress of the times, mobile technology has gradually developed, and the development momentum of mobile terminals including smart phones is also very rapid. And the application of mobile technology to education in mobile learning has become an inevitable trend in education. English subjects have high requirements for immersion language learning environments in all aspects, which makes them suitable for such mobile learning. On the basis of mobile English learning with mobile technology, we will create a free, practical and situational learning environment for vocational students that is not limited by time and space.

Key words: *Mobile technology; mobile learning; vocational English; learning mode*

1 INTRODUCTION

According to the 36th Statistical Report on Internet Development in China, as of June 2015, the number of Internet users in China was 668 million, and the number of mobile Internet users in China was 549 million, an increase of 36.79 million compared with the end of 2014. The proportion increased from 85.8% at the end of 2014 to 88.9%. my country's netizens are mainly in the 10-39 age group, accounting for 78.4%, of which the 20-29 age group accounts for the largest proportion. In terms of the occupational structure of netizens, students account for the largest proportion, reaching 24.6% [1]. Gradually, with the rapid development of smart mobile terminal equipment such as mobile phones and tablet computers and mobile communication technology, the changes of mobile technology to the Chinese people are also imperceptible. Especially in the life, work and study of the younger generation [5]. Under the 4G mobile communication technology, mobile terminals can create a simple and efficient interactive experience for people in the creation and dissemination of pictures, audio, video, etc. And with wifi technology covering campuses, low-cost or even free campus network services provided by the three major operators, and the establishment of free high-speed local area networks in schools, students' life and learning are inseparable from mobile phones. Therefore, fully combining intelligent mobile technology and learning to create a higher learning method in colleges and universities is what everyone needs to pay

attention to [3]. In recent years, mobile technology and devices have played a very important role in information acquisition, business transactions, entertainment and media. At the same time, mobile learning is also a very important type of learning mode. Because the mobile learning of mobile technology has the characteristics of no object, no time, no place, and no style. Therefore, mobile learning has become a new research hotspot in the domestic educational technology academia. In addition to promoting students' English practical application ability, mobile learning further highlights the cultivation of students' problem-solving and self-learning ability, and plays a pivotal role in the improvement of students' comprehensive quality and practical skills. Therefore, the research of this paper plays an important reference role in various aspects. The research of this paper plays an important practical significance in the design of the teaching mode of mobile learning, and also plays a reference role for the further improvement of the practical application cases of the mobile learning theory and the construction of the later mobile learning resources [13].

2 MOBILE OPERATING SYSTEM

Smartphones are operated with the help of the mobile phone operating system. Even if the mobile phone user does not need to fully understand the operating system, it is very important for the operation of the smart phone [2]. The operating system manages hardware resources, software resources can automatically allocate data

resources, so as to call and control program operation, and can provide a platform and interface for application software, so that mobile phones can help users as much as possible. Up to now, the operating systems of smart phones are generally Android operating system released by Google, ios developed by Apple, windows phone released by Microsoft, windows mobile, and BlackBerry OS, a special operating system developed by Research In Motion for its BlackBerry smartphone, etc. Main [6]. Whether at home or abroad, the Android system occupies an important position in the international market with its advantages of being free, easy to operate, open and compatible. According to the mobile operating system market share statistics released by Strategy Analytics in November 2014, in the third quarter of 2014, Google's Android market share was 83.6%, exceeding the global market share [14]. Because of the free and stretched platform environment of the Android platform, it has attracted many third-party developers to brew the birth of their own software. In the first quarter of 2014, OperaMediaworks (the world's largest mobile advertising network) data proved that the Android platform had accounted for 42.8% of all mobile advertising traffic sources in the first quarter of 2014, surpassing Apple's iOS. It can be seen that the current Android operating system is the most important and practical operating system in the development of the mobile Internet, and it is also the most important mobile operating system in this research [4].

$$\begin{aligned} \Delta_{1p} &= \frac{1}{EJ} \int_0^{\pi} M_h R d\varphi = \frac{R^4}{EJ} \int_0^{\pi} (\cos \varphi + \frac{1}{2} \varphi \sin \varphi - 1) d\varphi \\ &= -\frac{\pi R^4}{2EJ} \\ \Delta_{2p} &= -\frac{R^2}{EJ} \int_0^{\pi} M_h \cos \varphi d\varphi \\ &= -\frac{R^5}{EJ} \int_0^{\pi} (\cos \varphi + \frac{1}{2} \varphi \sin \varphi - 1) \cos \varphi d\varphi \\ &= -\frac{R^5}{EJ} \int_0^{\pi} (\cos^2 \varphi + \frac{1}{2} \varphi \sin \varphi \cos \varphi - \cos \varphi) d\varphi \\ &= -\frac{3\pi R^5}{8EJ} \end{aligned}$$

Figure 1: calculation formula

3 SOFTWARE TECHNOLOGY IN MOBILE LEARNING

It refers to WAPWAP (Wireless Application Protocol), which is the wireless application communication technology, which can run on a variety of wireless networks [12]. WAP makes the global Internet have a common standard. With the help of WAP, the mobile terminal can provide users with abundant online resources without being disturbed by time and

place. The Internet and mobile communication are fully integrated through WAP, and WAP's agents and filters convert network resources into Wireless Markup Language (WML), which can be recognized by almost all mobile terminals. The basic flow of WAP operation is shown in Figure 2:

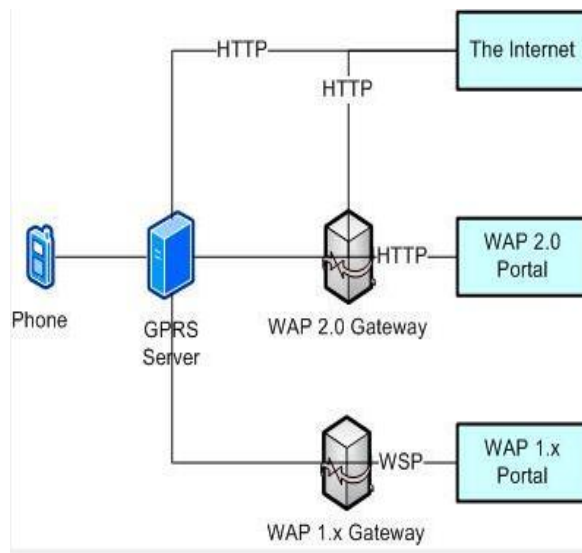


Figure 2: The basic flow of WAP operation

4 FEASIBILITY ANALYSIS OF THE APPLICATION OF MOBILE LEARNING BASED ON SMARTPHONE TO ENGLISH TEACHING

Although the concept of mobile learning has been developed for a long time, the scale is not large due to the limitation of technical conditions [11]. The software and hardware technologies of mobile applications are currently under continuous development, and the technical means of mobile Internet are also constantly improving, and the feasibility is further enhanced. The software and hardware technology of smart phones will not become an obstacle to the development of mobile learning [7]. Can mobile learning be applied to English teaching? This is a question that should be analyzed in depth.

$$\begin{aligned}
\Delta_{1P} &= \frac{1}{EJ} \int_0^{\pi} M_k R d\varphi = -\frac{KR^3}{2EJ} \int_{\frac{\pi}{2}}^{\pi} (1 - \sin\varphi)^2 d\varphi \\
&= \frac{(1 - \frac{3}{8}\pi)KR^3}{EJ} \\
\Delta_{2P} &= -\frac{R^2}{EJ} \int_0^{\pi} M_k \cos\varphi d\varphi \\
&= \frac{R^2}{EJ} \int_{\frac{\pi}{2}}^{\pi} \frac{1}{2} KR^2 (1 - \sin\varphi)^2 \cos\varphi d\varphi \\
&= \frac{KR^4}{2EJ} \int_0^{\pi} (\sin^2\varphi \cos\varphi - 2\sin\varphi \cos\varphi + \cos\varphi) d\varphi \\
&= -\frac{KR^4}{6EJ}
\end{aligned}$$

Figure 3: calculation formula

5 THE FORMATIVE EVALUATION SYSTEM MODEL OF MOBILE TECHNOLOGY USED IN ENGLISH ASSESSMENT

BS Bloom is a famous American psychologist who is the first scholar to apply the formative evaluation system to teaching activities [9]. By diagnosing problems in educational programs or plans, educational processes or activities, it plays an important feedback role for related educational activities, thereby improving the quality of educational activities. Formative assessment plays a pivotal role in modern educational concepts and can provide feedback even when it comes to it. Great emphasis is placed on the assessment of the teaching process [8]. Formative assessment has the following functions: it helps teachers to understand the learning process of students more effectively and discover the strengths and advantages of students in the learning process. In order to promote the teaching effect, teachers constantly improve the content and adjust the teaching rhythm in the teaching process. The traditional summative evaluations include: final exam and English application ability test (the national unified AB level test for vocational students, standardized test, no oral test, listening 15%) represented by standardized test, standardized test is the main evaluation standard. The examination-based evaluation system does not promote students to demonstrate their English practical ability and professional foreign language ability. Only formative evaluation combined with summative evaluation can prompt students to pay attention to the accumulation of ordinary knowledge and the actual use of language, not utilitarianism. Put all your energy into the mostly unscientific standardized tests.

6 PRINCIPLES OF USING VR TECHNOLOGY IN ENGLISH TEACHING

VR technology can bring an immersive experience to English learning. In the VR environment, learners will wear devices with sensing functions and can be highly engaged in the virtual environment [16]. This sense of engagement can enhance the efficiency and quality of English learning. The immersion brought by VR technology relies on wide-angle stereo display technology, motion tracking technology, haptic feedback technology, stereo, network transmission technology and voice input and output technology [10].

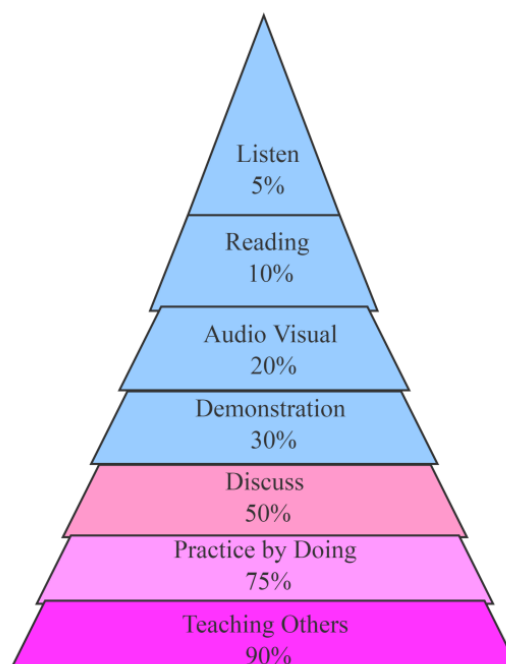


Figure 4: learning pyramid

When people observe the world, the positions of the two eyes are different, and the pictures they see are also different. When the two pictures are combined, a complete picture is formed. In VR technology, binocular stereo vision plays a very important role. The VR system displays pictures through a single display, but after wearing VR glasses, users can see odd-numbered frames with one eye and even-numbered frames with the other glasses. The difference in the images can make the user's vision feel three-dimensional [15].

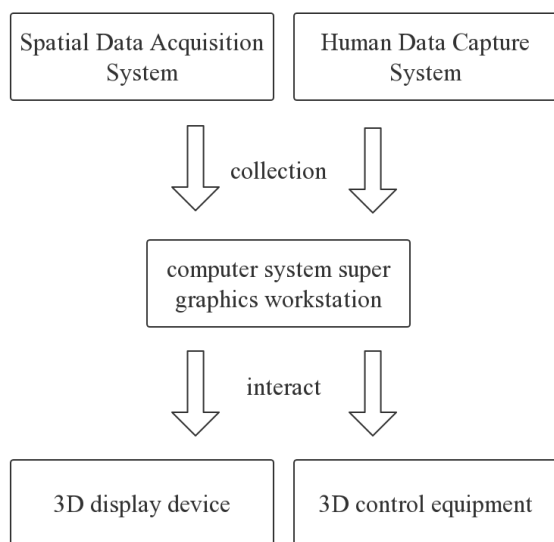


Figure 5: Virtual reality technology

7 CONCLUSION

The main content of this paper is to conduct a very in-depth analysis and elaboration of the research status and project case studies of mobile learning at home and abroad. Feasibility analysis of supporting English teaching with the aid of smartphone-based mobile learning. This paper summarizes the mobile learning teaching mode suitable for smart phones, and provides a realistic basis for the design of mobile learning teaching mode. Add practical application cases to the mobile learning theory, solve many problems in traditional English teaching, and finally analyze the application of mobile learning based on smartphones in English teaching with the help of case studies of learning on smartphones.

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