Research and Design of Mobile Classroom based on Android

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Abstract: With the rapid development of intelligent terminal, and mobile information technology, intelligent equipment has gradually in the lives of ordinary people in popularity, it has become people daily access to learning, life, entertainment, and the information of the main way. Android smart mobile operating system since its release in November 2007, due to its open source and free nature, in the smart terminal market share ranked first in the world. So the mobile application based on Android platform, the development prospect and benefit level must be very broad. This paper discusses the design and implementation of interactive teaching platform in the future classroom, aiming at creating an interactive teaching platform based on multi touch and mobile terminal technology. In this paper, the interactive teaching platform to meet the students' learning needs of wireless and paperless, enhance the interaction between students and teachers, and provide a new way of development for classroom teaching.

Keywords: Multimedia; Mobile platform; Platform design

1. Introduction

Since people began to study mobile learning has been more than and 20 years, in the world of mobile learning research and practitioners are growing, mobile learning related projects are also more and more [1-3].
Mobile learning research began in 1994, Carnegie Mellon University launched the "Andrew Wireless" project. This study makes the students in the campus environment to enjoy the freedom of wireless communication technology to support the convenience of mobile learning. Since then, the study of mobile learning began to gradually active in the world [4-7].

2. Overseas Study

In small and medium-sized science field, the typical is carried out at the University of California, Berkeley, human-computer interaction research room of mobile learning research project, Singapore MobiSkoolz project, carried out by China National Central University four years period excellence program, the European Learning2Go projects such as. These programs are designed to improve the efficiency of classroom communication and the effect of outdoor learning for teachers and students.
in the field of University, typical of a British Sheffield Hallam University of mobile learning effectiveness research, Germany Campus-Mobil project, University of Helsinki, Finland UniWap, Vaxjo University in Sweden C - Notes project etc.. These projects focus on improving interactive efficiency, promoting collaborative knowledge construction, mobile campus construction
in the field of vocational training, is typical of the Norway Oslo University KONWMOBILE research project, the project supports medical students to learn basic issues. This kind of project pays attention to solve the problem that the user meets in the job site and course study.
in the field of education for the whole community, typical of the European MOBILearn project, the study of mobile learning in University of Birmingham and the Le R Hand mobile learning research project". Projects in this field mainly for vulnerable groups to acquire knowledge through mobile learning, as they provide all kinds of learning resources and support services, not through the campus learning social groups can equal enjoy required education resources and education rights, in a certain extent embodies the fairness of education and resources.

3. Domestic Research

Compared with the foreign research situation, the domestic mobile learning of a late start, compared with representative project early Peking University mobile laboratory education project, Nanjing University mobile multimedia teaching Calumet project and number TV university campus wireless plan. Peking University mobile education experimental project, developed respectively based on the GSM network and mobile devices, GPRS and ontology of educational resources production, publishing and browsing of the three versions of the mobile education platform. Based on GSM network education platform is via SMS for information resources and the transfer and mobile education platform based on GPRS is to allow different mobile terminal devices through GPRS data service access to the resource. The third platform is the PC terminal and mobile terminal complement each other, through the Internet and mobile Internet produc-

tion, publishing and browsing of educational resources. Since then, most of the domestic mobile learning applications are mostly similar to the three versions of the mobile education platform. Is also subject to the restrictions on mobile devices and mobile communication networks in the mobile learning platform has not been a large-scale application. In recent years, with the national education informatization pace continues to accelerate, the upgrading of the mobile communication network infrastructure and mobile devices, the rapid development, some educational institutions began to pay attention to mobile education development potential of mobile learning in class I (love), for example, love will be social, the concept of community into the mobile learning to teachers can on the platform create a class group (similar to the class), in a class group as a unit teachers completed to student online testing, job and resource share. Primary and secondary schools in the field to home school instant messaging, for example by and communication business of 3 big operation and school cooperation, build the interactive relationship between schools and parents, pay more attention to the role of parents in teaching activities, convenient for parents to understand their children in school. Although with Netease, Tencent and other giants to join a strong to online learning industry, the rise of mobile education field has expected, however, whether what kind of mobile learning application model is more suitable for China's education, researchers need to continue to explore and practice.

4. Introduction of Classroom Interactive Teaching Platform in the Future

People's living and working mode has changed a lot with the progress of the society. The traditional teaching mode is obviously needed to change. With the addition of more and more advanced technology and new elements of science and technology, colleges and universities all over the country have been installed in the multimedia classroom. When using multimedia technology to carry out teaching activities, students can make the characteristics of two-dimensional, blue and other materials have more specific understanding, to meet the requirements of the Ministry of Education College Teaching reform. Modern teaching mode, multimedia classrooms have a variety of interactive way, like watch images, audio and video, so that students feel immersive, spontaneous participation in interactive teaching, can add to the fun of teaching, and improve teaching efficiency. A relatively sound equipment and multimedia classrooms because of the need to play audio and video display real demand, so the need of equipment is also more, such as: large screen display, computer, sound amplifying system, control system and so on. At the same time these devices to the school to bring a considerable maintenance costs, and this approach is only applicable in the classroom teaching, is not suitable for the class under the immersive learning, while not conducive to the exchange of teachers and students. In order to overcome the above shortcomings, it is urgent to need a new teaching method.

With the rapid development of computer software and hardware and mobile Internet, the application of computer technology in education is becoming more and more extensive. One of the more popular learning models is that the classroom is the future ".

In the classroom of the future, teachers need to interactive teaching platform for teaching, therefore the interactive teaching platform is the classroom of the future is an important part of, R & D in the classroom of the future interactive teaching is at home and abroad has been in research. The interactive teaching platform of this paper is a mobile teaching platform used in the future. The Android client mainly completes the students to use Android smart terminal to achieve the function of login, course, classroom interactive text, classroom interactive documents, classroom answer, desktop sharing, these functions satisfy students wireless and paperless learning needs, is conducive to the students and teachers interact with, also for the future of teaching provides a new path of development.

5. Interactive Teaching Platform

In the national Ministry of education w education informationization leading education modernization process, the traditional transfer ~ accept type teaching mode and teaching environment of a single traditional remote teaching mode has not adapted to the modern education. After the emergence of distance teaching mode greatly changed the teaching way, its essential feature is the separation of teaching and student can self-study, teachers can't hand personally assist students to study, while learning to program by the students themselves to develop and implement, teachers can only through the media technology to aware of students' learning, appropriate to give guidance and help. With the education of the more advanced technology and new elements of science and technology, colleges and universities in all parts of the country have been installed in the multimedia classroom, and modern teaching methods have gradually replaced the traditional teaching methods. When using multimedia technology to carry out teaching activities, students can make the characteristics of two-dimensional, H dimension and other materials have more specific understanding, to meet the requirements of the Ministry of Education College Teaching reform. A relatively sound equipment and multimedia classrooms because of the need to play audio and video display real demand, so the need of equipment is also more, such as: large screen display, computer, sound amplifying system, control system and so on. But at the same time these devices bring a considerable maintenance cost to the school. And this ap-

proach is not conducive to the exchange of teachers and students. Mobile learning is a new learning mode, which is adapted to the environment. It can make up for the shortcomings of the interactive teaching platform before it can be made up for the convenience of the terminal and the advantages of the wireless network. In has a multi Screen multi-point touch learning system, portable classroom recording and broadcasting system, digital desk and other high-tech equipment to the classroom of the future, wireless and paperless mobile intelligent terminal way of learning is a gall bladder before the study.

6. Conclusion

This paper describes the application of mobile learning at home and abroad, and presents the research status of mobile learning at home and abroad. Study on the mobile learning basic theory and application mode, from passing on Knowledge - situated cognition, individual learning - social learning and formal learning, informal learning three dimensions illustrates the change the application mode of mobile learning. And the mobile learning and its application mode theory and the current situation of China's primary and secondary education, and put forward a model for the application of mobile teaching in primary and secondary schools. The model includes five modules: users, classroom, resources, circles, personal space, to the user as the center, to the rich educational resources based on integration into the social, self concept and functions of the media, mobile learning and traditional teaching mode combined with each other, make them mutual cooperation, mutual promotion. In addition, the user module of the model will be introduced into the teaching activities, and fully tap the important role of parents in primary and secondary education. In the mobile application of teaching model for the logical model, using Android, J2EE technology combined with software engineering method carries on the demand analysis to the system, overall design, function module design, use case analysis, database design and so on. According to the analysis and design scheme, a mobile teaching system which is suitable for primary and secondary education is realized, and the technical problems encountered in the process are discussed. Each function module to write a detailed test case, a comprehensive functional testing, to prove the availability of the system.

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