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Application Research of Cloud Platform Based on Moodle

in Adult Education - Taking Computer Courses as an Example

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Abstract: By building Moodle learning environment in the cloud platform , and the design of teaching process of the corresponding with the author's teaching practice in Moodle from the cloud platform selection, learning environment to build and curriculum design, with adult education computer course as an example, the blended learning based on Moodle was discussed, the teaching practice shows that cloud platform Moodle platform can be effectively implemented based on the blended learning, which provides a new way for the teaching quality and efficiency improvement.

Keywords: Moodle; Cloud platform; Adult education

Introduction

In recent years, with the rapid development of information technology, the computer has become an indispensable tool in people's life and work. Master the basic computer application technology mainstream, has become the essential skills in the workplace people. But the computer including its hardware and software update speed, far beyond people's imagination, the fast pace of life, make people full-time study have fewer opportunities, and self efficiency and far better to have the guidance of a teacher, therefore, adult education in the workplace, become people to improve their own ability level a very important way, because, it can not only acquire knowledge under the guidance of the teacher, but also can obtain diploma of national recognition through examination.

THE STATUS OF ADULT COMPUTER COURSES

China Adult Education is also the rapid development and expansion, its form is varied, played a role can not be ignored in economic construction and scientific and technological progress. But it obviously can not meet the needs of social and economic development, the current process is mostly adult education is mainly accomplished by the centralized instruction, self-study examination, these links. But these links, including teaching content, self study content and the test questions are designed by the instructor. The students in the teaching process, is the passive to follow the teacher's footsteps, and the lack of active participation. The lack of communication between teachers and students, students and students, teachers can only be theoretical knowledge to their students, and teacher's purpose is to complete the teaching plan, the requirements of students concerned about the degree is not enough, to solve the problem of students' ability and team cooperation consciousness can not carry out effective promotion. And to participate in adult education students, the purpose is to improve the working ability and efficiency, its purpose is often to improve the practical ability and team awareness, for the theory of knowledge is not too concerned about. What they want is how to better complete the work, is not high to the theoretical knowledge of the requirements. Therefore, in the process of learning, can not think what learning content, the initiative in learning will definitely not high.

APPLICATION OF MOODLE IN THE CLOUD PLATFORM.

Cloud platform: The largest characteristic of cloud platform is to achieve the virtual management, scheduling and application of hardware resources by software. It has a flexible customization, dynamic scalability, high reliability and safety, high performance price ratio. Data, software in the cloud (the server), the characteristics of super large computing and storage capacity etc.. It can use cyber source, computing resources, database resources, hardware resources, storage resources by the virtual platform users.

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Moodle: Moodle is Modular Object Oriented Dynamic Learning Environment, it is curriculum management system which proposed by Australia's teacher MartinDougiamas based on constructivism education theory, and it is a free open source software that has been widely used in various countries at present.

The choice of platform

Cloud platform has been applicated widely in foreign countries at present. Amazon, Google, IBM, Yahoo and other large companies Microsoft cloud platform is a forerunner of other successful companies include Salesforce, Facebook, Youtube, Myspace etc.. Domestic grand, Alibaba, Baidu, Sina, Huawei, etc. the company has also begun to cloud platform operation.

Moodle has the compatibility and usability. Can be installed on almost any platform that supports PHP, this paper selects the cloud platform, select the ECS server in the product, select the PHP runtime environment based on tool (Centos 64 PHP5.4 Apache), the integrated environment: PHP5.4.27, Apache2.2.27, MySQL5.5.37, vsFTPd3.0.2.

PHP, is English hypertext preprocessor language Hypertext Preprocessor abbreviation. PHP is an embedded HTML language, is a server-side implementation of the HTML document embedded scripting language, the language style is similar to the C language, has been widely applied. You can generate Forms, ComboBoxes, Grid, Menus components such as the data, will be supported to converted to XML/JSON format.

Apache HTTP Server (Apache) is an open source Apache Software Foundation's Webpage server, you can run on most computer operating system, because of its multi platform and security is widely used, is one of the most popular Web server software. It is fast, reliable and can be through simple extensions of API, Perl/Python and so on will be compiled to the server in the interpreter. It supports the HTTP/1.1 communication protocol, the new owner configuration process, file support common gateway interface, support IP and virtual host, domain name of a variety of ways to support HTTP authentication, integrated Perl processing module, integrated proxy server module, supports real-time monitor server and custom server log, support server contains the instruction based on based on simple but powerful (SSI), support for secure Socket layer (SSL), providing a user session process tracking, FastCGI support, through the third party module can support Java Servlets.

MySQL is a small relational database management system, the developer for the Swedish company MySQLAB, was acquired by Sun in January 16, 2008. MySQL is widely used on the Internet small websites. Because of its small size, fast speed, low total cost of ownership, especially the characteristics of open source, many small and medium sized websites in order to reduce the total cost of ownership and the choice of Web site as a MySQL database.

Vsftpd is the "very secure FTP daemon" the abbreviation, security is one of its greatest feature. Vsftpd is a UNIX like operating system running on the server name, it can run on Linux, BSD, Solaris as above, HP-UNIX system, FTP server software is a completely free, the development of source code, support feature of many other FTP servers do not support.

The normal operation of the PHP, Apache, MySQL can support Moodle, vsFTPd is helpful for site's source file modification to managers.

The installation of Moodle

Moodle is installed on the cloud platform and in the traditional server installation is quite similar, but the first through the vsFTPd Moodle installation package upload to buy cloud server, and then through the remote desktop for automatic installation. The installation process is as follows:

a. Upload Moodle installation package via vsFTPd

b .Extracting installation package, enter the next level directory, change the directory Moolde xampplite (there is a mistake in the installation package Apache configuration file: the server path in the Apache/conf/httpd.conf set to /xampplite/apache, modify the path, in order to avoid the other configuration files directly to the directory is modified as xampplite), and then xampplite (including subdirectories) shear to a partition of the root directory (D).

c. Enter the d:\xampplite, start the apache_start.bat and mysql_start.bat, note that Apache may not start, because the 80 port is accounted for, at this point in the windows command line, use the "netstat -ano" to see exactly which PID using port 80, and then start the Windows Task Manager, switching to the process of the page, and Apache conflict program or service shut down. Or directly modify the Apache directory under the conf in the httpd.conf file in the port configuration. Change it into the unused ports system.

d.Into the browser input: 127.0.0.1/install.php and then select Chinese, download at the language pack screen click "download simplified Chinese language pack" and wait, here takes approximately 1-2 minutes. Display language -- "simplified Chinese (zh_cn)" has been successfully installed -- can continue to point backward (or the installation process is similar to fail, only to exit the browser shut down apache_start.bat and mysql_start.bat, delete the directory xampplite, repeat steps 2, 3), then is always the default click back, if you do not install Chinese package, you can go to the Chinese the next new packet after

installation, in your \moodledata\lang directory, and set.

e. Enter the administrator settings, select the time zone is GMT+8, enter the site home page settings.

f. This installation has been preliminary finish, if it is found that the calendar is garbled, open the langconfig.php file in Notepad, use ANSI to save as a file with the same name, covering the old file can solve the calendar garbled, click refresh.

COURSE DESIGN

The Moodle function is very imperfect, support the theory of Constructivism Based Teaching (collaboration, activities and assessment); provide 100% online teaching mode or over the Internet and face-to-face combined way; a friendly interactive interface; support of global database retrieval; provide on the server running the course list; allow anonymous users; course can classification and retrieval; can support thousands of network curriculum; most of the text area (such as resources, forum, magazine) available WYSIWYG HTML editor; to ensure the system security by security mechanism of mandatory, such as forum speech database consistency, cookies and so on; the individual level comparison feedback etc..
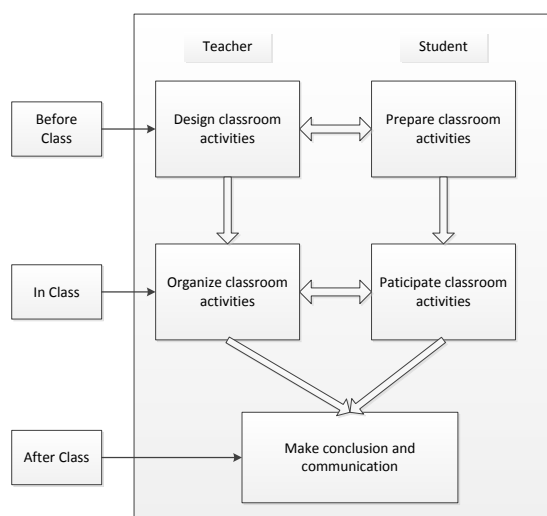

Fig.1 System data flow diagram

Moodle modules are: site management, user management, course management, a selection module, the magazine module, forum, chat module module, resource module, operation module, quiz module etc.. The current advanced education theory into teaching support platform.(See Fig.1)

In the adult education of computer courses, there are 3 main parts: pre class, class and after class. Each process will need the student and the teacher fully communication.

Before class

Teacher: making teaching resources, view the learning effect, the design of classroom activities

Student: learning and teaching resources, complete the exercises

The use of modules: curriculum management, the magazine module, resource module

a.Preparation of teaching resources

In the process of teaching, the teaching of knowledge generally completed by the video courseware, lesson plans and. These contents are completed by the course instructor and course team, and teaching resources timely upload to Moodle, its purpose is to enable students to actively participate in the video learning.

In the production process of teaching resources, producers can refer to the national quality curriculum quality open educational resources, combined with the characteristics of adult education to record the video teaching. In this way, it can not only help students access to the latest teaching contents of domestic outstanding teachers, and can make the video and curriculum goals, course content completely consistent. Video content should be based on knowledge point as the cut-off point, is a point of knowledge for a video, generally do not exceed 10 minutes in length of video, at the same time in the video should be combined with the courseware and teaching plan as far as possible.

b.Specific exercises before the class

In order to urge the students to resources for learning before class, teachers should be arranged and learning content related to practice, practice contents should be in before the course resources as the foundation, at the same time, the appropriate expansion, students can use the cyber source for answers, can also be carried out online communication by the network and the teachers and students, and timely feedback to the teacher. Its purpose is to cultivate students ability of autonomous learning based, supplemented by the team cooperation.

In today's society, economic globalization, informatization of science and technology, people have to face and deal with a large amount of information, with the rapid change of the environment only by education in school is not enough for life. To adapt to the future society, the students must learn to self learning. However, autonomous learning and requires people with can be independent of teachers and classroom learning ability, self-learning ability is not innate, but acquired through train formation. The students, can be completed in according to the process of practice, to practice the questions as a starting point, through the ability of independent thinking, find information constantly improve their autonomous learning. At the

same time, strengthen the ability of team cooperation through means of online communication.

In the class

Teacher: organize classroom activities (ask questions)

Student: participate in classroom activities (discussing the problem - to solve the problem - the share exchange)

The use of modules: Forum module, chat module, resource module

Through the pre class learning activities, give full play to students' autonomous learning ability, thus extending the students learning time in the invisible, improve learning efficiency. Its essence is the students to self-study before class, in class by discussing the way of sharing, the knowledge assimilation. Therefore, in the design of classroom activities, should give full play to the subjectivity of students, help students to complete absorption of the internalization of the learned knowledge.

a.The question design

Teachers need according to the course content and the students before class feedback situation, summarizes some related to real life problems, or the student put forward meaningful questions, let the students discuss in class. In this process, teachers can be based on the actual situation to guide the topic, at the same time, select the same problem students according to the number of grouping, each group with 4-6 as appropriate. Then, the group internal to the division of labor. Teacher learning group will issue guidance division, team members can discuss according to the division of labor, and then make collaborative inquiry together.

b. Training team

Teamwork is the individuals by dialogue, discuss, debate and other forms of fully demonstrate the research questions, to get the way to achieve the learning objectives. Team cooperation is conducive to the development of individual students thinking ability, enhance students' ability of communication between individuals and students mutual tolerance. In addition, the team cooperation on critical thinking and creative thinking of students formed, have obvious positive effect to improve the communication ability of the students. In the classroom activities of flipped classroom , teachers need to capture dynamic of students at any time and guide students timely.

c.Exchange experience

Students can share their learning outcomes in the classroom after autonomous learning and teamwork, also can exchange experience in the process of learning and experience. This sharing and exchange can take many forms, such as: the exhibition held, report, debate, small game etc.. In the sharing, can invite other class teachers and students or students'

colleagues of working unit to participate in it. In addition to this offline sharing or face to face, can also organizes the student to carry on the online sharing. Students will upload their learning achievements to the network platform, then the teacher and students can make comments after watching.

After class

Using modules: operation module, quiz module

Traditional classroom after class are mainly composed of assignments and exams, this form tend to make students to complete assignments and exams for the purpose, thus ignore the process of learning. And turn the classroom after class part, can by experts, scholars, teachers, peers and the learners themselves. Its main is a self assessment and evaluation of others is given priority to, in the process of evaluation, consider the students throughout the learning process of comprehensive performance, such as notes, speech, learning experience, as well as team members on the value of its this way, let the students attach importance to the learning process, and progress in the learning process.

TEACHING EFFECT

Enrich the teaching content

Computer course relative to other courses, with very strong practicality. Adult education and computer courses generally to computer based, the main teaching content, using a computer, hardware, and introduces the overview of office software. These contents, its theory is relatively simple, but need to master through a lot of practice operation. The flipped classroom mode, teachers can according to the characteristics of teaching materials and adult students, targeted production of teaching video, lesson plans, and the courseware, its purpose is to highlight the practical.

Change the teaching mode

The flipped classroom teaching mode, the teaching of knowledge is mainly online to complete, students can through online video courseware, lesson plans and to learn the knowledge. Students can according to their own learning and learning effect, watch the video courseware, lesson plans and repeatedly, to be familiar with the knowledge points. To have been due to work reasons could not participate in classroom teaching activities of the students, can through the online way to communicate with the students and teachers interaction. But the work arrangement is completed before class, the assignment is closely linked with the knowledge point, students can according to the contents of the job to carry out targeted learning.

Improve the teaching process

"Flipped classroom" is the real implementation of returning the learning subject to learners. The biggest benefit is the increase of the teacher-student, student student interaction, give full play to the subjective initiative of students. Turning the classroom will be the traditional classroom teaching activities in class, students use the teacher information provided independent arrangement perform learning, problem solving, knowledge of the completion of the task, its main body status is reflected, learning more active, more active, more effective, but also can cultivate the students' independent ability, thinking ability and innovative thinking.

SUMMARY

In adult computer course teaching, that is to pay attention to the particularity of the adult students, but also to meet the demand of computer courses practice strong, therefore, the traditional "spoon feeding" teaching has been unable to meet their demands. Flip the classroom through the teaching process is reverse way, full play to students' subjective initiative, ability to exercise the students to solve problems, promote the enthusiasm of study.   At the same time, through

group discussion and exchange way, not only can exercise the student team consciousness, but also contribute to adapt to the teaching of computer curriculum of adult education.

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