The Research of Blended Learning for Computer and LAN Course

Yu-Li MA
Qingdao Ocean Shipping Mariners College, China
mayl@coscoqmc.com.cn

Keywords: Blended Learning, Classroom Teaching, Network Teaching Platform.

Abstract. The traditional classroom teaching has been unable to meet the educational needs of students, with the development of information and network technology, blended learning increasingly reflects its superiority. This paper discusses the process of the blended learning based on network teaching platform and the matters needing attention. It lays a theoretical foundation for the implementation of blended learning.

With the development and progress of information and network technology, people can get information through a variety of ways, classroom teaching is not only a single “teaching and learning” process, but also an equal dialogue and interaction between teachers and students. The traditional classroom teaching has been unable to meet people’s needs and attract all the attention of students, resulting in some students’ learning effect is poor.[1] Blended learning mode is a combination of traditional classroom teaching and network teaching. Blended learning is to combine advantage of classroom teaching and network teaching, integrated classroom teaching, network teaching and Practice Teaching. Blended learning is not simply hybrid of the classroom teaching and network teaching, but to integrate different learning theory, learning environment, learning resources, learning style and so on.

In this paper, we carry out a blended learning research taking “computer and LAN” as an example which is a professional basic course for electronic and electrical professional. As a maritime occupation college, our college specializes in training operating level crew. Electrical and electronic professional students after graduation will engage in electrical and electronic technician in the ship. Because of the special working environment of ship, when the equipment belonging to the electrical technician suffers failure, he must handle it alone, which requires students to master professional knowledge. Electrical equipment on the ship, the computer and network are responsible for electronic and electrical technician. All the students need to participate in occupation qualification examination of Maritime Bureau. The students must pass the exam in order to participate in the work. It requires students to understand and remember the theoretical knowledge. The course mainly includes computer hardware, operating system and network knowledge. In the traditional classroom teaching, students’ learning enthusiasm is not high and the teaching effect is not ideal. In this case the teaching reform must be considered. This paper analyzes and designs of blended learning process from the aspects of pre analysis, teaching design, teaching organization and teaching evaluation. Blended learning process is shown in Fig. 1.
Pre-analysis

Feasibility Analysis

The knowledge of computer and LAN is better understood, rich network resources, as long as students take the time to learn, they can learn to understand. Progress of the classroom sometimes lags behind the ever-changing new technology, network teaching can make up for lack of classroom teaching. In support of network learning environment, students do not have to keep time and space with the teachers and other learners, learners can independently arrange flexible learning content and learning progress according to their actual situation. But teaching is entirely dependent on the network, there are many drawbacks, first a lack of face to face communication between students and teachers, it is easy to make students lose their initiative to learn. The problem which is not solved easily generates frustration. There is no uniform teaching guide, facing confused knowledge, students easily is distracted and unable to grasp the focus of learning. In classroom teaching, teachers can discover a student’s question thus they can be encouraged and guided. Therefore, classroom teaching and online teaching must be combined, complementary advantages to achieve better teaching results.

Learning Content Analysis

Prior to implementation of blended learning, a detailed content analysis must be carried out, which part of the knowledge for online teaching, which part for classroom teaching, which part for Practice Teaching. For example, computer hardware relatively easy to understand, often contacted everyday life, and network resources abundant, such knowledge may adopt a collaboration of network teaching and practice teaching. In the network operating system, Windows operating system is suitable for online teaching, DOS operating system is suitable for an integrated way of classroom teaching and practical operation. The part of the network protocol is more boring and difficult, so it is more appropriate adopting classroom teaching.

Instructional Design

Learning Environment

For classroom teaching, multimedia classrooms and computer rooms with a network environment are needed. Network teaching needs wireless network covered the entire campus. Network teaching uses our college’s network teaching platform. According to the functional architecture, the platform
consists of several subsystems: general network teaching platform, excellent course construction and evaluation platform and professional development platform, platform podcasts, courses alliance platform; Teaching platform provides good support for teachers and students online learning activities, teachers can build and edit courses, upload study resources; student can online learn, work, take quizzes and other activities until the completion of education. Interaction between teachers and students can use chat rooms and forums. The platform supports tracking statistics of the teaching process. The teaching process and evaluation show is combined. Teachers and students achieve extensive exchanges across time and space, to fully mobilize the initiative of students.

Learning Resource Preparation

In order to facilitate student self-study online, in addition to the conventional multimedia courseware, teaching materials, it needs some custom-built video resources. Because student’s professional requirements and syllabus requirements of Maritime Bureau, video recording should be close to the teaching objectives. Teaching videos need to have video playback, fast forward, slow motion, replay, rewind and pause. Visual effects, interactive and time length of teaching video have an important influence on learning result. In order to effectively complete learning on the concentrate stage, videos must be short, ideally controlled within ten minutes. Video should clearly and concisely explain new knowledge and thematic points, keeping in mind teach rhythm, selecting examples of interactive strategies. Combined with previous content analysis, the online teaching content should be separated into some short independent knowledge points, to record video for each knowledge point.

According to different knowledge points, video recording can take various forms, including explaining courseware, whiteboard explain, examples show, practice demonstration etc.

Learning resources and curriculum organization processes need to be showcase on the network teaching platform, therefore it needs to design rational show form of teaching platform, to facilitate students to find information, to learn and test etc. “basic information” includes course description, syllabus, teaching courseware; In accordance with section, “teaching activities” clearly shows the organizational structure of the course, including key and difficult contents of each section and the form of teaching etc.; “E-learning” includes all video resources, arranged in chapters and content; “Online test” module facilitates students to classroom test.

Teaching Activities

Classroom Teaching

Classroom teaching courses include course import, course delivery, in-class discussions and exchange of flipped classroom, answering and etc. In the blended learning, course import is very important. In general, in course import process, teachers and students communicate learning objectives and methods of the course and so on, so that teachers and students forming a consensus of the course teaching objectives, the forms of learning activities, learning support and evaluation method. Import lesson can enhance mutual understanding between teachers and students, build the identity and emotional ties of students to teachers, and create a harmonious relationship between teachers and atmosphere. A successful import lesson is great role in improving student learning enthusiasm.[2] To the knowledge of classroom teaching, it needs to be explained as clear as possible in class, but avoiding lengthy winded. In the explaining process, teachers always pay attention to the students’ status to adjust teaching methods and progress. If the students appear to burnout and inattention etc., teachers should timely reminder to motivate them. The conventional classroom teaching process can be inserted discussion exchange. Discuss and exchange can be specially arranged, or randomly, may be collective, or team. It helps students deepen their understanding of knowledge, while training students’ language skills. Discussions and exchange of flip classroom mainly refer to the knowledge for students’ network
learning, teachers need to inspect the learning result and answer students’ questions in the classroom learning. Online learning depends on the students’ enthusiasm and initiative, to the students who is lack of self-control and initiative, teachers may discuss through classroom, class tests and other methods to supervise and inspect.

**Network Teaching**

Network teaching includes online learning, online assignments, group collaborative learning, case studies, finding information, course tests, questionnaires feedback and other forms. Online learning is mainly refers to the self-learning teacher’s video resources on the platform in accordance with the progress of teaching, and completing the task. Collaborative learning is a strategy by organizing students to form a group or team for learning. Team members will work together to achieve the goal of classroom learning. Team members can share information and learning materials which are found in the learning process, with other members of the team, even other groups or the whole class. Teachers select suitable knowledge point to the students as a collaborative learning goal, team members can learn through information search, study discussion, upload work and etc.

**Practice Teaching**

Some practical knowledge requires a combination of practice teaching and classroom teaching, practice teaching is an essential complement for classroom teaching and network teaching. You can use “teaching - learning - do” or “learning - do” form, so that students can truly apply what they learn.

Blended Learning improves the requirements for teachers and students. The students no longer sit and wait to hear in passive learning mode, the entire course requires students to actively participate. Without active involvement of students all reforms are just useless. So how to mobilize the enthusiasm of students to ensure that students can really get involved is the pre-condition to the successful completion of teaching activities. First, it needs a good communication between teachers and students, establishing rapport t. Import lesson should improve the students’ attention of the course, making them understanding teaching methods, attracting students to participate in courses. To stimulate students’ motivation to learn, the key is to make students to learn as their goal rather than to complete the task. Therefore, teachers should focus on the curriculum into meaningful activities rather than just the completion of busy work. For example, by a suitable test students can develop a sense of accomplishment or by the team to led learning. Learning content must be novel and be combined with student’s profession, this is also a factor affecting the learning motive. Daily teachers may demonstrate learning process and activity rankings on the forum, timely recognition of serious and progressive students, increasing their integration grade. Teachers need to have reasonable scientific design and preparation to the teaching process, timely adjust method based on the student’s status in the curriculum implementation process. Teachers are no longer based teaching but also to focus on “guidance”, giving full play to the initiative of students, improving students’ ability to find and solve problems. Discussions and exchange carry out divergent learning about the curriculum knowledge, in this process the range of discussion may be very wide, this requires teachers to have a wide range of knowledge, but also to have an attitude of learning with students. Teachers must improve their professional level, also focus on strengthening the capacity of teaching and research, and constantly learn new knowledge and new technologies, have the ability to lifelong learning. In the beginning of the reform, students have not established independent study habits, teachers should always follow the students’ learning situation, there is a reasonable incentive policy to encourage students to keep up with the progress of teaching. Reasonable teaching assessment is an effective means of supervision.
Teaching Assessment

Classroom Assessment

Classroom Assessment includes answering questions performance, discussion and exchange information, practical performance, tests and examinations, teachers make a comprehensive assessment in accordance with a certain percentage. Discuss exchange and practices performance can reflect the effect of self-learning, so their ratio should be larger. Exchange must cover each student, which is one method of urging students to learn online by themselves.

Network Assessment

Network Assessment mainly includes network curriculum views, the number of articles on the forum, online mask, the results of collaborative learning, online testing and etc. The last score is a comprehensive reflection of classroom assessment and network assessment.

Feedback Amendment

During the implementation and at the end of the course, teachers must timely focus on students’ oral feedback and questionnaires. Teachers also need to sum up the advantages and disadvantages of the teaching process to improve teaching results in the latter teaching process.

References
