

Study on PBL Optimization of Multimedia Computer-aided Teaching

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Abstract. The rapid development of science and technology requires the enterprise only rapid innovation, reform and transformation to survival and development in this information explosion society. Although traditional teaching teaches students to learn knowledge, the students lack the spirit of innovation. Education can meet the social training diversification and the rational structure. The country is still facing a labor shortage, high skill talent shortage, and the demand for high skilled talents to further expand. The computer-aided design courses are many professional fields. It will be applied to computer-aided design technology, such as landscape, civil engineering, art design, film technology, industrial design etc. The computer-aided design software according to the different nature, some entry software is relatively simple, such as AUTO, CAD, and PHOTOSHOP etc. Some entry software is difficulties, such as 3DS, MAX, MAYA and other 3D software. But they are feasible in common. It has made good teaching effect, and put forward in teaching computer-aided design trial. PBL teaching method is a new attempt. It hopes that can adapt to the requirements of computer-aided teaching according to the teaching process of PBL teaching method. Through a variety of data collected and analysis during the study. It can draw the conclusion: PBL of teaching computer classes had a positive impact and stimulate interest in learning.

1 Introduction

1.1 The significance

In recent years, the teaching reform of primary and secondary education has made considerable progress, but in the bonds of tradition and the entrance examination pressure. Especially some of the long-standing problem of education has not been fundamentally resolved. Not only caused the student loss interest in learning, learning burden increased, atrophy of the spirit of exploration, but also greatly hampered improve overall quality of students. The modern era, the rapid development of science and technology, multimedia computer and network technology-based information technology is one of the world's most active fields of science and technology. Its development, not only will change the way people work and live, and will also change the way of education and learning. In order to meet the challenges of the rapid development of science and technology and economic globalization, the developed countries have begun to focus on raising student a series of new capabilities. New educational ideas, instructional methods, measures, and media are emerging one after another. The expanded scope of educational resources has led to a need for new instructional model in education. Currently there are already a number of models to draw upon the teaching. These modes are: problem-based learning, case-based learning, resource-based learning, computer-supported cooperative learning, collaborative laboratory, inquiry learning, Miniature World and so on. Project-based learning (PBL) is an extremely efficient and helpful teaching mode. Because it has a certain rationality and feasibility, so this teaching model will gradually flourish in China.

2. The Definition of the PBL

PBL is consisted of content, activity, scene and result. It it shown as figure 1. PBL is the selected the research topics of thematic learning life, social life and natural and related to the human development, and initiative to acquire knowledge, apply knowledge and solve a problem. For project-based learning (PBL), different scholars have different definitions.

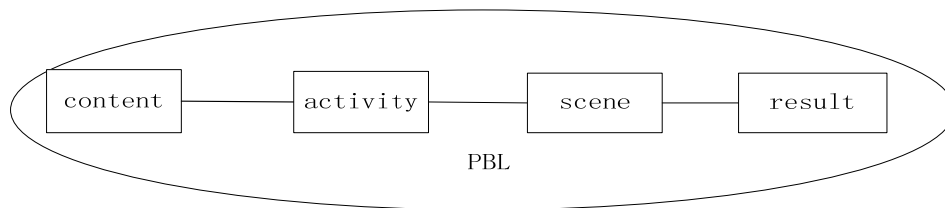


Figure 1 The composition of PBL

2.1 The foreign definitions of PBL

(1) Project-based learning is an innovative model for teaching and learning. It focuses on the central concepts and principles of a discipline, involves students in problem-solving investigations and other meaningful tasks, allows students to work autonomously to construct their own knowledge and culminates in realistic in products ^[1].

(2) Project-based learning: An instructional method that uses complex, real-life projects to motivate learning and provide learning experiences; the projects are authentic, yet adhere to a curricular framework ^[2].

(3) Project-based learning is an instructional strategy that is intended to engage students in authentic, "real world" tasks to enhance learning ^[3].

The three definitions "project-based learning" (PBL) were seen as a teaching mode, teaching methods and teaching strategies.

2.2 The home definition of PBL

(1) PBL is learning the concepts and principles of research subjects as the center. The students participate in a survey and research activities to solve problems, in order to construct their own knowledge systems, and can use them to go to the real world ^[4].

(2) Students will combine the theoretical knowledge with practical real-life issues closely through personal research, literature review, data collection, analysis, writing papers, etc. They can get comprehensive training and awareness. Finally, students have to present their case studies in the classroom, communicate with each other, training expression and other skills. This teaching method is called project-based learning ^[5].

Both scholars agree that project-based learning emphasizes the ability to train student's hands-on research and problem-solving.

Through the above analysis and comparison, we can define the PBL as follows: PBL is as center as the concepts and principles of subject. Its purpose is that to produce works, and sell to customers. In the real world, then can carry out exploration activities with a variety of resources, and solve a series of interrelated issues.

3. The Advantages of PBL Application in the Multimedia Computer-aided Teaching

PBL thrust of spirit for the students to experience in the real-world, and to solve specific practical problems to real life.

3.1 The improvement of teacher quality

PBL teaching method has put forward higher request to the teacher quality. The traditional computer-aided design courses, teachers will be as long as the operating software basically handle. But PBL teaching requires teachers not only have software operation ability, but also have professional design ability. At the same time, their needs have strong research ability and practice ability. It can basically qualify.

3.2 Optimization evaluation methods

The rationality of PBL teaching evaluation method is the key elements to decide the PBL teaching effect. PBL teaching method is more concerned about the students' learning process rather than the results. This is different from traditional evaluation methods. According to different classroom situations, it can use the different evaluation methods. When the class carried out smoothly, the students' consciousness, enthusiastic, active, efficiently to solve the problem of learning, and steadily improve. Teachers can secretly record it, and do not destroy the students pace or increased the students' mental pressure by score. When the students to discuss the problem of

partial blocked, and silent, teacher needs adopt flexible class scoring, control the student classroom discipline and learning.

3.3 Improvement a wide range of information resources

For some problems, students cannot find the methods and answers to solve these. So the students need the external resources to study. Information technology, especially network resources can build a convenient platform for student inquiry. Students can use a search engine and to take appropriate and effective search methods, they can find the information resources needed for PBL.

3.4 Provident a good learning process recording

The importance of PBL learning process and learning outcomes equate. Its emphasis on learning not only results, but also emphasizes the learning process. By means of e-portfolio, students can autonomously learning activities related to the integrity of the information recorded. This recording of the learning process to facilitate the students for their own learning later improved and amended, but also facilitate the process of learning assessment and management.

3.5 Provide for the student's work produced a variety of forms

PBL requires students to complete work created in the learning process. By means of information technology, students' work can be colorful. At the same time, the use of this form of information technology can really achieve the purpose of education and curriculum integration. Students will make information technology as cognitive tools to efficiently complete their studies. PBL as a teaching strategy reflects constructivist teaching thought. It can be used as classroom teaching reform good starting point, and try to solve the many problems that exist in teaching method.

4. Conclusion

PBL teaching method has two advantages. First, it emphasizes self learning. The teacher arranged an opening questions, students need to use of resources, group discussion, and practice to complete this topic. Second, in the PBL teaching method, students can the request of the teacher, group to complete this topic. It must exert the power of teamwork. PBL teaching method emphasis the students as learners study ability, training and learning ability.

PBL focus on basic concepts and principles of discipline, and more focus on the activities of teaching itself. It emphasizes cooperative learning among students, in small groups to carry out activities to study the issue. PBL applied in the computer-aided teaching, it can improve the ways of learning knowledge for students, and improve the teacher quality. It also can provide widely rang of resources and a good teaching management. It is convenient for students to study and learn the knowledge. And it also benefit for teachers to teach and evaluate the students.

PBL teaching method in computer-aided design courses teaching is a beneficial. It helps to develop a person with ability. It can effectively improve the quality of teaching, to achieve teaching objectives, and more conducive to students ability in many aspects. Truly reflect the "development of students, student success as the goal of everyone, student-centered learning to learn, to develop students ability to innovate core" ideological content of education.

References

- [1] Variuos Among Different Teachers and Schools [Online] Available : <http://www.bie.Org/pl/reso.html>.
- [2]The Guide on the Side [Online] Available: <http://www.learnCanada.Org/guideontheside.html>.
- [3]An overveiw of PBLE. Project Based Learning in Engineering (Pronounced "Pebble"),[Online] Available: <http://pblmm.k12.ca.us/pblguide/pbl&pbl.htm>.
- [4]Li Jiahou. Reform and Implementation of Information Technology[Online] Available: <http://www.Sste.com/download/peixun/peixun2.ppt>. 2002,12,03.
- [5]Liu Yanshen. American Higher Educational Reform Brief[Online]. Available:

<http://www.net.edu.cn/20011112/300928.shtml>. 2002,12,03.

[6]Yang Qing. Study on the PBL Applied in the Design Teaching of Higher Vocational Computer[J]. Jurnal of Ningxia Teachers University (Natural Science), 2012(6).

[7]Liu Jinfu. Research on Project-based Learning[D]. Jiangxi Normal University, 2002, 05.

[8]Han Qi. Application of PBL Teaching Method in Vocational Computer Teaching[J]. Urban Tutor Monthly,2014(4): 142-143.

[9]Zou Lei. PBL teaching mode in Computer Basic Course Teaching Procedures and Implementation[J]. Software: Electronic, 2014(22): 244-244.