Reform of CAD Teaching Based on Task-driven Model

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Keywords: Task-driven Mode; CAD; Teaching Reform

Abstract: There are some problems in the teaching of CAD, such as unreasonable curriculum setting, the combination of teaching content and specialty. Based on this, the author puts forward some suggestions on the reform of building CAD teaching in order to meet the needs of society for higher vocational professionals through the practice of the reform of CAD teaching in the mode of task area. At the same time, a series of reform measures for the teaching of the course were proposed. Increase the CAD certification teaching link to improve the quality of CAD teaching. Research shows that the improvement of CAD teaching methods based on task-driven mode provides a theoretical basis for the cultivation of many professional applied talents.

1. Introduction

With the development of computer science, computers are widely used in the field of design and drawing. Because AutoCAD assisted design technology has strong practicality and practicality, CAD-assisted design has become an indispensable technical ability for construction engineering technicians [1]. The teaching goal is to integrate the important basic concepts of graphics and the common techniques of each major into the CAD drawing teaching process, so that students can fully understand the importance of basic drawing techniques and software use skills in the mechanically tedious learning process [2]. In order to meet the needs of social development, most domestic universities have offered CAD-related teaching courses. In the context of the transformation and development of local colleges and universities, along with the gradual advancement of the reform of CAD teaching, a series of teaching quality problems also follow [3]. In the course of integrating the necessary knowledge points into the process of practical skills training, the relevant national vocational skills assessment standards are infiltrated into the course teaching [4]. The teaching method is similar to that of computer application course, that is, teacher demonstration and student practice [5]. The main content of the course is to introduce the functions of software and the usage of tools. This paper puts forward suggestions and opinions on the reform of CAD teaching of Task-based pain-relief mode, and discusses the teaching techniques and teaching methods used in the actual teaching process [6-8].

2. Methodology

Higher vocational CAD teaching focuses on learning various two-dimensional or three-dimensional software, requiring students to master commonly used drawing and editing commands and software use skills, and finally draw engineering drawings that meet professional requirements [9]. In order to meet the needs of the society for compound professionals with high CAD application skills, our college, like most colleges and universities, has set up the course "Architectural CAD" in all directions of architecture specialty [10]. Because the object of teaching is junior students, in the absence of much professional knowledge support, students do not know what they want after drawing, component understanding is incomplete, it is more unsatisfactory to talk about engineering drawing standards, integration is difficult to remember not to say, the teaching effect is not very ideal. With the purpose of “application”, it plays a central role in supporting students' comprehensive operational practice skills training. At the same time, in order to master the professional drawing practice and draw a solid foundation for the engineering drawings that meet the professional requirements, the teaching should be based on professional ability. At the beginning of

  DOI: 10.25236/iwedss.2019.182

the CAD course, we generally arrange the teaching according to the content of the selected teaching materials, from the basic drawing environment setting of CAD → basic drawing command → basic editing command → advanced drawing and editing command → text → tile → dimension → Graphic printing and output → simple three-dimensional operation order to teach the course.

In the traditional CAD teaching, there are deficiencies in the selection of teaching content, the teaching methods and methods, and the use of teaching methods. For example, in the teaching process of drawing complex parts drawings or machine and component assembly drawings by using drawing commands and editing commands, students often have problems in finding the size or assembly structure, which hinders the mastery of the software. Without the aid of professional knowledge, only drawing technology will be achieved, which only reaches the level of the tracing staff, not the training goal that our undergraduate colleges have to achieve. This course integrates the basic theories and skills of mechanical drawing, computer drawing, engineering mechanics, mechanical design and numerical control programming, and lays a good theoretical and practical foundation for the subsequent study and practice of relevant professional knowledge. Due to the limitation of class hours, teachers can only selectively introduce common functions with clothing examples, but it is impossible to explain all the functions of the software system in detail. Students' learning has always been subordinate to passive acceptance. We must reform the traditional architectural CAD course teaching to meet the needs of the society for the compound professionals with CAD application skills in Higher Vocational Colleges fundamentally.

3. Result Analysis and Discussion

Higher vocational colleges mainly train high-quality and high-skilled professionals for the society. They are front-line personnel. They require curriculum setting and teaching to proceed from the needs of professional posts, professions and students' development, and to closely link work practice with social practice in order to "be applicable". During the teaching of CAD training module, students are divided into groups to visit the technical departments of factories and learn the process of designing products with CAD software by technicians. Then the technical personnel will give technical guidance and assign tasks. The students will take the tasks back to the school, and then complete the tasks under the guidance of the teachers. The vast majority of students can not learn and discuss the homework assigned after class in time, and the poor teamwork and communication results in the inactive state after class. In other teaching sessions, students do not have the opportunity to contact or apply clothing CAD again. The drawbacks of this teaching model are obvious. . Therefore, when teaching CAD, teachers should simultaneously incorporate CAD related theories, so that the difficult theory is reflected in the specific application, and these theories can better guide the software application. Textbooks that are only published for the purpose of publishing a book are not targeted in terms of content. Therefore, in the selection of teaching materials, textbooks that focus on the combination of theory and practical engineering should be selected.

There are many kinds of textbooks on the market, and most CAD related textbooks are published in the form of computer operations or biased towards machinery. For the CAD textbooks of architecture, the content is also uneven, and the difference is very different. Through the module teaching, not only strengthens the rigorous work style of the students, corrects the attitude of dealing with practical engineering problems, but also exercises the practical operation ability of the students' CAD. For course teaching, it is necessary to choose a more mature version with relatively complete functions. The process of students completing tasks is the process of learning knowledge. At home and abroad, large and medium-sized clothing enterprises, the application of computer technology has been very common, the society needs a large number of compound talents who are proficient in clothing technology and master garment CAD technology.

4. Conclusions

In traditional CAD teaching, the ultimate goal of student learning is exams, lack of motivation and follow-up support. Higher vocational education is a special kind of education. Its training goal is

skill-based talents. Therefore, in the teaching, we should focus on the training objectives of skill-based talents, establish a competency-based teaching philosophy, and highlight the practicality of the curriculum. Using the task-driven teaching method, breaking the traditional teaching mode, taking students as the main body, teachers as the guide, returning the initiative of learning to the students, allowing students to learn the knowledge points in the process of doing tasks, and improve the interest in learning and the quality of teaching. Through a large number of examples to improve students' professional drawing literacy, so that students can skillfully use CAD in practice after graduation. In order to improve the teaching effect of building CAD course, so that students can achieve the ultimate ability goal of learning building CAD course. Under the opportunity of transformation and development of local colleges and universities, the new mode of school-enterprise cooperation is beneficial for us to try new methods and means.

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