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Exploration on Teaching Reform of "3D Modeling Technology" Course in Higher Vocational Colleges under the Guidance of Working Process

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Abstracts: The work process oriented higher vocational curriculum teaching reform has become the direction of higher vocational education curriculum teaching reform. Taking the teaching of "3D modeling technology" course as the research object, according to the talent training requirements and professional curriculum characteristics of higher vocational colleges, starting with the advantages of working process oriented teaching, this paper analyzes the problems existing in the teaching of "3D modeling technology" course in higher vocational colleges, and puts forward the strategies of teaching reform for reference.

Keywords: Working Process; Vocational School; 3D Modeling Technology; Reform in Education

1. Introduction

"3D modeling technology" course is one of the skill courses of computer teaching. It integrates the whole process of 3D and interior decoration design, mainly uses 3D software and other auxiliary software to design interior renderings through CAD plans, and displays works and pictures in the form of animation to cultivate students' practical creative ability. According to the characteristics and requirements of the professional curriculum in the working process, we should implement the curriculum reform, pay attention to the cultivation of ability, and face the enterprise to cultivate the technical application-oriented talents needed by the enterprise.

2. Teaching advantages based on work process orientation

Work process oriented teaching belongs to a new structure, which is the reconstruction of the curriculum system, and optimizes and reorganizes the relevant knowledge points according to the professional situation, so as to form the work process knowledge. When carrying out teaching, teachers also change from the narrator of knowledge to the organizer, guide and participant of students' learning, which makes the teaching process change from students' passive learning to autonomous learning. Therefore, the teaching reform of "3D modeling technology" can benefit enterprises, schools and students. The details are as follows: first, the work process orientation improves students' practical ability. Students are learning in a real environment and gain rich experience. In this way, students can better meet the requirements of enterprises after graduation, and enterprises can find employees who meet the requirements faster and reduce the cost of pre job training. Second, the school can implement the curriculum teaching reform based on the work process orientation, and deepen the contact with enterprises, in order to improve the influence of the major, and attract more students to join. Through curriculum reform, teachers have also gained more practical experience and improved their professional level. Through school enterprise cooperation, employment channels have been broadened[1].

3. Problems faced in the teaching of "3D modeling technology" in higher vocational colleges

In the teaching process of "3D modeling technology" course in higher vocational colleges, most of the time it is carried

out according to the teaching of disciplinary courses, with teachers and textbooks as the core, and the educational characteristics are not obvious. How teachers teach and how students learn, which weakens the application characteristics of the "3D modeling technology" course, which is embodied as follows: first, teaching based on textbook cases. This teaching method mainly provides students with a practice opportunity after several theoretical courses in the teaching process. The practice cases are mainly based on book content and are not targeted, which can not effectively improve students' practical ability, let alone embody students' innovative ability, and cultivate students' professional ability. Second, the curriculum content planning is unscientific, and the authenticity of the case needs to be examined. Because the "3D modeling technology" course involves a lot of content, in the limited teaching time, the content and structure of the course must be scientifically adjusted and carefully designed. It can not be based on the description of the textbook or to mobilize the enthusiasm of students to participate in learning. Some cases whose authenticity needs to be tested and have little use for practical work will inevitably affect the improvement of students' practical operation ability[2]. Third, students need less time to improve their ability to operate. Traditional curriculum teaching is often carried out by teachers according to the steps in textbooks. At first, students will participate in learning. Later, students' interest in learning will weaken. Especially for the course of "3D modeling technology", it is a highly practical course, thus it is not enough to rely on the theoretical knowledge in textbooks alone, and more computer operation is particularly important.

4. Teaching reform strategy of "3D modeling technology" course in higher vocational colleges under the guidance of working process

4.1 Breaking through the serialization of traditional textbook knowledge points and taking project construction as the main line

The arrangement of knowledge points in traditional textbooks pays more attention to the logical relationship between them. Usually, it tells the relevant conceptual knowledge points first, then the knowledge of each step, and finally practice. Although students can acquire more complete knowledge in this way, the whole process will be very boring, which can not make students understand the course content more deeply and achieve the teaching objectives. Therefore, in teaching, we need to break through the serialization of knowledge points in traditional textbooks, change the setting of teaching content from the "linear" design in textbooks to the "working process" oriented direction, and set the "block" content system with cultivating students' professional post adaptability as the core [3].

4.2 The project module is set from simple to complex, with situational teaching

The teaching content of "3D modeling technology" course can simulate the rendering task process of the decoration company, plan according to the business requirements of the company, and set several learning situations of indoor basic modeling, living room, business hall and hotel modeling in combination with the course content and requirements, so as to integrate the basic knowledge and skills to be mastered in the course teaching into the corresponding situations. The learning process of each situation is set according to the method from simple to complex. Each learning situation includes several sub modules. For example, the training project of indoor basic modeling includes indoor furniture, building wall and basic material modeling. The training of indoor furniture modeling is mainly to enable students to understand the requirements and standards of sofa, bed and other modeling; Indoor building wall modeling is mainly to let students learn the method of modeling; The training of indoor basic materials project enables students to understand a series of operations such as indoor materials and lighting. The learning situation of modeling in the indoor living room includes the modeling of indoor building wall, the creation and combination of indoor furniture; Indoor lighting and other settings and rendering several modules. Each module should focus on specific projects and use real cases to tell[4].

4.3 Adopting task driven teaching method and implementing project-based teaching according to the working process

The learning of "3D modeling technology" course should be connected with the actual job. When making renderings, it covers a wide range of knowledge and the relevant technologies are difficult to understand. Therefore, teachers should use progressive methods in teaching. Each learning situation involves several sub modules, and each module can also be divided into several small tasks. Each small task corresponds to a teaching unit to implement teaching. For example, in the sofa modeling teaching, it can be implemented according to the following stages: first, the consulting stage. The specific task of this stage is to let students design several models in the 3D modeling software according to various sofa drawings collected; The second is the implementation stage. The tasks in this stage can only be implemented after the tasks in the previous stage are completed, mainly recording relevant text information; The third is the evaluation stage. At this stage, teachers mainly evaluate students' design works. After learning in the above stages, students have a certain drawing ability. For the assigned tasks, teachers can let students complete them through group cooperation, so that students can realize the important role of teamwork while acquiring knowledge and improving skills[5].

4.4 Processing oriented teaching assessment and evaluation

After completing the work, middle school students should learn to summarize, which is a necessary professional habit. The summary can be composed of student summary and teacher summary. Among them, students need to summarize while practicing in the implementation of each module, score their works, and each group evaluates each other. Teachers' summary requires teachers to carefully observe the performance of learning and comprehensively evaluate their learning behavior, attitude and ability. For example, whether the learning of the course module meets the requirements. The assessment of the course can be composed of process assessment and achievement assessment, which systematically assesses the comprehensive ability level of students. The process assessment is the comprehensive evaluation of teachers and students. The result assessment is obtained through the "indoor renderings" competition organized in the school, which is scored and commented by enterprises or teachers in the school.

5. Conclusion

In a word, the teaching reform of 3D modeling technology course based on work process orientation is not achieved overnight. It is a process of continuous practice, which is embodied in the reform of teaching content, method, evaluation and so on. In the process of teaching reform, teachers should effectively grasp the characteristics of curriculum teaching, break through the serialization of knowledge points in traditional textbooks, and take project construction as the main line; The setting of project modules is from simple to complex, with situational teaching, adopt task driven teaching method and implement project-based teaching according to the working process to promote the realization of the goal of curriculum teaching reform as soon as possible.

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