Research on BIM Technology Integrated Training Course System for Construction Engineering Technology Major

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Abstract: The current BIM technology has very broad development prospects, especially in the construction industry. In the process of cultivating talents, the specialty of construction engineering technology in higher vocational colleges should be based on BIM technology and cultivate application-oriented talents. This article will research and analyze the traditional architecture training courses and explore how to improve students' BIM technology. Improve the professional skills of students in the process of reforming BIM integrated training courses.

1. Traditional Architecture Training Courses

1.1 The content is not closely related

In many vocational colleges, when organizing students to carry out architectural training courses, the courses are carried out according to corresponding theories. Different training courses have different emphasis, so different engineering examples will be selected. This teaching method is fragmented. There is no close connection between the training courses, which prevents students from forming complete engineering concepts. In this process, students' practical ability cannot be systematically cultivated. However, in the process of recruiting talents, construction professional companies require students to have a strong practical ability, so the teaching process should focus on increasing the internal connection of practical training courses.

1.2 Lack of training depth

In the course of curriculum development, the major of construction engineering technology in higher vocational colleges is mainly carried out through two forms of training. The first is to organize students to visit the construction site. In this way, it is impossible for students to enter a state of practice. Moreover, subject to objective conditions, there is a certain periodicity in the production and construction of students. And this kind of out-of-service internship poses a security risk. In the process of organizing students to participate in practice, the school will be in a formality.

The other is to organize students to conduct internships in the school's training base. In this mode, teachers lead students to practice operations. This method simply guides students through experiments. The course training content and course design are relatively difficult, and they cannot exercise their practical ability or improve their skills.

2. Status of BIM Technology Training Courses

2.1 BIM technology

BIM technology is actually a model, that is, information technology applied in the process of engineering in the construction field. Able to simulate different links of practical design and construction management. It has a variety of functions such as information, big data, and cloud computing. BIM technology has played a huge role in the rapid development of Internet construction in recent years, and has promoted the development of modern construction industry. However, in the process of continuous development of network technology, BIM technology has brought both development advantages and many security risks. Current BIM technology must improve security defense capabilities. Only the BIM software system has high security, can it not be

affected by the outside world, and can not be damaged by external factors.
In the future development process, the scope of application of BIM technology will also become wider and wider. Judging from the current demand for talents in society, there is a large demand for BIM technical talents in society. In this situation, there are still many students in higher vocational colleges who have difficulty finding employment. In other words, in the process of training talents, the number of trainings for BIM technical talents in schools is far from enough to meet the needs of society.

2.2 Status of curriculum development

In recent years, many vocational colleges have gradually launched BIM technology courses. However, as far as the current situation is concerned, the scope of application of BIM is not wide enough and the relevant curriculum system is not perfect. The school only offers basic courses. In the course of setting up, in order to guide the student learning organization, students are organized to participate in some competitions. In addition, during the development of practical courses, teachers will choose different teaching software according to different stages of the project, and the selected engineering cases will also be different. This BIM technology course development mode is far from improving students' skills and meeting the industry's demand for talent.

3. Research and Analysis of Curriculum System

3.1 Big data

In the process of training BIM talents, schools will be affected by many factors, but the curriculum is not perfect in the current situation, which directly affects the development of training. In addition, the course was also influenced by big data technology.

In the process of cultivating BIM talents, higher vocational colleges will use multimedia technology to guide students to continuously practice and improve students' practical ability. The emergence of big data platforms in recent years has also provided more possibilities for the personalized development of students. In the course of traditional curriculum development, BIM teaching courses are teaching activities based on syllabus. It is impossible to involve different targeted teaching content according to different characteristics of students. But if big data technology is combined with BIM, we can set up a micro-learning video teaching mode for students. In this way, students at different levels of learning can be satisfied and can learn.

In addition, in recent years, the demand for BIM technical talents in the society has been increasing. In this case, higher vocational colleges must improve students' practical ability. If the use of big data to introduce simulation virtual technology can provide students with a simulated practical operating environment. In the course of investigation and research, we found that although some higher vocational colleges offer BIM technology courses, the development of the courses requires the support of practical operations. The school is not equipped with relevant hardware facilities, resulting in a very backward classroom teaching mode and unable to improve students Practical skills. Under this circumstance, the trained talents cannot meet the development needs of society and the quality is not high. But using big data can solve this problem properly.

3.2 Clarify the goal of talent training

In the course teaching, the most important thing in the development process is to determine the training goals of talents. Only in this way can the teaching work have more basis. On the basis of using big data technology, it is necessary to improve the current BIM technology course. The current society has different needs for talents, and there are different requirements for BIM technical talents. In this case, to be effective, we must set up talent training goals and continuously improve the quality of talent training. High efficiency can set training goals scientifically and reasonably according to the characteristics of different industries. BIM technicians are very much needed by current construction companies. But enterprises recruit talents who are practical, strong, and professional. Therefore, efficiency can be used as a basis to establish a dynamic talent training

goal. Some companies require students to have strong application skills, while some companies require students to have BIM project management capabilities. Therefore, higher vocational colleges need to understand the future development needs of students, as well as different positions, characteristics and scientifically set talent training goals, in the process of continuous adjustment, so that each student can smoothly find employment.

3.3 Use of Internet BIM teaching resources

In the process of carrying out teaching work in higher vocational colleges, we must actively use the Internet to establish an Internet BIM teaching model. This can continuously enrich the resources of BIM technology courses. In the process of introducing more excellent courses, improve the quality of teaching. In the process of cultivating talents, higher vocational colleges must first focus on improving students' practicality. Internet technology and building engineering courses should be combined. In addition, when guiding students to learn BIM technology, other disciplines should also be integrated. For example, in the process of cultivating talents in higher vocational colleges, the knowledge of construction management should be appropriately introduced for the content of BIM technology. In this way, students' practical application ability will be stronger, and these BIM technologies can be used more reasonably.

In addition, higher vocational colleges must optimize the current resource allocation in the process of using Internet technology. Because BIM technology involves more knowledge points and more complex content, but in terms of current teaching, the current situation of teaching resources can not meet the development needs of students at all. Therefore, higher vocational colleges can use Internet technology to cooperate with different educational institutions to introduce more teaching resources, so that students have more learning materials. For example, the efficient use of the Internet and other companies have established an online teaching platform. [1] Students can log in to this platform to learn theoretical knowledge according to their needs, and they can also analyze and understand specific cases of enterprises. In this way, students' awareness of practical exercise can also be improved. Under conditions, the school can build a training platform to guide students in time training.

3.4 Strengthen the construction of teachers

In the course of curriculum development, teachers must continuously improve the quality of teaching in a limited time. This requires teachers to have a strong practical ability to master more theory and basic knowledge. Therefore, higher vocational colleges should cultivate teachers' professional skills and improve their comprehensive qualities. When developing BIM technology courses, teachers should understand the knowledge of construction engineering, and they should also be proficient in operating BIM technology. [2] According to the current situation, most of the educators in higher vocational colleges have just graduated, and there are few people who participate in the work. Although they have a solid theoretical foundation, they have no practical ability In this case, higher vocational colleges should also provide appropriate education and training for teachers.

3.5 Cooperation with relevant BIM training organizations

Under conditions, schools can take advantage of the regional resources of the industry. In-depth cooperation with some software companies or the Construction Engineering Group. In this way, students can understand the current development needs of enterprises for talents. In addition, schools should build a virtual simulation experimental teaching platform on this basis. Many BIM training institutions have relatively complete BIM software packages. In the process of talent training, we have grasped the development trend of society, and there are many actual cases. If higher vocational colleges can cooperate with these training institutions in depth, they can make up for the lack of funds in higher vocational colleges and obtain more BIM software packages on the basis of cost savings. [3]

3.6 Continuous BIM Teaching

From the first year of enrollment, students should have a basic understanding of BIM courses. This is to lay the foundation for subsequent professional lessons. This shallow m course form can enable students to gradually master the use of BIM software and understand related technical knowledge. In the process of gradually guiding students, let students master 3D4D and even 5D technology. In this way, students can quickly simulate the construction budget during the construction process, and perform engineering description and time dimension description.

Teachers should also provide students with more cases during the training. Let more students understand the specific application of BIM technology. Guide students to participate in different activities such as BIM modeling construction management quality management. In this way, students can combine the BIM technology they have learned with the different tasks of underground construction or management. In this way, the students' professional knowledge is combed and they can master more professional skills. [4]

3.7Improve the practical application of BIM

Higher vocational colleges should strengthen students' ability to apply BIM in the process of curriculum design and graduation design. Guide students to optimize construction design schemes, organize students to conduct team battles under the driving of tasks under the guidance of actual project engineering cases. In the process of teaching work, we must adhere to the spiral teaching method, not only to improve the comprehensive skills of students, but also to allow students to continuously accumulate BIM capabilities. Let students have a BIM perspective and be able to think about problems in this way, conduct course design or graduation design and take part in some big assignments. This way can give full play to the value of BIM and let students realize the importance of BIM technology. In the process of teaching, this technology can be more widely used. Therefore, the school must set some hard rules, and must use BIM technology for graduation design or some assignments. In this way, students can understand the life cycle of engineering projects, understand task management, and master different technical skills in the process of continuous application of this technology.

Summary: In recent years, BIM technology has developed very rapidly. In order to meet the social demand for talents in this process, higher vocational colleges must cultivate more BIM technical talents. However, the four-year period at the university is very limited. Teachers can only cultivate students' learning abilities and improve their innovation and development abilities in the process of gradual guidance. Only in this way can students continuously learn new technologies and new knowledge on the basis of mastering the basic skills of BIM technology. Improve your professional skills.

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