

Construction under BIM Technology Application Research on practical teaching of Engineering Management Specialty

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Abstract: China's "14th five year plan" and the long-term goal outline of 2035 have determined to accelerate the development of digitalization and build a digital China; Jbb [2020] No. 38 document launched the starting gun of cost marketization reform to promote the transformation and upgrading of the industry. BIM Technology has been widely promoted in large and medium-sized enterprises in terms of engineering drawing recognition, building model construction, virtual simulation interaction of technical solutions, construction of cost index database and material price database, which will promote the construction project management personnel to improve their "digital", "intelligent" and other post capabilities. Driven by both supply and demand, teachers need to meet the needs of the industry, actively introduce new educational concepts, and carry out practical teaching reform. In view of this, this paper will analyze the practical teaching of Construction Engineering Management Specialty under the application of BIM Technology, and put forward some strategies for your reference.

Key words: BIM Technology Application; Construction project management; Practical teaching

Introduction:

BIM is the abbreviation of building information modeling, which is translated into Chinese as building information model. It is a construction project management software based on computer system, and has great application value in practical work. BIM Technology has strong visibility characteristics. Operators can simulate and adjust various data of construction projects in the BIM interface, so as to obtain building information under different data. The application of BIM Technology in construction projects can effectively solve many design conflicts, and plays an important role in improving the quality of construction projects. The application of BIM Technology can develop enterprise database, establish index database and material price database, realize the storage, reuse, sharing and benchmarking of cost data, and guide accurate decision-making, measurement and pricing. Establish the virtual simulation model of key technical scheme and virtual interaction, which can verify the rationality and feasibility of the scheme and prevent construction risks. Using project storage data can effectively solve the objections of bid evaluation, contract review, contract settlement, etc. It is of great research value to connect the typical scenes of BIM Technology in engineering construction and conduct research on practical teaching of engineering management major.

1. Analysis of the current teaching situation of construction project management specialty

1.1 Too much emphasis on theoretical courses

If we want to improve the teaching quality of the construction project management major, we should not only pay attention to the explanation of theoretical knowledge, but also significantly improve the application ability of college students to the corresponding technology, so that they can better solve the practical problems faced after entering the job, so as to improve the quality of learning. However, at present, many teachers in the teaching of construction project management often focus on the explanation of theoretical knowledge, which can easily lead to college students' accumulation of certain theoretical knowledge, but their practical ability is poor, and it is difficult to solve the problems of actual construction project management. Due to the lack of understanding of the industry, some college students still need a long time to exercise their ability and professional quality after entering the job, which will virtually waste a lot of valuable time of students. In addition, as BIM Technology is still in the process of continuous development, many teachers find it difficult to find the correct application mode and set more specific application goals when applying BIM Technology to the teaching of construction project management major, which will lead to the difficulty of further improving the application effect of BIM Technology in the practical teaching of construction project management major.

1.2 Focus on CAD and BIM modeling teaching

At this stage, many teachers attach great importance to CAD teaching when carrying out practical teaching of construction project management major. Many college students can skillfully use CAD to carry out architectural design drawing production, which has a certain role in promoting the learning level of construction project management major of college students. However, because CAD software itself belongs to the type of two-dimensional graphic design, there may be some limitations in practical application, especially when carrying out the design of some modern buildings, many problems may be encountered only by using CAD software. In the practice of digital engineering, the mismatch between information platform and business management, the mismatch between information investment and efficiency improvement, business inertia and digital reengineering process, and the problems of shaft construction mode and system

connection are still prominent. The practice of teaching reform is mostly fragmented, and its systematization and practical popularization need to be improved. The ideas of teaching reform and the ability of digital teaching reform need to be optimized.

1.3 Not conducive to the cultivation of students' innovative thinking

When carrying out the teaching of construction project management, we should pay attention to the cultivation of College Students' innovative thinking, so that they can better cope with the challenges in their work and study. In addition, the construction engineering industry generally involves many projects with large capital investment, and the corresponding construction design requirements and construction quality requirements are also very high. Mistakes must be avoided in the whole process. However, from the perspective of college students, they lack practical operation opportunities in the process of learning in school, and the knowledge they have learned is difficult to meet the requirements of practical work. They will also be subject to many restrictions when carrying out construction project management, which leads to the solidification of many college students' thinking, and few of them can actively introduce new thinking and new ideas. The innovation initiative in the design activities is insufficient, and the designed works are difficult to meet the construction requirements of architectural engineering. To this end, we can try to apply BIM Technology to the practice teaching of construction project management major, so that college students can use software to carry out the simulation of 3D building structure, so as to further broaden the vision of college students, help them form a higher level of innovation consciousness and innovation ability, and help them get a more comprehensive development.

2. Application Countermeasures of BIM Technology in the teaching of construction project management specialty

2.1 Application of simulation teaching

In the practice teaching of construction project management specialty, we can help students use BIM software to build three-dimensional models by applying BIM Technology to educational activities, which can lay a solid foundation for engineering simulation teaching later. By applying BIM Technology to the simulation teaching of construction project management specialty, college students can better adjust and optimize the design of the appearance and structure of buildings. At the same time, they can also use 3D models to display the functions of the designed buildings, so as to increase the understanding of other people about architectural works.

When applying BIM Technology to the teaching of construction project management, we should pay attention to the following problems. First, create a BIM teaching resource library. In order to better enable BIM Technology to serve the teaching work, we should create a BIM resource library based on textbook knowledge and network resources, and put some building materials, building components and building structures into the library, so as to lay a solid foundation for college students to learn the corresponding knowledge. Second, design BIM teaching cases. According to the teaching needs of different stages, we can design different BIM teaching cases, and use the case teaching method to carry out the teaching activities of construction project management major, so as to help college students contact more types of cases and further develop their abilities. Third, create a BIM practice platform. In order to improve the effect of education, we can try to create a BIM practice platform when we apply BIM Technology to the teaching of construction project management major, so as to realize the integration of various construction projects, so that college students can be exposed to different types and styles of buildings, which has a great role in promoting their practical ability. For example, when teaching some knowledge of housing architecture, we can combine the key and difficult contents of teaching work with BIM Technology to create a virtual model, and use this model to dynamically display the internal structure of the house for college students, so that they can more intuitively understand the knowledge of this course.

2.2 Emphasizing the application of BIM Technology in skill competition

The major of construction engineering management has high requirements for college students' practical ability. If we want to improve the effect of practical teaching, we should pay attention to the development of College Students' practical ability, which is inseparable from the help of skills competition. Before that, teachers should provide corresponding guidance and help to college students, and use BIM Technology to exercise college students' comprehensive ability and practical literacy, so as to help college students better use BIM software, so that they can reasonably apply BIM Technology to solve various problems encountered in skill competitions. In addition, college students can effectively broaden their horizons and accumulate more rich practical experience by participating in skill competitions, and their professional knowledge reserves will also be greatly improved. Moreover, the application of BIM Technology in the teaching of construction project management can help college students simulate the construction process, enable them to complete knowledge learning and skill training in an immersive experience, and enable college students to experience more sense of achievement.

2.3 Improve the construction of teaching facilities for BIM

1. build a teaching resource platform

If we want to better apply BIM Technology to the practical teaching of construction project management specialty, we can try to build a BIM teaching resource platform, which can provide richer teaching materials for the subsequent education work, and maximize

the utilization of the current existing education resources. Through the construction of teaching resource platform, it can further enrich the teaching materials of construction engineering management specialty, improve the depth and breadth of education content, enable college students to better combine the knowledge they have learned with the actual job requirements, and improve the quality of practical teaching. Moreover, combined with the teaching resource platform, college students can carry out more efficient pre class preparation and post class review, which can greatly promote the development of their self-learning ability and self-learning consciousness, and further improve the comprehensive learning level of college students.

2. improve the construction of training base

In the practice teaching of construction project management specialty, students need to carry out certain practical activities, so as to better apply the knowledge they have learned to practice, which requires us to pay full attention to the construction of training base. By improving the construction of training base, it can help college students combine theory and practice in their study, so that they can better master the corresponding knowledge and improve their comprehensive quality. In the process of practical teaching, college students can enter enterprises to carry out knowledge learning, let them internalize the knowledge they have learned in real projects, and let them constantly hone their skills and ideas in their posts, which plays an important role in improving college students' BIM operation ability. By improving the construction of training base, it can help college students form a higher level of practical ability and professional quality, which will greatly help their future development.

2.4 Application in engineering cost Teaching

Actively build the application scenario of BIM Technology in project cost management. Build the bidding application scenario, develop the enterprise database through school enterprise cooperation, establish the index database and material price database, realize the storage, reuse, sharing and benchmarking of cost data, realize accurate decision-making, measurement and pricing, and complete the training of bill of quantities preparation, bidding control price and bidding quotation; Build construction management application scenarios, and complete the construction scheme optimization training by using BIM 3D field layout and bim5d coordination; Build contract performance scenarios, use BIM Technology for cost and quality control, and complete contract control training.

Connect with X Certificate (Digital Application of cost) and cost skills competition, integrate the certificate examination point and competition point into the professional teaching content, and integrate the post course and competition certificate, so as to further expand the path of education, help college students better understand the whole process of the construction project, and play an important role in improving the quality of education. Guide students to modify and optimize the engineering construction demand data by using 3D models, and display the results in real time, which can greatly improve the quality of architectural design.

3. Conclusion

To sum up, BIM Technology itself has great advantages. Applying it to the practical teaching of construction project management specialty can create a good educational environment for teachers and make knowledge visual and three-dimensional, which plays an important role in enhancing college students' intuitive sense of knowledge. Therefore, if we want to improve the application effect of BIM Technology in the practical teaching of construction engineering management specialty, we can analyze it from the application of simulation teaching, the emphasis on the application of BIM Technology in skill competition, the improvement of teaching facilities construction for BIM, and the application in engineering cost teaching, In order to promote the practice teaching quality of construction project management specialty to a new height.

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