

The Faculty Building on BIM International Talent Training

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Abstract: It is an effective way to improve teachers' international vision and international communication ability form the internationalization construction of teachers in colleges and universities. Which can broaden the vision of the faculty in colleges and universities and promote the exchange of scientific research level. Based on the status quo of BIM teaching staff and SWOT analysis, this paper proposes some measures for the construction of BIM international teaching staff. Which can actively carry out international exchanges and cooperation.

1. Introduction

With the unprecedented development of China's construction industry, high quality and low cost have become the focus of investors. However, it is very difficult to effectively control the cost. It is affected by many internal and external factors and often, which become one of the disputes between the owner and the construction party. The building information model contains the data generated during the whole life of an engineering project from the early-stage investment, design, construction, operation, maintenance and demolition, which realizes the fast and accurate transmission of data and information. BIM realizes the whole cycle dynamic management of engineering project, and makes the cost control get the actual effect. However, there is still a big gap between China and western developed countries in faculty building on BIM international talent training. Based on the above reasons, this paper puts forward some plans for the construction of BIM international talent training faculty.

2. The concept and SWOT analysis on BIM

2.1 The concept of BIM

The building information model was first proposed by Charles Eastman 30 years ago. The NBIMS explains it as follows. BIM is an information integration platform as well as a resource sharing platform. This platform provides data required by different professional and technical personnel and becomes an effective and reliable basis for the whole life cycle management of construction projects. At the same time, it can also express the physical status and functional characteristics of the project facilities to users. In different stages of a construction project, participants can change and extract the data they carry through the BIM model. And then we can realize the collaborative work among various professionals.

BIM can establish information model and has a huge database, which contains all the data in the whole life cycle of this building project model, including physical information, functional characteristics, component characteristics, process control, construction schedule, etc. This model can realize the design, construction and operation and maintenance management in the construction project. We can monitor and adjust the plan in real time. BIM is a process, not a result. Currently, BIM technology in China is still in the design stage, but its application is not only so, but also can be extended to many professions, such as structural design, project management, cost budget, construction management, 4D management, etc.

2.2 The SWOT analysis of faculty building on BIM international talent training

In this paper, we analysis the internationalization of the teaching staff in local colleges and universities through four concepts, such as the leverage effect, the inhibition, the vulnerability and

the problem. And then we build a SWOT matrix, which is shown in Table 1.

Table 1 The SWOT matrix of faculty building on BIM international talent training

Internal factors External factors	S	W
	(1)State preferential policies and local government support. (2)Colleges and universities have distinctive characteristics. (3)Universities and local governments rely on each other.	(1)The constraints of their own conditions. (2)The restraint of discipline construction. (3)The limitation of teacher team construction itself.
O	SO	WO
(1)National policies give local universities a lot of autonomy. (2)Progress made by universities themselves. (3)Reform of the personnel system in public institutions. (4)Increase the capacity and space to serve society.	(1)Strengthen national policy guidance and increase support from local governments. (2) Highlighting the characteristics of local colleges and universities. (3)Accelerate the pace of reform.	(1)Get rid of your conditioning. (2)Efforts will be made to strengthen discipline building. (3)Strengthen the building of teaching staffs in local colleges and universities.
T	ST	WT
(1)Pressure from key institutions. (2)Institutional obstacles to personnel work in colleges and universities. (3) The challenge on social transformation of teachers' morality.	(1)We will intensify personnel training. (2)Improve the ethics of teachers.	(1)Take steps to participate in internationalization. (2)Seize every opportunity to improve their competitiveness.

3. The status quo of faculty building on BIM international talent training

3.1 The status quo

According to the faculty and workers in Chinese colleges and universities, BIM teachers occupy a small proportion. Moreover, BIM teachers have a weak faculty. We can know from the above data that the overall development of BIM faculty is relatively positive. This reflects the increasing investment in higher education and some obvious achievements.

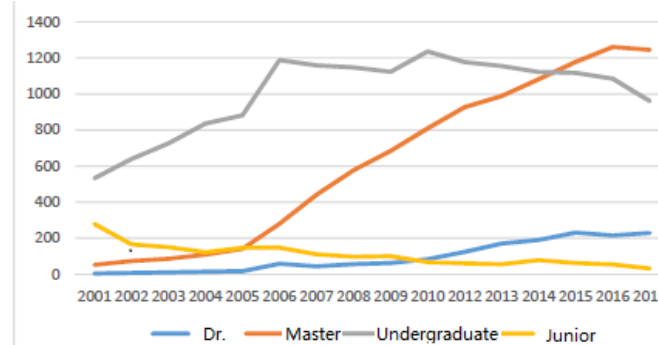


Figure 1 The degree of college BIM teacher

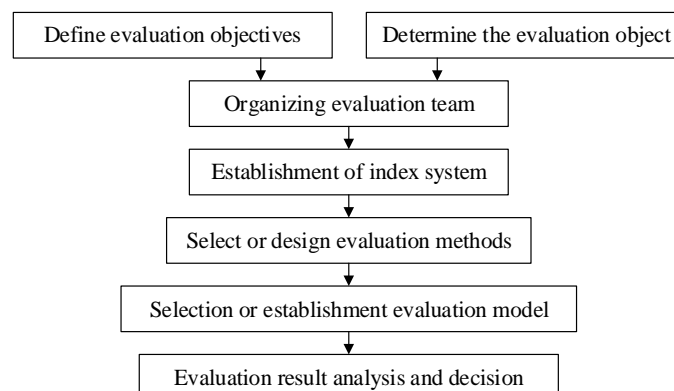


Figure 2 General process of BIM teacher comprehensive evaluation

3.2 Resources for faculty building are limited

Although Chinese universities are positioned at the strategic height of developing higher education, local universities have no advantage in resources in cultivating international faculty. Local colleges and universities lack of international publicity. The limited number of teachers' overseas training results in the phenomenon of seniority. Because colleges and universities have less funds, most teachers are trained internationally in a short term, and the academic exchanges and learning are difficult to achieve the desired results. The international environment has no advantages, and the attraction for overseas talents is not strong. As a result, the teachers are not superior in intelligence introduction.

3.3 The international management system of teachers is not perfect

There are various ways to ensure the international training of BIM teachers, such as scientific talent incentive mechanism, complete teacher training system, sound professional and technical evaluation and recruitment system, and open teacher selection and selection mechanism. However, some colleges and universities are still imperfect in the management system of teachers. Which restricts the international training of BIM teachers.

4. The construction of BIM international faculty evaluation system

4.1 The construction of comprehensive evaluation

BIM teacher comprehensive evaluation is a system composed of seven elements, including evaluation purpose, evaluation object, evaluator, evaluation index, index weight, comprehensive evaluation method and evaluation result. The general process of BIM teacher comprehensive evaluation can be seen from figure 2.

4.2 BIM teacher internationalization evaluation method

The management concept and training mode of BIM teaching staff should be in line with the international standards. We must cultivate a team of international BIM teachers with international awareness, international vision. The method can be seen from Table 2.

Table 2 BIM international teacher evaluation index system

First indicators	Second indicators
International exchange of teachers	Proportion of foreign teachers in schools
	Number of teachers with overseas study experience
	The number of people going abroad to attend academic conferences
	International organizations and publications
	Number of foreign lecturers
	Number of overseas students
	Number of foreign cooperative research
Teaching internationalization	Number of courses related to foreign culture
	Number of courses in the original edition
	Number of courses taught in foreign languages
International exchange and cooperation in scientific research	Number of international cooperation projects
	Scientific research funds from abroad
	Number of joint papers published by China and foreign countries
	Number of papers published abroad
	Number of international conferences

5. Conclusion

The key of BIM international talents cultivation lies in the teaching staff internationalization. So, it is a great importance to form a BIM teacher team with excellent quality, noble ethics, reasonable

structure and strong ability. We must strengthen the construction and intensify the construction of teaching staff in colleges and universities.

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