

An analysis of 1+X Certificate (BIM) and the promotion of engineering cost curriculum reform

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Abstract: In this paper, the implementation of BIM modeling certificate of “1+X” certificate is combined with the reform of engineering cost talent training program. The author, combined with the experience of practical teaching, analyzes the puzzles and coping strategies in the implementation of this work one by one, tries to pass the examination of 1+X certificate through the revision of talent training program, and closely combines the new types of technical and technical talents needed in rural revitalization. Explore the “1+X” certificate combined with the new era of digital architecture, smart city education and teaching reform approach.

Key words: higher vocational education; 1+X certificate; Talent training

With the development of BIM technology, the industry’s demand for BIM talents is becoming more and more sophisticated. In order to cultivate engineering cost applied talents with high professional quality and BIM innovation and entrepreneurship ability, the effective talent training mode is crucial for vocational colleges. The training of vocational and technical talents should not only meet the needs of enterprises in the industry, but also reflect the curriculum ladder of talent training in vocational colleges. There are opportunities and challenges in the development of our country’s construction industry, and higher vocational colleges are the cradle of vocational and technical personnel training. How can we explore a technical and skilled personnel that conforms to our national conditions and serves our country’s rural revitalization strategy? This article will be from the following three aspects to explore.

1. The talent training program supports the BIM modeling certificate examination stage

In recent years, the implementation of the vocational skill level certificate “1+X” certificate is a new flow injected into the talent training program. Whether the knowledge point involved in a certain certificate is one or several modules in the original program, or the processing and promotion of traditional knowledge points, how can the knowledge module be scientifically integrated into the talent training program? When to integrate it? One of the problems is teaching method, teaching method is the reform and innovation of teachers’ teaching concepts and teaching methods, carrying out the “three education” reform practice, integrating the new technology, new process, new norms and new requirements reflected in the vocational skill level certificate into the talent training process, and promoting vocational education to actively adapt to the development trend of science and technology and the talent needs of industry enterprises. Whether the training program with vitality comes from injecting fresh elements into it continuously according to the market situation, in the face of the emergence of a large number of new materials, new processes and new technologies in the construction industry, innovation on the basis of inheritance and inheritance, talent training specifications are also advancing with The Times, continuous innovation, in order to effectively serve the society, lead new technologies, and develop new technologies; At the same time, teachers have been engaged in teaching and research for a long time, digging more in their own fields, and capturing new elements of the industry is more sensitive. A research-oriented teacher must be able to get on the platform, but also to get on the front line, know the technical application status of the front line of the industry, can correct errors and stop losses at any time, and can also tap new potential; A set of talent training program suitable for the requirements of The Times must be the crystallization of the collective wisdom of a research-oriented teacher team. The team teacher is the leader, and the talent program is the carrier, carrying the college time and career development direction of a class of students. From public basic courses to professional and technical courses, from theoretical course learning to practical teaching, it is interlinked and paved the way before and after. In order to cultivate a good professional ethics and professional quality, Chongde to the good, honest and trustworthy, love and dedication, with the spirit of excellence craftsman; Have a strong collective consciousness and team spirit, can carry out effective interpersonal communication and cooperation, and harmonious coexistence with society and nature of technical skills talents.

2. The demand of the construction market provides the source power for the implementation of the “1+X” certificate

2.1 A certificate without demand is worthless

With the promotion of “1+X” certificate, major vocational colleges are carrying out the examination and training of different kinds of certificates, and also pay a lot of energy for it. However, when the students with the corresponding certificate have to go to work, some units have never heard of what this certificate is for, because in the relevant activities of the enterprise, there is no specific use of these certificates, the students with the certificate may not get the corresponding encouragement, let alone the recognition of technical skills, which greatly reduces the students’ further study of the corresponding technology. In order to continue to upgrade the enthusiasm for the certificate, if in the setting of “1+X” certificate directory, and policy matching measures further in-depth, in the new market competition conditions, which is the essential certificate or the certificate in urgent need? Which certificate policy promotion can effectively promote the construction industry practitioners to improve the skill level? Such a demand for valuable certificates is more worthy of examinees to spend energy to get, both to test the skill level of a practitioner, but also for the development of enterprises to solve the needs of the emergency, to avoid the wind of poor

research for research.

2.2 The talents needed by the development of the country at the present stage should be highly consistent with the training specifications of vocational colleges

With the implementation of the rural revitalization strategy, a large range of villages in northwest China need to be refreshed and show a new look. Vocational colleges closely follow the national development strategy and deeply cultivate the field of vocational and technical skills talents. At this stage, the development needs more new technical talents, such as smart buildings, mathematical villages and sponge cities, which are the continuous innovation of a generation of architects. The crystallization of continuous distillation and sublimation, rather than a new thing that appears out of thin air, is a new era of architecture cast by the fast track of the Internet or big data platform. In this context of development, practitioners in the construction industry will have higher requirements. Besides mastering professional technology, they will also master new tools, use new equipment and other new skills. For example, the traditional masonry workers only need to lay skilled bricklaying skills, and today they require more, not only to control the bricklaying robot but also to carry out masonry arrangement, fine brick arrangement, the use of smart worksite related software and other digital skills, which is the typical difference between new workers and traditional workers in the digital construction era.

2.3 The certificate of professional technology is sustainable

In the past five years, the comparison of professional and technical certificates in vocational colleges has encountered unprecedented confusion. On the one hand, to promote the “1+X” certificate examination, do the certificates of other industry and association directors need to continue? On the other hand, where is the sustainable development direction of the “1+X” certificate? At present, various evaluation organizations are uneven, and it is difficult to obtain different professional primary, middle and advanced certificates, so the recognition degree of certification holders will be very different; Where is the ladder of follow-up development? Is there a ladder to assistant engineer, engineer, Senior engineer, etc.? The other is the mutual recognition issue between several evaluation organizations. Although they are all “1+X” certificates, can the certificates issued by the two organizations be recognized by each other? The development of the construction industry has an urgent demand for construction informatization talents and management talents. Through the examination of vocational skill level certificate, professional teachers teach according to the skill points of vocational skill level certificate, and divide knowledge points into specific modules or projects to some extent, so as to improve students’ technical skill level. With the increasing requirements of practitioners in the construction industry and the intensifying competition of college students in entrepreneurship and employment, the school takes the integration of courses and certificates, the reform of three education and the talent cultivation plan as the main contents of training, and implements the design of technical skill training modules through the process of teacher learning, training and assessment. Building Information Modeling (BIM) has effectively dealt with the shortage of resources, loss of information, and the challenges from sustainable development and improvement of construction efficiency. The whole construction industry has ushered in a new generation of technological revolution. Designers, engineers, builders, operation managers and deconstructors make efficient use of building resources. The geometric, physical and functional digital expression of new and existing buildings throughout the whole life cycle of buildings provides information sharing and knowledge resources for relevant participants in the entire construction industry.

3. Whether certification, competition, school and enterprise can jointly create a platform for mutual recognition

At present, the 1+X certificate system is more vigorously implemented in vocational colleges, but the enterprise side does not seem to see the actual value. The development of national vocational education needs specialized and versatile talents, and schools expect the specifications of talents to be cultivated to be recognized by the society, and expect to achieve landmark achievements to measure the excellent quality of talent training, with a wide range of training. For different positions will set up corresponding courses to support the employment probability of students; Enterprises only select the right candidate for a job, but not necessarily consider whether the person has X certificates, which makes the X certificate may not be valued in the enterprise, the holder will ask the school to urge students to take it what is the meaning?

In addition, the depth of cooperation between the two sides in technology, talent, software and hardware resources is not enough. As far as enterprises are concerned, they have strong technical force and market resources, but the personnel’s further study and training are subject to various difficulties, lack of time and space is a common problem, schools have superior teachers and hardware and software supporting service ability, college teachers have winter and summer vacation time, lack of opportunities to work in the frontline of enterprises, if both sides can make full use of these resources, In the technical research, product processing and sales, skills competition, vocational certification and skills appraisal, horizontal topic cooperation and other aspects to explore a number of ways of deep cooperation, it will be mutually beneficial and win-win real cooperation. For example, in the practical skills teaching of teachers in the school, front-line technical personnel can be invited to the school or video demonstration of the practical application of the knowledge point. If conditions permit, teachers and students can go to the grassroots level together, the front line, and truly feel the fun of practical learning; When the enterprise is limited in time and the personnel unconditionally systematically learn theoretical knowledge, the school teacher can transfer the classroom to the workshop or the factory, and only a few teachers can solve the training problem of hundreds of thousands of people. It is best to have face-to-face training offline, with centralized learning places. If conditions permit, workers can enter the campus in batches, both in terms of sensory and learning experience. The combination of work and rest, the change of scenery will certainly receive unexpected effects; Thirdly, in the research of horizontal topics, both schools and enterprises need to complement each other’s advantages, share resources, jointly tackle

difficult problems, draw on each other's strengths and concentrate on breaking through the technical bottlenecks of enterprises and filling the gaps in the scientific research of schools. Such cooperation is positive, has social benefits and can serve the society better. The school has stepped out of the dilemma of improving professional social service ability, promoted the quality of talent training to a high and better development, and really boosted the take-off of deepening course teaching and post practice.

Finally, "certification, competition, school and enterprise need a platform for mutual recognition". Integrating the education mode, taking the construction of professional courses as the core and the national skills competition as the benchmark, the school fully innovates and reforms the education and teaching mode, the talent training program is jointly agreed by the school and enterprise, the professional teaching drives the X certificate examination, the exchange of certificates and competitions, and the construction of the school and enterprise, so that the talent training program can be "tailor-made" and the talent training can become the "passing project" of the whole society. The school is the cradle of talents, the society is the melting pot of talents, in the setting of the certificate is a step increase, the primary stage, the intermediate stage, the senior stage is like a lighthouse of different miles to guide the growth direction of talents. The whole society mutual recognition, to avoid the technical talent in a place to change a place is not recognized, credit bank records a person's growth track, the lack of this platform and other platforms mutual recognition approach, to the user brings a lot of inconvenience.

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