

Cultivation of Innovative Architectural Talents under the New Generation of Information Technology

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Keywords: Information Technology; Construction Talents; Cultivation Strategy; Information Intelligence Algorithm

Abstract: With the improvement of economic level, China's construction industry has also achieved rapid development. At the same time, the progress of science and technology also makes our country enter a new generation of information technology era. The new situation of The Times also puts forward new requirements for the development of the construction industry, namely, the innovation of the construction industry. Innovation in the construction industry depends on innovative construction talents. However, the current situation of cultivating innovative architectural talents in China is not optimistic. Architectural talents lack innovative ability and innovative thinking, which seriously hinders the innovative development of the construction industry. Therefore, under the situation of the new generation of information technology, it is an urgent problem to cultivate innovative architectural talents. In this paper, in combination with a new generation of information technology background, first of all, the concept of a new generation of information technology has carried on the summary of relevant content and characteristics, and with the help of information intelligent algorithm, the innovative construction of personnel training present situation has carried on the thorough analysis, based on this puts forward a new generation of information technology under the cultivation of the innovative building talent strategy.

1. Introduction

With the rapid development of the current level of science and technology, China has gradually entered a new generation of information technology era. At present, the influence of information technology in the whole China and even the world far exceeds that of other sectors [1]. On the basis of the new generation of information technology, a series of research results have been turned into real productivity at a rapid speed, which has greatly promoted the development of the world economy and the progress of the scientific level [2-3]. At the same time, the new generation of information technology has also strengthened the international competition trend. The new generation of information technology is a typical knowledge-based industry dominated by innovative knowledge, which is a concentrated demonstration of technological innovation ability and related to the overall competitiveness of the country [4]. Therefore, in order to improve the international competitiveness, it is necessary to take the new generation of information technology as the leading role and constantly cultivate innovative talents. The comprehensive level and capability of innovative talents as well as the number of innovative talents are closely related to the international competitiveness of a country's information. Therefore, it is urgent to accelerate the cultivation of innovative talents [5-6].

With the continuous development of the new generation of information technology, its penetration of the field is also expanding. The current has deeply affected the construction industry. The construction industry plays an important role in economic development to ensure the smooth operation of the economy [7-8]. At present, the development of China's construction industry is also faced with some problems, mainly the lack of innovation in architecture, which to some extent hinders the healthy and sustainable development of the construction industry [9]. Therefore, in order to promote the sustainable and healthy development of the construction industry, it is necessary to strengthen the cultivation of architectural innovative talents. Under the situation of the new generation of information technology, how to make the cultivation of innovative architectural

talents meet the development needs of the information technology era is an important subject that people need to conduct in-depth research [10-11]. At present, scholars at home and abroad have done a lot of research on the cultivation of innovative talents under the new generation of information technology, but it has not been specific to the cultivation of innovative architectural talents. In this respect, there is still a theoretical gap in the cultivation of innovative architectural talents under the new generation of information technology. [12 -13]

In order to make up this gap, this article in the context of a new generation of information technology, the concept of a new generation of information technology has carried on the summary of relevant content and characteristics, and with the help of information intelligent algorithm, analyzes the present situation of the cultivation of the innovative architectural talents, based on this puts forward a new generation of information technology under the cultivation of the innovative architectural talents strategy[14-15]. On the one hand, it promotes the rapid cultivation of innovative building talents in China, which makes the speed of talent cultivation coordinated with the speed of development in the information age. On the one hand, it also provides a certain theoretical basis for future research on related aspects.

2. Method

2.1 Overview of the New Generation of Information Technology

The new generation of information technology is put forward on the basis of network information technology, including six aspects such as Internet of things, communication technology network and new flat panel display. The proposal and development of the new generation of technology aims to promote the security and further integration of network information infrastructure, promote the r&d and industrialization of the new generation of key network equipment, terminal intelligence technology and the combination of three networks, and further strengthen the network information technology such as cloud computing. At the same time, the new generation of technology emphasizes the development of key network basic industries, improve the quality and level of network services, and constantly improve the technical level of virtual digital, to realize the continuous progress of the creative and cultural industry. The new generation of technology can effectively promote the transformation of the human way of life and realize the continuous upgrading of the industrial structure of the world. The new generation of information technology is a new thing produced by the combination of traditional information and the new era. It has a strong vitality. The second is information technology led by innovation, application and service; Third, the integration of technology, green and security and other aspects have been greatly improved.

2.2 Requirements and Connotation of Innovative Architectural Talents

Innovation is to break the conventional thinking mode and establish a new thinking mode on the basis of conventional thinking mode. Innovative talents can maximize the realization of thinking, consciousness, spirit, ability of innovation, and on this basis to achieve significant innovation results. Under the new generation of information technology, the requirements and connotation of innovative architectural talents mainly include the following aspects: first, knowledge structure is constantly updated to realize the effective integration of various knowledge and professional knowledge. The knowledge of the construction industry involves various aspects, and is closely related to the knowledge of art, economy, science and technology. Secondly, the comprehensive ability of architecture is characterized by creativity. The new generation of information technology is flexible and changeable, and the renewal cycle is very short. Third, the intense competition consciousness and the broad international vision. The new generation of information technology has intensified the international competition. As innovative architectural talents, they must always understand the world development trend and grasp the trend of The Times. Fourthly, the consciousness of market economy and creation should follow the trend of The Times and social development.

2.3 Information Intelligence Algorithm

Suppose the number of features extracted from the training data of innovative architectural talents under the new generation of information technology is m , which constitutes an original feature set $F=\{f_1, f_2... , f_m\}$ and m represent the initial number of features, because some features have little influence on the analysis result and can be ignored. If a feature is selected, its value is 1, otherwise its value is equal to 0. Therefore, the selected feature set can be analyzed and expressed with the help of binary form, that is, $S=\{s_1, s_2... , s_m\}$, s_i value is 1 or 0. The mathematical model formula for the selection of training characteristics of innovative architectural talents under the new generation of information technology is as follows:

$$S = \{s_1, s_2, \dots, s_m\}, s_i \in \{0,1\}, i = 1,2,\dots,m \quad (1)$$

In this paper, support vector machine is selected as the training algorithm for innovative architectural talents under the new generation of information technology. The decision-making mode for the training of innovative architectural talents under the new generation of information technology is as follows:

$$f(x) = \sum_{i=1}^n \alpha_i \gamma k(x_i, x) + b \quad (2)$$

In this formula, threshold b and it directly affect the training effect of innovative construction talents under the new generation of information technology, so they need to be optimized. From equations (1) and (2), it can be seen that there is a certain degree of correlation between feature and support vector machine parameters.

Green Convention and Exhibition refers to the comprehensive consideration of all aspects involved in Convention and Exhibition activities, including conference site, service, catering, accommodation, transportation, activities and material supply, based on the theory of circular economy. We should regard the conservation of resources and environmental friendliness of exhibition activities as a systematic project, so as to rationally develop and utilize various resources and protect the environment. By reducing pre-exhibition resources investment and effective utilization of renewable resources, strengthening the recycling of resources in exhibition, reducing the discharge of waste after exhibition, the harmonious development of exhibition economy and environment can be realized.

3. Experiment

The first step is data collection and recording. Collect the training data of current innovative architectural talents. The training data mainly includes the training contents, training methods, training methods and training effects. Especially the application data of the new generation of information technology in the cultivation of innovative building talents. The collection of training data must be comprehensive, and the training characteristics of innovative architectural talents under the new generation of information technology should be extracted, and their characteristics and original data should be recorded accurately.

The second step is to determine the threshold b and the value range of support vector machine. The particle swarm optimization algorithm of information intelligence algorithm is adopted to search the optimal threshold b and the characteristics of the new generation of information technology in the cultivation of innovative building talents, so as to determine the relevant data.

The third step is to use the optimal characteristics to process the characteristic data of the new generation of information technology in the cultivation of innovative building talents. The support vector machine adopts the optimal threshold b and training samples to study and establish the analysis model of the new generation of information technology in the cultivation of innovative building talents. Verification samples were used to test the accuracy of the analysis model of new-generation information technology in the cultivation of innovative building talents. Based on the analysis and collation of the obtained data, some problems existing in the cultivation of

innovative building talents in the current new generation of information technology are summarized.

4. Discuss

4.1 Current Situation of Cultivation of Innovative Architectural Talents

Through the above experiments and the analysis of experimental data, we can draw the conclusion that there are many problems in the cultivation of innovative architectural talents at present, which cannot meet the requirements of the new generation of information technology for innovative architectural talents. The specific experimental data are shown in table 1 and figure 1. The data in the chart is the result compiled by the author.

Table 1. Data of construction talent training

Education Concept	Proportion	Actual Effect	Role
Traditional Ideas	73.16%	43.21%	Block
Information Technology Concept	26.84%	56.79%	Promote
*Data came from sorting of algorithm results			

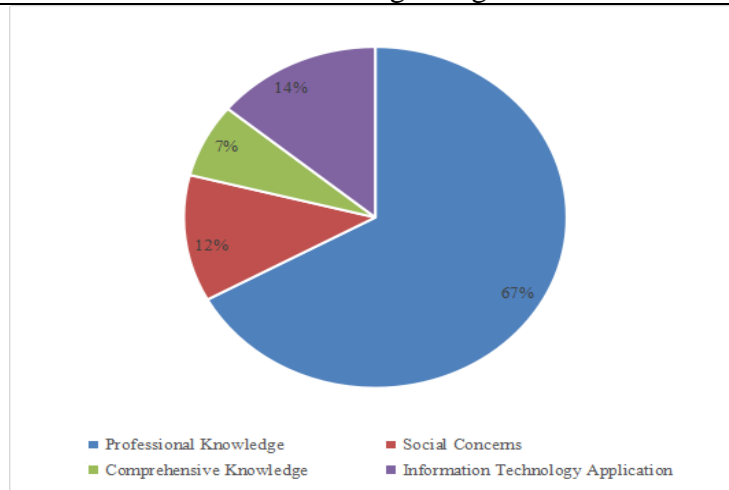


Figure 1. Capacity of construction talents

According to the data in table 1, we can see that the current educational concept is not completely updated. Situation in a new generation of information technology, while educators try to update education concept, but a radical shift in education concept need long-term effort, not a short period of time can change completely, and the education idea is correct test also need time to determine, so the construction type of the cultivation of innovative talents also behind the requirements of a new generation of information technology. At present, the teaching of architecture is still a teacher-student relationship dominated by teacher authority, which to some extent suppresses students' individuality and is not conducive to the development of architectural students' innovative thoughts.

According to the data in figure 1, it can be found that the educational goal of architecture specialty is somewhat out of line with the requirements of the new generation of information technology era. Under the new generation of information technology, students majoring in architecture are required to integrate network information technology with the development of architecture major and strengthen the application of network information technology in the construction industry. Therefore, the teaching of architecture major should not only teach students the theoretical knowledge of architecture, but also the network knowledge of relevant aspects, especially the improvement of creativity and innovation ability. According to the analysis of figure 1, it can be found that the current architectural teaching in China focuses on the cultivation of knowledge and skills, but pays little attention to the social and international trends, lacks

international vision, and has a narrow scope of knowledge, which limits the innovation ability of students. Secondly, the current architectural teaching only focuses on professional education and lacks comprehensive education and ability cultivation, which makes students' comprehensive ability weak and leads to their poor innovation ability.

4.2 Cultivation Strategy of Innovative Architectural Talents under the New Generation of Information Technology

(1) Specify the training target of innovative construction talents

The determination of the training objective is related to the specific training program and is in line with the development of The Times. It is closely related to the development of architecture profession and the social adaptability of talents. Architecture major involves many subjects and has strong comprehensive and diversified characteristics. At the same time, the individualized characteristics of education in architecture are obvious. All these make the cultivation of architectural talents have diversified characteristics. Therefore, in terms of the training objectives of architectural talents, it is necessary to combine the characteristics of the new generation of information technology and develop the training objectives in line with the development of innovative architectural talents according to their own advantages in running schools.

(2) Reform the education model

The comprehensive ability of students majoring in architecture is closely related to quality development and education mode, which determines the degree of realization of training objectives. The subject of architecture major is comprehensive, involving many subjects and many majors, which cannot be solved by the closed education mode. Therefore, in order to cultivate innovative architectural talents, it is necessary to change the education mode from closed to open, take the new generation of technical education ideas as the guidance, and take the development of innovation ability as the core of talent training. If we want to change the educational mode, we must change it comprehensively from the following aspects: first, we must realize the renewal of the educational concept. First, we must change the educational concept. The transformation of educational concept is the foundation of the transformation of educational mode. In the cultivation of innovative architectural talents, we must transform the traditional teaching methods, take information technology as the guidance, and create an open and innovative learning environment. The second is to reform the curriculum. The teaching of architecture specialty should strengthen the integration of multiple subjects and realize the communication and cooperation among different subjects. While carrying out professional knowledge education of basic theory, students' personality can be developed to the greatest extent to realize the coordinated development of knowledge ability and quality. Third, change teaching methods. When teaching architectural knowledge, teachers should combine the new generation of information technology with it, and apply the advanced network technology to the actual teaching, so as to replace the traditional teaching methods.

5. Conclusion

The new generation of information technology puts forward new and higher requirements for the cultivation of architectural talents. Training innovative building talents is determined by the specific situation and characteristics of the new generation of information technology. In order to cultivate the architectural talents who meet the requirements of the new generation of information technology, it is necessary to improve and explore them from various aspects and combine them closely with the real times. At the same time, we must realize that the cultivation of innovative building talent is a difficult long-term work, must make unremitting efforts to achieve.

Acknowledgments

This article is supported by the National Study Abroad Fund "2016 Higher Education Teaching Law to study abroad project" (project number: stay blonde [2016] 5054) ,
Guangdong Brand Specialty Construction Subsidy Project (Grant No. 2016gzpp016),

Educational reform project of guangdong provincial department of education (project number: GDJG2019252)

Guangzhou City Construction College Key Project (Grant No. ZD201801)

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