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"1+X" Course Certificate Fusion and Environmental Design Professional Training Quality Evaluation Model Based on Big Data

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Abstract: With the rapid development of modern science and technology, the "1+x" characteristic curriculum reform based on big data has received widespread attention from all walks of life in recent years as a phased and landmark achievement of my country's basic education reform. Oriented by cultivating talents that meet the needs of today's society, with the goal of environmental design related vocational qualification certificates, the main course teaching of the main teacher is the leading, environmental design guidance skills as the core competence, vocational skills training as the main line, and qualification verification. It is closely integrated with course teaching to realize the improvement of teaching quality and the construction of an evaluation model for the training of professional talents. The purpose of this article is to study the "1+X" course certificate fusion based on big data and the construction of the quality evaluation model of environmental design professionals. This article mainly uses literature data method, questionnaire survey method, mathematical statistics method, comparative analysis method, logical analysis method and other research methods to study the environmental design students and graduates of a university in this province, and first defines the quality of talent training Monitoring system, sustainable development, quality standard research and stakeholder theory and other related concepts, analyze the composition of monitoring indicators for the quality of personnel training in secondary vocational schools, and build the "1+X" course certificate integration based on big data and the training of environmental design professionals Quality evaluation model. The results show that after the construction of the "1+X" course certificate integration based on big data and the construction of the environmental design professional talent training quality evaluation model, the employment rate has increased significantly. This is the best proof of the strong competitiveness of the students, indicating that the students are still It is more recognized and welcomed by enterprises, and the higher employment rate shows that the quality of talent training is also higher.

1. Introduction

The progress of the country needs to rely on the development of higher education. Chinese colleges and universities undertake the important task of cultivating high-quality professional talents, and they must provide a steady stream of talents for the progress of the country and the development of society [1-2]. In the development process of colleges and universities, talent training is at the core of all functions of colleges and universities, and the quality of colleges and universities is also mainly reflected in the quality of talent training from the perspective of social needs. In order to improve the quality of talent training in colleges and universities, it is necessary to evaluate the quality of environmental design talent training. Carrying out such an evaluation is also a key link in deepening the comprehensive reform of colleges and universities [3-4].

In the research on the "1+X" course certificate integration based on big data and the construction of the environmental design professional talent training quality evaluation model, many seniors have conducted research on it and achieved good results [5-6]. In our country's research on the evaluation of talent training quality, its theoretical research is far beyond the actual operating conditions. This result is not only limited by the international political and economic environment and our country's unique national conditions, but also manifested in theoretical research[7-8]. In foreign countries, the evaluation subject has formed a way that focuses on social evaluation and participates in multiple evaluation subjects. In the evaluation system, it mainly includes a certification system and a ranking system, and its evaluation index system is relatively complete [9-10].

In terms of normative analysis, this article uses pedagogy related theories to construct an evaluation index system, analyzes the composition of the index system hierarchically, and then uses big data technology to construct evaluation data function modules, so as to carry out a big data evaluation model for the quality of university personnel training. Empirical analysis, through the collection and analysis of evaluation data to draw evaluation conclusions [11-12].

2. "1+X" Course Certificate Fusion Based on Big Data and Construction of the Quality Evaluation Model of Environmental Design Professionals Training

2.1. "1+X" Course Certificate Integration Based on Big Data and the Selection of Environmental Design Professional Talent Training Quality Evaluation Orientation

(1) Academic orientation

The academic orientation is based on the evaluation concept established based on the "1+X" course certificate integration based on big data and the development of environmental design professionals, emphasizes the role of the "1+X" course certificate integration based on big data and the cultivation of environmental design professionals in the exploration, development and inheritance of talent training, and pays attention to the academic value of higher education.

(2) Social orientation

Social orientation mainly refers to the degree to which the "1+X" course certificate integration based on big data and the training of environmental design professionals meet social needs, that is, the "1+X" course certificate integration based on big data and the training of environmental design professionals Whether the talents provided meet the needs of the country and society. Compared with the internal adaptability of academic orientation, social orientation more reflects the external adaptability of "1+X" course certificate integration based on big data and the cultivation of environmental design professionals. People's "1+X" course certificate integration based on big data

and the cultivation of environmental design professionals need to adapt to the development of society and cultivate useful talents for the country. This is the embodiment of social orientation.

(3) Humanistic orientation

Humanistic orientation refers to the integration of "1+X" course certificates based on big data and the cultivation of environmental design professionals mainly to meet the construction of students' subjectivity and individual development of students, emphasizing the subject status of students, and paying attention to students' minds perfect and rational construction believes that the fundamental value of education lies in the realization of human development.

2.2. "1+X" Course Certificate Integration Based on Big Data and the Design of the Quality Evaluation Index System for the Cultivation of Environmental Design Professionals

(1) Design principles of evaluation indicators

1) Principles of scientificity and comprehensiveness

Scientificity is the first principle of the evaluation index system design, that is, the entire "1+X" course certificate integration based on big data and the development of environmental design professionals. Evaluation index system from elements to structure, from the design of index content to the calculation of index weights all must be scientific, reasonable and accurate.

2) Principles of orientation and development

The two important functions of the "1+X" course certificate integration based on big data and the quality evaluation of environmental design professionals are to guide the development of environmental design students in the direction of education and to diagnose the problems in doctoral education. Data "1+X" course certificate integration and environmental design professional talent training quality evaluation index system needs to consider whether the design and evaluation of each index can better guide the "1+X" course certificate integration and environmental design based on big data. Whether the continuous improvement of the quality of professional talent training can play its diagnostic role in the "1+X" course certificate integration course, and discover the possibility of each link of the "1+X" course certificate integration based on big data and the quality of environmental design professional talent training existing problems and deficiencies, and promptly promote reforms and adjustments.

3) Principle of combining quantitative and qualitative

Quantitative evaluation focuses on educational measurement, emphasizes quantitative calculation, and has the characteristics of standardization, objectivity, and precision. Quantitative principles require that all indicators are measurable, while qualitative evaluations are mainly based on the evaluator’s observations, interviews, or analysis of literature data, and then describe and judge qualitatively, and draw qualitative conclusions. Qualitative evaluation often requires the evaluator to have a certain theoretical level and practical experience in order to better analyze and summarize qualitative data. As the "1+X" course certificate fusion based on big data and the quality of environmental design professionals are rich in connotation, the process of constructing the "1+X" course certificate fusion based on big data and the quality evaluation index system of environmental design professionals training , Quantifiable indicators must be clear. Some investigation factors cannot be quantified and can only be studied in a qualitative way.

4) Principles of operability and feasibility

The "1+X" course certificate fusion based on big data and the quality evaluation index system of environmental design professionals can only reflect the practical significance in specific implementation, and the "1+X" course certificate fusion based on big data must be integrated with

The quality evaluation index system for training environmental design professionals to play its role must meet the requirements of operability and feasibility on the basis of the information collection and quality evaluation capabilities of each evaluation index. Only when the evaluation index system is operability and feasibility, can it demonstrate the value of the principles of science, orientation, and development in quality evaluation.

(2) Design content of evaluation index dimensions

1) Input quality

Input quality, as the starting point for the "1+X" course certificate integration based on big data and the quality of environmental design professionals, affects the process quality, output quality and development quality of environmental professional personnel training to varying degrees. The input dimensions of the "1+X" course certificate integration based on big data and the quality of environmental design professionals training mainly include the following aspects: human resources, financial resources, material resources, etc.

2) Process quality

Process quality, as a component of the "1+X" course certificate integration based on big data and the quality of environmental design professionals, plays an important role in the individual development of environmental professionals. In the process of talent training, follow-up surveys are carried out to evaluate and judge the utilization of resources, feedback the implementation of talent training, and provide feedback information for the follow-up construction of talent training.

3) Output quality

Output quality refers to the ability, quality and knowledge reserves of environmental students at the point of graduation.

4) Development quality

Development quality reflects the quality of environmental students after graduation, which is an important criterion for testing the "1+X" course certificate integration based on big data and the quality of environmental design professionals.

(3) Establishment of evaluation index system

The "1+X" course certificate fusion based on big data and the construction and improvement of the quality evaluation index system for environmental design professionals are an important means to ensure the quality of doctoral education. "1+X" course certificate fusion based on big data and environmental design the quality evaluation index system for professional talent training should first have a good descriptive function: the evaluation index can comprehensively and accurately reflect the quality of doctoral education in China, and can also refer to the international "1+X" course certificate integration and environmental design based on big data. The development of the quality of professional talent training is to analyze the advantages and disadvantages of the "1+X" course certificate fusion based on big data in China; secondly, it has a scientific evaluation function: the evaluation index system is used as the evaluation scale of education quality; again, it is necessary Possess an effective monitoring function; the last is a prediction function.

2.3. "1+X" Course Certificate Fusion Based on Big data and Construction of Quality Evaluation Model for Environmental Design Professionals

In this article, there are only two levels of indicator composition. At the same time, the questionnaire data is sorted and surveyed, and there is no problem with small proportions. Therefore, this article decided to use the combined weighting method to calculate the weight, mainly using the equidistant weight calculation method and the proportional method. Calculate the weights of

indicators at all levels.

Specific steps are as follows:

(1) Calculation of equidistant weight

Using the equal distance weight calculation method, according to the level of each level of index, the level weight of each index is obtained, and the formula is as follows:

$$f_i = l - l \times \frac{1}{k-1} \times (k_i - 1) \quad (1)$$

Wheref_i is the weight of the i-th level, the total number of k-bit levels, and k_i is the i-th level.

(2) According to the proportional method, calculate the weight of each index according to the index data, the formula is as follows:

$$f_{ij} = \frac{n_{ij}}{N} \quad (2)$$

Where f_{ij} is the weight of the i-th level in the j-th index, n_{ij} is the number of the i-th level in the j-th index, N is the total number. The index weight formula is:

$$F_j = \sum f_i \times f_{ij} \quad (3)$$

In the formula, F_j is the weight of the j-th index in the index.

3. Based on Big Data "1+X" Course Certificate Fusion and Environmental Design Professional Personnel Training Quality Evaluation Model Construction Experimental Research

3.1. Research Object

In order to further understand the status quo of graduates after the construction of the "1+X" course certificate integration based on big data and the quality evaluation model of environmental design professional talent training, an online questionnaire was designed, and a questionnaire was conducted for graduates of environmental design major in a university in this province.

3.2. Research Methods

The questionnaire is mainly published online. The designed survey questionnaire was edited and completed on the website, and then the survey was released. In order to obtain a broader survey scope, the website was also distributed through other social means such as Moments, and a total of 164 valid questionnaires were collected.

4. Based on Big Data "1+X" Course Certificate Fusion and Environmental Design Professional Personnel Training Quality Evaluation Model Construction Experimental Research Analysis

4.1. Employment Rate of Environmental Design Graduates

The employment rate statistics of environmental design graduates were obtained from the employment guidance center of the school. The environmental design program began to recruit students in 2011, and the "1+X" course certificate integration based on big data will be implemented in 2020. The employment rate statistics table 1 is as follows shows:

Table 1. Employment rate statistics of environmental design graduates

Class	Number of graduates	First-time employment	First-time employment rate
Class of 2017	117	108	92.3%
Class of 2018	162	154	95.1%
Class of 2019	203	197	97.1%
Class of 2020	225	221	98.2%

Summarizing the above data, the initial employment rate of different majors is shown in Figure 1.

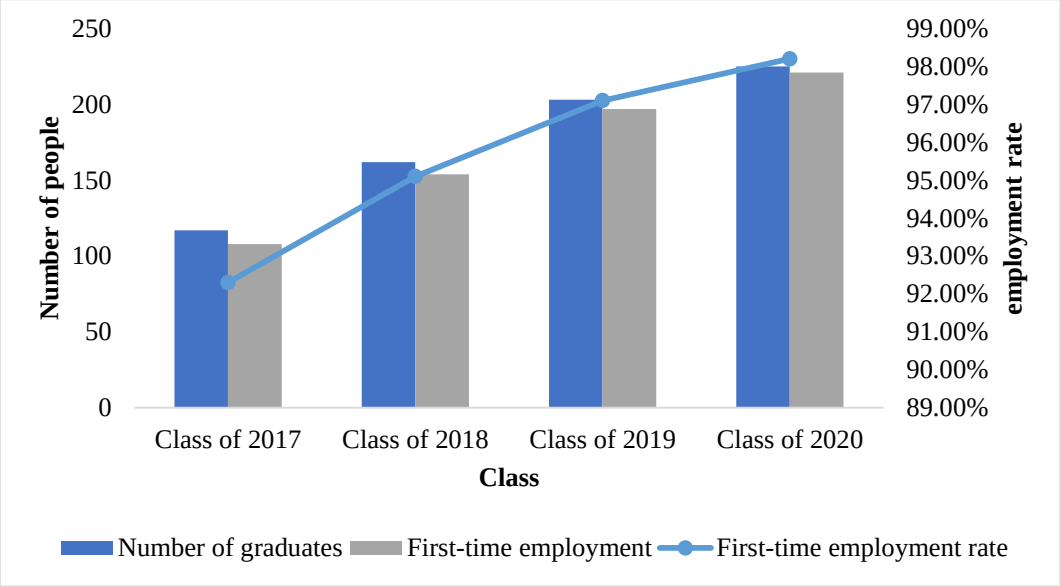

Figure 1. Employment situation of environmental design graduates

From the above table and figure, we can see that the average initial employment rate of graduates in the past four years has reached 95.67%, and the employment rate is relatively high. In the context of the expansion of college enrollment, many college graduates are under increasing employment pressure, and there are also differences in employment conditions. The current more comprehensive employment report document for college students is the employment blue book "China University Student Employment Report" issued by the Max Research Institute. The "Report" released the employment rate of college students half a year after graduation. It was 91.9% in the 2017 class, 91.6% in the 2016 class, 91.7% in the 2015 class, and 92.1% in the 2014 class. After the construction of the "1+X" course certificate integration based on big data and the quality evaluation model of environmental design professionals, the employment rate has risen significantly. This is the best proof of the strong competitiveness of students, indicating that students are still more affected by enterprises. The recognition and welcome of the school, and the higher employment rate shows that the quality of talent training is also higher, which is a recognition of the school.

4.2. Employment Quality Statistics of Environmental Design Graduates

This article uses the online questionnaire form to survey the graduates of the School of Architecture and Engineering in the past four years, mainly including the employment stability rate, job promotion rate, and job satisfaction. A total of 164 valid data of environmental design students of different grades have been obtained. The specific data statistics are shown in Table 2:

Table 2. Employment quality statistics of environmental design graduates

Class	Number of graduates surveyed	Employment stability rate	Promotion rate	Job satisfaction
Class of 2017	35	66.8%	43.5%	78.6%
Class of 2018	41	72.5%	32.4%	74.3%
Class of 2019	46	75.2%	38.2%	78.6%
Class of 2020	42	82.5%	52.5%	83.5%

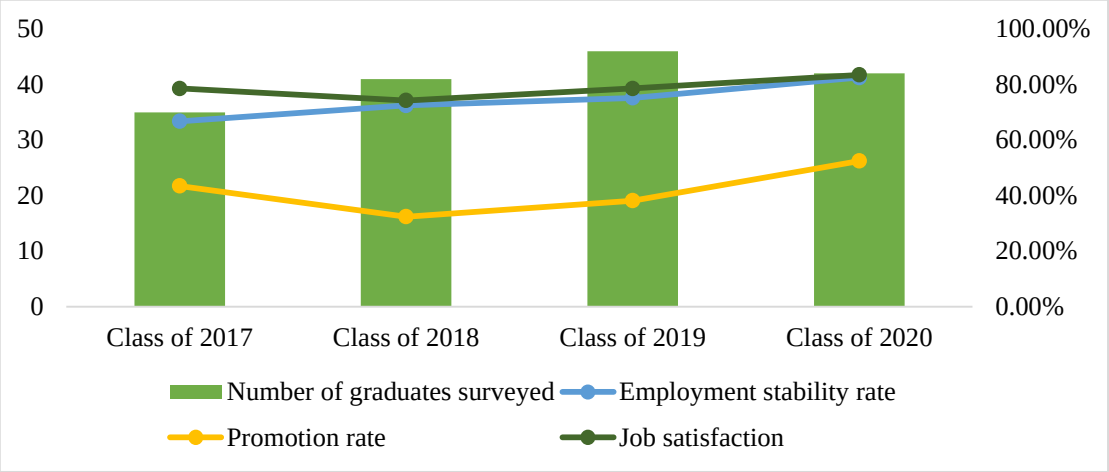

Figure 2. Employment quality statistics of environmental design graduates

From the data in Figure 2, we can see that the employment stability rate for the past four years is 74.25%, which is at a medium level, indicating that the stability of students in the workplace needs to be improved. The promotion rate is 43.5% in the first year of graduation, 32.4% in the second year, 38.2% in the third year, and 52.5% in the fourth year. Based on big data "1+X" course certificate integration and environmental design professionals After the establishment of the training quality evaluation model, the promotion rate has increased. On the whole, it is in line with the employment promotion trend of graduates. The promotion rate of 10.00% in the first year of graduation reflects that some graduates have relatively excellent professional abilities and are recognized by enterprises. The satisfaction of the current position is 73.70%, indicating that the graduates' recognition of the current position is in the upper-middle level, and they have strong adaptability.

5. Conclusion

At present, my country's economic development has entered a new normal, the world's economic development has entered a transitional period, and the world's technological development is brewing new breakthroughs in the development pattern. Countries are stepping up their competition for high-end talents. This is not only reflected in the high-tech talents, but also in the high-end manufacturing industry. In recent years, the country has been advocating the cultivation of craftsmen from big countries and shaping the spirit of craftsmen. Therefore, monitoring and evaluation of the quality of "1+X" course certificate integration and environmental design professional talents based on big data has been carried out to cultivate a large number of high-level environmental design for the country Professional technical skills talents have practical significance. With the gradual advancement of Made in China 2025 and the rapid development of high-end

manufacturing, experts and scholars are paying more and more attention to the research on the quality of technical and skilled personnel training, but due to the lack of systematic top-level design, objective and accurate basic data and cross-disciplinary integration. The results of the research show that the "1+X" course certificate fusion based on big data and the research on the quality of environmental design professionals have not yet made a historic breakthrough, and most of them are still based on the self-monitoring and evaluation of education itself, focusing on qualitative rather than quantitative research. It is not easy to conduct classification guidance on a macro level.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

References

[1] Lancaster R J, Mott J, Hendryx J. Integration of Quality Matters as a Graduate Course Assignment. Nurse Educator, 2019, 44(6):289-290. https://doi.org/10.1097/NNE.0000000000000638

[2] Lepkyi M I, Matviichuk L Y, Lysiuk T V, et al. A Model for the Development of High Quality Training of Tourism Professionals Through The Use Of Computer 3D-Tours. Journal of Geology Geography and Geoecology, 2021, 30(1):90-99. https://doi.org/10.15421/112109

[3] Groulx M, Lewis J L. Merely 'Design Marketing'? Professional Perspectives on the Use and Misuse of Environmental Visualizations in Community Engagement. Journal of planning education and research, 2019, 39(3):273-284. https://doi.org/10.1177/0739456X17739112

[4] Agost M J, Company P, Contero M, et al. CAD Training for Digital Product Quality: A Formative Approach with Computer-Based Adaptable Resources For Self-Assessment. International Journal of Technology and Design Education, 2021(3):1-19.

[5] Zaskaleta S. Trends of Professional Training of Specialists In European Countries: Quality Assurance (Iqa) System In Higher Education. Osvitolohiya, 2019(8):111-116. https://doi.org/10.28925/2226-3012.2019.8.111116

[6] Gola M, Brambilla A, Barach P, et al. Educational Challenges in Healthcare Design: Training Multidisciplinary Professionals for Future Hospitals and Healthcare. Annali di Igiene: Medicina Preventiva e di Comunità, 2020, 32(5):549-566.

[7] Leoto R, Lizarralde G. Challenges in Evaluating Strategies for Reducing a Building's Environmental Impact through Integrated Design. Building and Environment, 2019, 155:34-46. https://doi.org/10.1016/j.buildenv.2019.03.041

[8] MD Ruiz-Fernández, E Pérez-García, NM Ortega-Galán. Quality of Life in Nursing Professionals: Burnout, Fatigue, and Compassion Satisfaction. International Journal of

Environmental Research and Public Health, 2020, 17(4):1253. https://doi.org/10.3390/ijerph17041253

[9] Henry A W, Oladutire O E, Olutola A O. Anthropogenic Reporting and the Quality of Firms' Disclosure: A Study of Nigeria Banking Sector. Journal of International Cooperation and Development, 2020, 3(1):51. https://doi.org/10.36941/jicd-2020-0005

[10] Chernyak T. Quality of Vocational Training and Career of Hr Managers (In the Assessment of Graduates). Management of the personnel and intellectual resources in Russia, 2020, 9(3):27-34. https://doi.org/10.12737/2305-7807-2020-27-34

[11] Goryacha L O, Prokopenko T S, Nessonova M M. Results of the Implementation of Student-Centered Learning in the Training of Pharmacy Professionals. Management Economy and Quality Assurance in Pharmacy, 2020(2(62)):4-11. https://doi.org/10.24959/uekj.20.5

[12] Wang G, Ji F, Li H, et al. Revision and Analysis of the Training Program of "Chemical Engineering and Technology" Professionals based on Results-oriented -Taking Guilin University of Technology as an Example. Education Study, 2020, 2(4):260-266. https://doi.org/10.35534/es.0204026