Research on the Quality Evaluation System of Distance Education in the Digital Age

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ABSTRACT

In the digital age, distance education has a better medium, and distance education in the new era has been able to take advantage of high technology. Based on the definition of related concepts of distance education quality evaluation and the discussion and establishment of the principles of distance education quality evaluation system, a concrete and complete distance education quality evaluation system with tree-shaped structure as the framework is designed by using Delphi method. And it provides a forward-looking basis for the development of distance education. Using a scientific and reasonable quality evaluation system of distance education to evaluate distance education can objectively reflect the quality of distance education and promote its purposeful and focused improvement.

Keywords: Distance education, Distance education quality, Evaluation system.

1. INTRODUCTION

Digitalization, networking and informatization have become the labels of the times, adding brilliance to present splendor in all fields and opening up new fields at the same time. Networking and informatization have brought many new possibilities to distance education, and the era has also given distance education a new mission. According to the report of the 19th CPC National Congress, "Building an educational power is the basic project for the great rejuvenation of the Chinese nation. We must give priority to education, deepen educational reform, speed up educational modernization, and run education to the satisfaction of the people." At first, distance education was the realization form of continuing education and lifelong education. Later, it gradually became the embodiment of educational modernization. Considering the epidemic since 2020, distance education has been widely used and become an obligated substitute of face-to-face teaching under special circumstances. It is one of the future development trends of educational modernization. However, according to the practice, the teaching effect of distance education is sometimes inferior to that of face-to-face teaching. Some scholars

attribute this to the form of distance education itself. However, in this study, the researchers believe that improving the quality of distance education can improve the teaching effect of distance education to a certain extent. How to measure and evaluate the quality of distance education? In order to solve this problem, it is suggested to establish an evaluation system to reasonably evaluate the quality of distance education, so as to point out the direction for improving the teaching effect of distance education.

2. DEFINITION OF RELEVANT CONCEPTS OF DISTANCE EDUCATION QUALITY EVALUATION INDICATORS

2.1 Distance Education

Distance education refers to the teaching mode that with the use of television, Internet and other communication media, learners can receive education anytime and anywhere through television broadcasting, Internet and other channels [1]. Distance education has two basic characteristics. First, teachers and students are basically separate from each other permanently. Second, it has

different forms in different times [2]. Therefore, it has the characteristics of openness, flexibility and expansibility.

2.2 Quality of Distance Education

Education quality refers to the educational level and the effect degree. Finally, it is reflected in the quality of the training object. The standard of measurement is the educational purpose and the training objective of all kinds of schools at all levels. For the former, it stipulates the general quality requirements of the trainees, which are also the fundamental quality requirements of education. For the latter, it stipulates the specific quality requirements of the trainees, which is the quality specification to measure whether the talents are qualified [3]. Since distance education is a form of education and teaching and a branch of the education framework system, the definition of distance education quality can be developed into its own standard on the basis of education quality. Therefore, the definition of distance education quality should be the level and effect of distance education, which is evaluated from the perspective of the trainees.

2.3 Quality Evaluation Index of Distance Education

Distance education quality evaluation is the combination of qualitative evaluation and quantitative evaluation, which is derived from the concept of education quality. The qualitative evaluation is the evaluation of the general quality requirements of distance education trainees, and is also the evaluation of the fundamental quality requirements of distance education. And quantitative evaluation is the evaluation of the specific quality requirements of distance education trainees. The quality evaluation index of distance education is the parameter to evaluate its quality.

3. THE ESTABLISHMENT OF DISTANCE EDUCATION QUALITY EVALUATION SYSTEM

3.1 Establishment Principles of Distance Education Quality Evaluation System

3.1.1 Being Scientific and Applicable

The selection of evaluation indicators of distance education should be scientific and applicable. Any evaluation index needs to be

scientific and reasonable, and can objectively reflect the teaching effect of distance education. In addition, it is suggested to carry out the specific analysis of specific problems. And it mustn't copy other education evaluation indicators. Distance education has strong personality and distinctive characteristics, which is different from offline teaching. It needs a set of education quality evaluation system suitable for it.

3.1.2 Being Systematic and Comprehensive

According to the principles of evaluation, the depth and breadth reflected by an evaluation system should include or cover all the essential attributes of the evaluation object [4]. It is not only necessary to reflect the teaching effect of distance education in an all-round way from various perspectives, but also to have internal logic among various indicators, so as to form a complete, comprehensive and clear evaluation system.

3.1.3 Advanced Concept and Good Guidance

The original intention of formulating the evaluation system of distance education is to promote the development of distance education. Therefore, the establishment of evaluation system indicators should be guided by advanced concepts, with good guidance. Theory guides practice, and the results of evaluation are of guiding significance for the improvement of distance education. At the same time, the establishment of the evaluation system cannot be divorced from reality, but should be summarized from practice.

3.1.4 Being Open and Expandable

Distance education itself is the product of the development of science and technology and also develops with the development of science and technology. Therefore, the evaluation system of distance education needs to be open and expandable, and penetrate into the establishment of the framework and the selection of indicators, so that the system can be modified, added, and does not need to be reconstructed.

3.2 Framework Construction of Distance Education Quality Evaluation System

In this study, the framework of distance education evaluation system adopts a three-level

tree-shaped structure, with primary elements as root nodes, secondary elements as branch nodes, and the main inspection points as leaf nodes. Each branch of such a frame structure does not interfere with other branches, which is clear and easy to operate. The construction of the framework first outlines the design of several categories of standards for distance education evaluation, and determines the primary elements. Then, the primary elements are decomposed layer by layer, refining from the secondary elements to the main inspection points. Finally, the investigation is carried out one by one according to the main inspection points.

3.3 Specific Establishment of Distance Education Quality Evaluation System

3.3.1 Selection of Distance Education Quality Evaluation Elements

The subjective initiative of students receiving distance education plays a decisive role in this [5]. Based on the analysis and definition of the concept of distance education evaluation indicators, the research team of this study should start from two aspects in the selection of primary and secondary elements, namely,, distance education and teaching effect. And distance education itself can be evaluated from two aspects of hard power and soft power. In addition, in order to meet the principles of openness and scalability of the distance education evaluation system, sustainable development should be added on the basis of the original dimensions.

3.3.2 Using the Delphi Method to Establish a Distance Education Quality Evaluation System

The Delphi method, also known as the expert investigation method, is essentially an anonymous feedback inquiry method. The general process is to collect, summarize, and make statistics on the problems to be predicted after obtaining the opinions of experts, and then feedback anonymously to the experts, solicit opinions again, concentrate again, and give feedback again until unanimous opinions are reached [6].

The research team first established the first draft of the distance education quality evaluation system on the basis of the investigation, and then designed a questionnaire to conduct a questionnaire survey of experts. The research team listened to the opinions of experts and carried out the first round of revisions — adding the construction of majors at main inspection points. Afterwards, the research team designed a second questionnaire based on the results of the first round of surveys, and the research team carried out the second round of revisions based on the suggestions of experts — adding the research results and employment situation of the main inspection points, enriching and improving the evaluation of teaching effectiveness. After two rounds of discussions with experts, the research team determines that the final results are shown in "Table 1".

Table 1. Quality evaluation index system of distance education

Primary element	Secondary elements	Main inspection point	Weight score
Soft power of distance education	Strategy and philosophy	Whether the purpose and concept of running the school are in line with the original intention of distance education; whether it is far-sighted enough to contribute to its development.	4
		Whether there are clear development goals, reasonable short-term and long-term planning.	4
		Whether there is a feasible implementation plan.	2
	Teaching management and faculty	Whether there is a sound organizational management system; whether the relevant persons in charge participate in decision-making; whether each department has a clear hierarchy and division of labor.	6
		Enrollment management: whether it is standard enough from examination to admission; whether the number of students and major are in the plan; whether it meets the requirements.	4
		Educational administration management: whether there is a high-quality student information management system; whether there is a strict examination system and credit management system.	5
		Teachers: whether the teachers have the corresponding research and teaching qualifications and abilities; whether they can skillfully use distance teaching tools for teaching.	5
	Discipline construction and curriculum design	Discipline construction: whether the specialty is in line with the school-running purpose and concept; whether it has its own characteristics; whether it takes into account the characteristics of the times and social development; whether it has its own advantage of the major.	5
		Curriculum design: whether the curriculum design conforms to the professional planning; whether the type is comprehensive; whether there is a complete and detailed syllabus with clear ideas; whether the credit setting is reasonable.	5

Primary element	Secondary elements	Main inspection point	Weight score
The hard power of distance education	Teaching support	Teaching equipment support: whether all teaching equipment is available; whether the network is smooth; whether the platform is easily accessible; whether the communication and interaction is frictionless.	5
		Teaching resources: whether teaching courseware can be easily uploaded and downloaded; whether the course can be automatically recorded for students to watch and replay; whether a digital library has been established and whether teachers and students can easily access the materials inside and outside the station.	5
	Teacher support	Human resource support: whether the recruitment is standardized and procedural; whether there is talent planning and career design; whether there are skills training related to the use of software and hardware in distance education; whether there is a performance evaluation and reward mechanism.	5
	Student support	Enrollment support: whether it can provide guidance and advice on students' choice of major and entrance examination.	2
		Learning support: whether there are advanced evaluation, scholarship and other encouragement mechanisms; whether it sets up grants for poor students.	2
		Employment support: whether it provides guidance and advice to students on employment; whether it actively provides internship and employment channels.	1
Primary element	Secondary elements	Main inspection point	Weight score
Teaching effect	Satisfaction	Students' evaluation: students' evaluation of the teacher, including whether there is good interaction; students' evaluation of the teaching platform, including whether it is easy to use; students' evaluation of teaching assistance.	10
		Social evaluation: employers' evaluation of graduates; social response to school-running effect.	5
	Academic and teaching achievements	Research achievements: research achievements at different levels; the number of academic papers published; whether there is publication, books and so on by themselves.	10
		Employment status: whether the employment rate meets the requirements.	5
Sustainable development	Soft power development	Whether training and further study arrangements are available to support teachers' teaching development.	3
		Whether it encourages scientific research and teaching innovation; whether there is corresponding reward mechanism.	2
	Hard power development	Whether the software and hardware of the platform are open and extensible.	5

4. CONCLUSION

Distance education has attracted more and more attention from the society. Especially, during the epidemic, it has played an irreplaceable role in offline teaching. The quality of distance education is directly related to the future of students. The quality evaluation of distance education has increasingly become a topic worthy of discussion. This study firstly defines and deeply interprets the three key words of distance education, distance education quality and distance education quality evaluation. Then it discusses and establishes the principle of establishing the quality evaluation system of distance education. After that, the framework of distance education quality evaluation system is designed with the use of the tree-shaped structure of data structure. Using the Delphi method, the specific design of the distance education quality evaluation system is finally established after repeated discussions and revisions with experts. It is believed that, through scientific and reasonable quality evaluation, distance education will continue to grow and improve, so as to better cultivate talents and serve the society.

AUTHORS' CONTRIBUTIONS

Zhiyong Dong wrote the manuscript, and Boya Zhou analysed data.

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