Mathematical Model Construction of Teaching Standard System in Colleges and Universities

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Abstract: The mathematical model of the teaching standard system of colleges and universities is the main component of the teaching activities, and it is the main means to improve the teaching effect. It is conducive to accurately reflecting the teaching quality of educational institutions and facilitating the teaching staff to provide basic feedback information. Therefore, based on the traditional teaching standards system of colleges and universities, this paper analyzes the necessity of the mathematical model construction of the curriculum standard system of colleges and universities, innovates the mathematical model of the curriculum standard system of colleges and universities, and puts forward the basic principles of model implementation. The quality of teaching is of great significance.

1. Research Background

1.1 Literature review

The quality of the “Management Information System” course is closely related to the improvement of students' innovative ability. By correctly evaluating the implementation effect of the system and constructing a new curriculum teaching model, it is of great significance for the development of teaching activities in colleges and universities (Wang and Liu, 2013).As an important part of teacher's teaching quality evaluation, students' evaluation of teaching can accurately reflect the quality of teaching in colleges and universities, and use the factor analysis method in multivariate statistics to construct the mathematical model of teaching evaluation of teaching, which can replace the connotation of teaching thought (Ma et al, 2014). As the main link of higher education activities, classroom teaching quality evaluation is of great significance for the improvement of higher teaching quality. By analyzing each teaching index and establishing a mathematical model of the higher standard teaching standard system, it plays an important role in the development of teaching activities in colleges and universities (Tang, 2013).Scientific evaluation of teachers' teaching is the basic means for higher education to a professional development path.By analyzing the current teaching characteristics, using fuzzy math fart method, combined with the actual situation of college teaching, constructing a fuzzy teaching mathematical model and proposing corresponding implementation path is conducive to the reform of traditional teaching methods (Song, 2005).

1.2 Purpose of research

Since the 21st century, the globalization of the world economy has become a versatile development trend. The internationalization of higher education has gradually become a necessary result of economic globalization (Liu, 2009).In the context of the internationalization requirements of higher education, how Chinese higher education is in line with world education to meet China's economic construction and social development has become one of the urgent issues to be considered in the relevant education field (Duan and Liu, 2018).Since the continuous enrollment activities in 1999, China Education has gradually moved from elite education to mass education, and educational activities have once again risen to a new level, showing a leap-forward development trend. However, with the expansion of the enrollment scale of Chinese colleges and

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universities, the threshold for enrollment of students has gradually decreased, and the number of enrolled students has shown a downward trend.The teachers in colleges and universities are weak, and the problem of insufficient infrastructure construction has gradually emerged. The effective development of educational activities in higher education institutions poses a potential threat. Therefore, the construction of teaching standardization system has gradually become the core issue of higher education.In this context, this paper analyzes the necessity of constructing the mathematical model of the curriculum standard system in colleges and universities, innovates the mathematical model of the curriculum standard system of colleges and universities, and puts forward the basic norms of model implementation, which is of great significance for improving the quality of higher education.

2. The Necessity of Constructing Mathematical Model of Teaching Standard System in Colleges and Universities

2.1 The pressure of the popularization of higher education for schools

Since the expansion of the enrollment of ordinary colleges and universities in China in 1999, the number of students has gradually increased. Moreover, after the 10th Five-Year Plan, the rate of enrollment in Chinese colleges and universities has increased significantly. According to international standards, higher education is a popular education (Zhao and Cheng, 2011).With the escalation of residents' awareness of education and the massive expansion of students' scale, higher education has gradually become popular. Under this background, the development speed of higher education has gradually accelerated. While satisfying the development of society and national economy, it has also satisfied the cultural and material needs of the masses to a certain extent.However, under this extraordinary development model, the pressure for higher education can not be ignored. For example, due to the rapid expansion of students' scale, the dormitory area of the school has increased significantly. It is difficult for educational instruments and equipment to keep up with the pace of school education in a short period of time. The existing teachers and books in the school cannot meet the requirements of the majority of students. The quality of teaching has dropped significantly.Under this background, relevant educational institutions should base on the basic education facts, and through the in-depth analysis of the existing teaching system, construct the mathematical model of the curriculum standard system of colleges and universities, and provide reference for the development of college education.

2.2 The influence of international education industry on Chinese higher education

Since China joined the WTO, some of its cultural concepts have gradually been accepted by Western developed countries. In the information age, the traditional concept of education has clearly failed to keep pace with the development of the times. Affected by this, the industrialization of education has gradually been proposed, and the concept of educational industrialization has gradually been accepted by the public.With the addition of foreign education knowledge, education and the economy have basically merged into a state of integration. The development trend of economic global integration will inevitably lead to the development of China's education industry in the direction of globalization. Moreover, the WTO has opened the education market to the outside world and included it in the relevant provisions of cooperation between countries.The opening up of the economy will inevitably require talents to adapt to the development of the times and conform to the country's opening up and development pattern. This puts new demands on the Chinese education industry, and it is bound to require the construction of a curriculum teaching standard system in the field of higher education.

2.3 Social development puts new demands on higher education

With the advent of the era of knowledge economy, the results of social-related industries are constantly facing the status of adjustment and upgrading. In this context, colleges and universities are required to continuously optimize and adjust the talent training model and curriculum structure

to meet the new requirements of the current era. Under normal circumstances, in the context of rapid social development, institutions of higher learning should reform from the aspects of discipline construction, curriculum reform, teaching management, teaching methods and teaching content, and use existing teaching resources to enhance the comprehensive teaching level. At the same time, institutions of higher learning should base on the current teaching resources, analyze the faculty under different structures, adjust and optimize the faculty based on the background of different professional developments, improve the level of faculty construction, and improve the quality of education in colleges and universities to ensure The compliance and practicality of the talent training method.

3. Mathematical model of teaching standard system in colleges and universities

By analyzing the curriculum structure of colleges and universities, starting from six dimensions, the mathematical model of the curriculum standard system of colleges and universities is constructed, as shown in Figure 1. Among them, the six dimensions are professional literacy, personal traits, personal charisma, personal knowledge, teaching philosophy and professional skills.Among the different dimensions, because there are individual differences among different students, it is necessary to conduct an in-depth analysis of the indicators in the six dimensions. As far as the professional literacy dimension is concerned, students are generally required to have corresponding job literacy. The indicators include “considering the relatively comprehensive work”, “the company and position that loves oneself”, “the courage to take responsibility in the work process”, and “having a certain dedication”.Different indicators have different requirements for students. In the actual application process, relevant institutions of higher learning can make appropriate adjustments according to actual conditions.

In terms of personal traits, personal traits mainly require higher education curriculum standards system to highlight the basic characteristics of students. Using mathematical thinking, by analyzing the current basic requirements of students for students, students' personal traits are required to have certain enterprising spirit, pioneering spirit, helpful spirit, and basic ability to solve problems and think. Because different indicators are students' own factors, they are included in the personal trait dimension.

In terms of personal glamour dimension, personal charm is to some extent an indication of the influence of teachers. It generally includes four indicators, which are to give people a positive spirit, to solve the students' practical problems by their own ability, to understand the students' related behaviors, and to provide timely guidance to the students. Different indicators can reflect the ability of teachers to solve practical problems, and they all reflect the personal charm and influence of teachers.

As far as the individual knowledge dimension is concerned, it generally includes the basic knowledge of teachers and students, reflects the coverage of teachers' knowledge, and the mastery of students' knowledge. It is the basic indicator to consider the quality of teaching. As far as the dimension of teaching philosophy is concerned, it is the basic policy for higher education in schools. Generally, higher education focuses on comprehensive education in five aspects: morality, intelligence, art and beauty. It is committed to cultivating high-end talents of comprehensive and applied styles, reflecting the basic requirements of current society for college students. . As far as the professional skill dimension is concerned, in addition to the basic knowledge, professional skills are another criterion for the evaluation of teachers and students by relevant educational institutions, reflecting the professional competence of teachers and students, as well as the level of special skills.

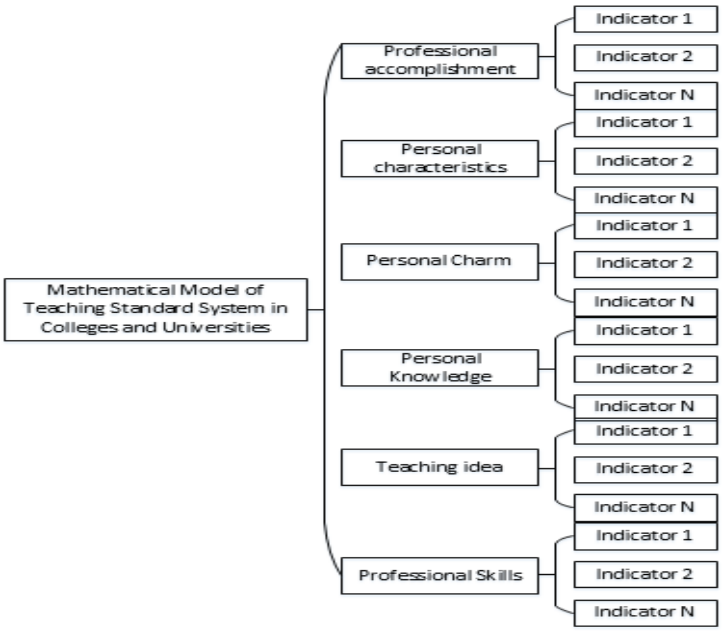

Figure 1. Mathematical Model of Teaching Standard System in Colleges and Universities

4. Basic Principles for the Implementation of Mathematical Models for Teaching Standard System in Colleges and Universities

4.1 Basic criteria for maintaining intermediation independence

The implementation of the mathematical model of the teaching standards system of colleges and universities needs to be attached to the overall planning of the government, social groups and related universities. Institutions of higher learning should comprehensively absorb the participation of different people in the society in the reform of educational methods while implementing the mathematical model of the teaching standards system of higher education institutions. Objectively and comprehensively evaluate the basic teaching status of the school, and make basic value judgments for some teaching activities and quality.Therefore, when implementing the mathematical model of the teaching standards system of colleges and universities, colleges and universities need to use intermediary independence as the basic principle, and regard independent intermediaries as the basic lifeline of educational activities, which is conducive to maintaining the maintenance of different intermediaries in educational activities. Role, otherwise it will lead to a reduction in the fairness and fairness of education.

4.2 Basic guidelines for broad participation

As a professional entity organization, colleges and universities cannot rely on the physical organization of the school when implementing the mathematical model of the curriculum standard system of higher education. In the specific implementation process, institutions of higher learning shall set up the highest authority for the implementation of the mathematical model of the curriculum standards system of higher education institutions in the basic organizational structure. Relevant members shall be composed of teachers of the school or hire social professionals. At the organization, there are a number of basic policy committees that can be used to undertake the basic work of the institution. In the specific work process, relevant personnel in the organization should continuously evaluate the implementation of the mathematical model of the teaching standards system of higher education institutions according to the actual teaching situation, and make timely rectification according to the problems that arise, which is conducive to the promotion of higher education institutions. The effectiveness of the mathematical model of the teaching standards system, and then improve the education level of higher education.

4.3 Maintain basic principles of science and practicality

The implementation of the mathematical model of the teaching standards system of colleges and universities must first obtain the recognition of the public. Therefore, when implementing the mathematical model of the teaching standard system of colleges and universities, colleges and universities need to continuously improve the professional, scientific and practical nature of the model. The educational evaluation interactions of colleges and universities must be related to social science and meet the development direction and actual requirements of relevant educational institutions. When the school vigorously promotes the mathematical model of the teaching standard system of colleges and universities, it is necessary to strengthen theoretical research. If necessary, it can set up a professional evaluation team, or create a corresponding teaching evaluation information network and database to evaluate the mathematical model of the teaching standard system of higher education institutions. The scientific nature of implementation is conducive to expanding the influence of the mathematical model of the teaching standards system of higher education institutions on society and establishing an authoritative image for university teaching.

4.4 Basic principles for maintaining standardized operations

Under the background of the gradual expansion of the opening up pattern, Chinese educational institutions are gradually seeking cooperation on advanced foreign subjects to enhance the influence of Chinese education from different angles. On the objective level, colleges and universities implement the mathematical model of the teaching standards system of higher education institutions, which is required to be recognized by relevant international organizations and be recognized by relevant educational international exchange institutions, so as to provide reference for relevant educational institutions. Therefore, the implementation of the mathematical model of the teaching standards system of colleges and universities must follow the standardized operation path, which includes the standardization of educational evaluation activities and the planning of the education system. Require relevant teaching activities to meet the requirements of higher teaching. Of course, the implementation of the mathematical model of the teaching standards system of colleges and universities requires the supervision of the government and relevant institutions, and the standardization of operations has become the basic norm for the development of educational activities, which is conducive to improving the quality of teaching in higher education institutions and laying a good foundation for the development of teaching activities in colleges and universities.

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