Research on Reconstruction of Curriculum System of Music Performance Specialty in Colleges and Universities Based on Data Characteristics

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Abstract: Music performance major is a traditional discipline in Colleges and universities, especially in music colleges and universities. Under the comprehensive action of many external forces, it is receiving unprecedented challenges. Under the background of the new era, the reform of music performance education in Colleges and universities is imperative. As the core part of educational reform, the reform of curriculum system is of great significance. Curriculum objectives, curriculum structure, curriculum content, curriculum implementation and curriculum evaluation affect the specification and quality of music performance talent training alone or jointly. Based on the data characteristics, this paper selects the reconstruction of the curriculum system of music performance specialty in Colleges and universities as the research problem. There is no doubt that the existing curriculum system of music performance major in Colleges and universities in China has its rationality and social value, but the researchers firmly believe that the curriculum system armed and guided by new ideas is a curriculum system with richer meaning, more balanced structure and more humanistic, developmental and contemporary.

1. Introduction

As an important part of social and cultural undertakings, the diversified value of music performance has long been recognized by the public, and its role in many fields of social politics, economy, culture and life is expanding day by day. As the core of music career, music performing talents are not only an important component of the development of music career, but also the driving force to directly promote the development of music career [1]. However, when things go to extremes, they will turn against each other. Due to the relatively excess demand for talents caused by the massive enrollment of music performance majors, the obvious decline of talent quality, and the impact of TV, home theater and computer network on the traditional music performance career, the development of music performance Majors is difficult, The times also put forward higher standards and requirements for the comprehensive quality of music performers. Therefore, as a higher education for training a large number of music performing talents, relevant reform is imperative [2]. As the carrier of music performance talent training, music performance professional curriculum is not only the concrete manifestation of the training specifications and requirements of music performance talents, but also the necessary condition to achieve the goal of talent training. Therefore, the reform of the curriculum system of music performance specialty in Colleges and universities is imminent, and will inevitably become the top priority of the overall reform of music education in Colleges and universities. In short, due to the logical development of China's music performance and music education in Colleges and universities, the transformation of society's demand for compound professionals in music performance and the fierce competition in the talent employment market, we have to face and examine the curriculum system of music performance major in Colleges and universities again [3].

2. Analysis Method of Data Characteristics

Data mining, also known as discovering data features in database, originated in the 1990s. It is a

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vigorous frontier discipline in the field of database system and database application. It is mainly a process of mining useful information and data features hidden in a large number of incomplete, noisy, fuzzy and random practical application data [4]. It includes the extraction, transformation, research and modeling of a large number of data in the database, so as to extract the key data features that are helpful for decision-making. Data mining is to find the rules through the analysis of sample data, obtain the implicit characteristics of data, and help decision-makers predict the trend. The process of data mining is a process of highly abstracting and summarizing the internal and essence of data. It is a process of promoting data from rational knowledge to perceptual knowledge. Data mining is also a comprehensive subject. It is a new technology based on database, artificial intelligence, machine learning, neural network, statistics, pattern recognition, high-performance computing and so on. Therefore, in the field of data mining, many researchers in different fields have been absorbed, and scholars and engineers and technicians including database technology, artificial intelligence technology, mathematical statistics, visualization technology and parallel computing have been introduced to study and explore the preface technology of data mining, which has become a new technical hotspot.

With the continuous progress of science and technology, all walks of life begin to use databases for large-scale data storage, which also makes the field of data mining develop rapidly. Due to the strong advantages of data clustering algorithm in analyzing and dealing with the problems of lack of background knowledge, it has become the most widely used technology in the field of data mining. Because the traditional clustering algorithm is usually limited to the field of machine learning and statistics when dealing with data problems with huge amount of data and complex structure, it rarely involves the input and output problems caused by the amount of data and the complexity of data. When dealing with new data mining tasks, Many factors, such as the amount of data and the efficiency of the algorithm, will make the original algorithm can not be directly used in new data feature mining tasks. Therefore, on the one hand, how to improve the traditional data clustering algorithm so that it can be better applied to large-scale data processing and feature mining has attracted more and more attention. On the other hand, by integrating the research results of other fields, a new data clustering algorithm suitable for large-scale data is proposed. In recent years, a large number of research results on clustering analysis theory and algorithm have emerged at home and abroad. The latest research results in multi-disciplinary fields such as graph theory, fuzzy mathematics and artificial intelligence have been introduced into the research of clustering problems. Combined with the characteristics of data and clustering operation, the classical algorithms have been improved or many new clustering algorithms have been proposed. With the rapid development of theoretical research, the application field of clustering algorithm is also expanding. At present, it has become a common tool for intelligent information application [5].

The application of data clustering analysis tools has gradually expanded from remote sensing image processing, military auxiliary decision-making, meteorological and climate analysis and other professional fields to people's daily life, involving urban service facility planning, market customer analysis and other fields closely related to people's daily activities. A large number of demands have driven the rapid development of spatial clustering analysis method theory. At present, the commonly used data clustering algorithms include: partition based method, hierarchy based method, density based method, grid based method, model-based method and so on. The data type processed in this subject belongs to the category of large-scale data, and the data clustering algorithm provides theoretical feasibility for the data processing of this subject.

3. Construction of Evaluation Index of Curriculum System for Music Performance Specialty

3.1 Analysis on the Basic Characteristics of Music Performance Specialty

Through the analysis of the basic characteristics of the visual, aesthetic and performance of the music performance picture, this paper obtains the basic characteristics of the excellent music performance scheme in three aspects: single performance lamp, single moment overall performance picture and continuous performance picture [6]. It provides a theoretical basis for the determination

of follow-up evaluation indicators. Outdoor music performance has the characteristics of “scattered distribution of lamps, wide area, large span and difficult control”. Therefore, in the process of scheme debugging, it takes a long time and is difficult to debug. It is necessary to clarify the purpose of music performance and grasp the characteristics of excellent performance scheme at the beginning of design. An excellent music performance first requires the designer to have a deep understanding of the content to be displayed, and design their own goals and measures. For outdoor music performance, we should clarify its objectives according to its constituent elements. The constituent elements of outdoor music performance can be roughly divided into three items, namely, vision, aesthetics and performance. All outdoor music performances are provided for the audience. If the performance can not achieve a shocking effect, the performance scheme will be regarded as a failed scheme.

In order to meet the visual needs, we should first consider the brightness of the performance, and then the quality of the performance, that is, the distribution and color sense of the performance. The concept of brightness in music performance can not be measured by the physical quantity of performance like general lighting performance. This brightness needs to be determined according to the performance style and the scene environment. For the quality of the performance, we need to skillfully match the performance according to the actual situation, or use color performance to increase the appeal of the performance. There are many reasons for visual fatigue, which are usually closely related to the inappropriate performance illumination. There are three kinds of inappropriate illuminance: too bright, dim and direct performance. There are three reasons why the performance illumination feels too bright: a wide and very bright background, high reflectivity things around the performance environment, such as water surface, glass wall, etc., and strong contrast. If you need to produce a dark effect in the performance, you must deal with it properly. If it is too dark, the audience can't see what the performance action is about. Watching the optic nerve in the dark must be too excited, resulting in the viewer's visual fatigue. Brightness will fail the stage performance, and darkness will affect the performance effect. Therefore, the scheme designer must stand in the position of appreciation in the design process and observe and design from the main scenic spots. In addition, when there is a high brightness performance source in the field of vision, it will also cause visual damage. For example, there is a direct performance that directly irradiates the audience in the static scene. If its brightness is not reduced, the audience will be stimulated by the highlighted performance and cannot watch the performance directly. The intensity of performance lighting is often affected by the brightness of the surrounding environment. A candle performance in a dark place can also be dazzling, but a candle performance in the daytime will not produce any feeling to the eyes [7]. The above shows the importance of visual elements to stage performance. How to make the audience truly and comfortably watch should be the primary goal of music performance.

3.2 Extraction Principle of Evaluation Index Parameters

Through the summary of excellent music and lighting performance scheme, the characteristics of single performance lamp, overall picture at a single moment and continuous performance picture in the excellent scheme are obtained. These characteristics specify the most basic characteristics that an excellent performance scheme should have. How to analyze and summarize these characteristics to obtain the common evaluation criteria of music and lighting performance scheme and evaluate the scheme designed by the designer is an urgent problem to be solved [8]. The amount of control data in a performance scheme is very huge. It is unrealistic to analyze and summarize the control data of the performance scheme only by manpower according to the summarized excellent scheme characteristics. With the continuous progress of science, the technology of computer for large-scale data calculation is very mature. Therefore, data analysis and scheme evaluation can be carried out with the help of computer technology. However, some characterization characteristics of lamps may be affected by the control values of two or more channels, so it is difficult to comprehensively analyze the data characteristics [9-10]. This paper redefines the index parameters according to the characteristics of single performance lamp, single moment overall picture and continuous performance picture of the excellent performance scheme summarized above, trains and optimizes

the value range of the optimal index parameters according to the index parameter values of the excellent performance scheme, and finally obtains the evaluation results of the scheme through computer comparison. The specific process is shown in Figure 1:

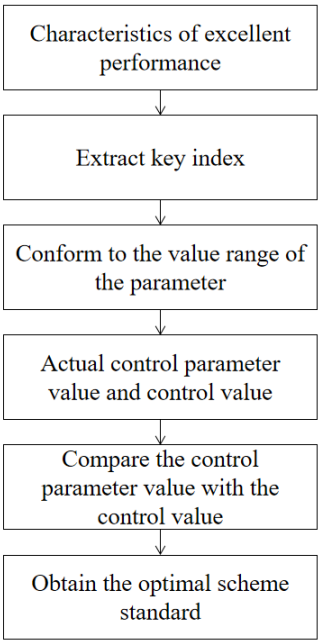

Fig.1 Flow Chart of Evaluation Method

4. Theoretical Conception of Curriculum System Reconstruction of Music Performance Specialty

4.1 The Value of the Curriculum Structure of Music Performance Specialty in the Curriculum System

Curriculum is divided by “depth”, which can be divided into “formal structure” and “substantive structure”. Divided by “dimension”, it can be divided into vertical curriculum structure and horizontal curriculum structure [11]. Vertical includes national, local and school-based courses, while horizontal refers to all course types of music performance specialty and their organization, arrangement and distribution methods. Specifically, it is the structural combination between professional courses and public courses, elective courses and compulsory courses, general courses and professional courses, theoretical courses and practical courses [12]. Curriculum structure is the link between curriculum objectives and educational achievements, and the basis for the smooth development of curriculum implementation activities. Whether the curriculum structure is reasonable and whether the intention of curriculum objectives can be implemented will affect the achievement of curriculum objectives. The curriculum structure directly determines the “depth”, “breadth” and “height” of the curriculum system, controls the “breadth” and “depth” of the curriculum function, is the framework that the curriculum content can rely on, and also directly affects the curriculum implementation and curriculum evaluation. Therefore, the curriculum structure is the skeleton of the curriculum system.

4.2 Specific Measures to Adjust the Course Content of Music Performance Specialty

According to the six modes of curriculum structure integration, as shown in Table 1.

Table 1 Six Modes Of Curriculum Structure Optimization

Macro structure	Formal macro structure	Substantive macro structure
Middle present structure	Formal intermediate structure	Substantive intermediate structure
Micro hook	Formal micro hook	Substantive micro hook
Macro structure	Formal macro structure	Substantive macro structure

We put forward three measures to optimize the curriculum structure, one is the selective optimization of the downward shift of the focus at the macro level, the other is the systematic integration of multiple relationships at the meso level, and the third is the “student-oriented” developmental development at the micro level.

5. Conclusions

Because the new curriculum system puts forward some new ideas, the curriculum objectives, curriculum structure, curriculum content, curriculum implementation and curriculum evaluation should be dominated by students' development and practical experience, which is consistent with the concept of teachers' dignity in China for thousands of years. Although the education reform in recent decades has always emphasized that education should take students as the theme, the transformation of thousands of years of traditional ideas can not be realized overnight. Teachers are used to starting from books, and students have always been used to following the footsteps of teachers. Suddenly, they hand over the initiative to students, and it is difficult for students to enter the state [13]. Therefore, the reconstruction of the curriculum system also needs to be accompanied by the transformation of traditional ideas. This is a long process, which needs to be carried out step by step, not too hasty, step by step, in order to ensure the smooth implementation of the curriculum system of music performance major in Colleges and universities.

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