

## Research Article

# Streaming Media Music Classroom Teaching Mode and Effect Analysis Based on Audio Band Analysis Technology

Huizhong Wang <sup>1,2</sup>

<sup>1</sup>Faculty of Education, Nanyang Institute of Technology, Nanyang, Henan 473004, China

<sup>2</sup>College of Culture and Art, Hoseo University, Yashan City, Zhongqing South Road 31499, Republic of Korea

Correspondence should be addressed to Huizhong Wang; wanghuizhong@nyist.edu.cn

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Music teaching mode refers to the basic structure or framework of various types of music teaching activities under the guidance of certain music teaching ideas and music teaching theories. The process of music teaching needs to reflect the procedural coping strategies. With the continuous deepening of quality education reform, higher vocational colleges pay more attention to cultivating students' professional skills and vocational abilities. Therefore, many schools need to change the current situation of music teaching in higher vocational colleges and explore new music teaching models. School teaching expects to further stimulate students' interest in music learning and give full play to the aesthetic education function of music teaching. This article focuses on the research and evaluation of the music teaching model around the audio recognition technology and organically combines the music education theory with the music teaching practice. Research through the construction of a new mode of music teaching in higher vocational colleges, enrich the music teaching methods of music courses, and improve the effect of music teaching. The research has realized the aesthetic education function that music teaching should have in quality education. At the same time, the research results also provide a reference for music teaching in similar higher vocational colleges.

## 1. Introduction

Music education is an important carrier of humanistic quality education in higher vocational colleges. Music education has become an important way for higher vocational colleges to cultivate students' aesthetic ability, cultivate students' moral sentiment and promote students' all-round development. Music teaching mode is an important aspect of music teaching, and it also an important content of music educators' research. At present, academic circles at home and abroad have conducted researches on music teaching models from multiple angles, and many research results have obtained. However, there is still a lack of research on the music teaching mode of higher vocational colleges. In addition, there are relatively many researches on music teaching mode in domestic and foreign academic circles. There are differences in the form of music teaching in many links. At present, music teaching has also achieved good research results. However, the existing research content related to music teaching in higher vocational education is still rela-

tively lacking. The current teaching environment, teaching objects, and teaching process analysis are relatively insufficient. This article analyzes the current situation of music teaching in higher vocational colleges from the aspects of teaching object, teaching situation, and teaching effect. Research discovers that there are diversified problems, analyzes the causes, and refines relevant teaching concepts. The research then took Hubei Transportation Vocational and Technical College as an example to build an analysis framework and analyze the music teaching model. Researching and constructing a music teaching model that truly suits the characteristics of higher vocational colleges have strong theoretical significance for the study of music teaching models in higher vocational colleges [1–3].

Currently, most of the music teachers in higher vocational colleges graduated from relevant music colleges. In daily music teaching, there have been studies that have borrowed more from the teaching mode of music majors in ordinary colleges and universities to organize teaching. At present, there is a relatively lack of teaching experience and

practical cases in higher vocational colleges that can be used for reference. On the one hand, the existing research lacks practical research on music teaching mode in higher vocational colleges. The teaching mode is single, and the teaching structure is relatively loose [4–6]. On the other hand, the musical foundation of the teaching objects is weak, and the learning goals are not clear. Therefore, the teaching effect of music education in higher vocational colleges is not ideal. Music teaching not only did not bring students emotional pleasure but also brought depression of interest. Classrooms have only become a channel for obtaining credits [7–9].

The article uses literature research method, investigation research method, system analysis method, process analysis method, and other research methods to carry out research. The article focuses on the current research situation at home and abroad, the actual situation of music education in higher vocational colleges, the analysis framework of music teaching models, the construction of new music teaching models, and the implementation of path operations. Through literature research, it found that strengthening the practical links of music education has become the consensus of current music education research. Research on the scientific application of psychological principles has also become a common feature of contemporary music education and educational research at home and abroad. It can be seen that the current strengthening of music education practice has become the consensus of current music education research. Psychological research on scientific application has also become a common feature of music education and educational research at the current stage. Through investigation and research, it is found that higher vocational music education has not yet formed a mature music teaching model. Through investigation and research, it found that there is no mature music teaching model for music education in higher vocational colleges. The current music teaching structure is relatively loose, the curriculum setting is relatively random, and there is no fixed and unified teaching material [10–13]. The music quality of music teaching objects is generally low, and the effect of classroom music teaching is generally poor. Investigating the reasons found that it manifested in the problems of music education in higher vocational colleges. In addition, strengthening the research of music teaching in higher vocational colleges and reforming the mode of music teaching are important means to improve the level of music education in higher vocational colleges. Music teaching mode specifically refers to the completion of specific music teaching goals based on specific music teaching theories. This mode is relatively stable and maneuverable. This mode is also an integral part of the music teaching framework and its program system [14–16].

The school also pays attention to the education and cultivation of students' values, morals and ethics, aesthetic sentiments, and innovative consciousness. Music education is an important part of humanistic quality education in higher vocational colleges. Music teaching has offered as a public elective course in many higher vocational colleges. At present, music education in higher vocational colleges has problems in varying degrees, such as single music teaching mode and loose music teaching structure. In addition, the musical

foundation of music teaching objects is weak, and the learning goals are not clear. At present, there is a relatively simplistic trend in the mode of higher vocational music teaching. The structure of music teaching is relatively loose. In addition, the basis of music teaching objects is relatively weak. The learning objectives of music teaching are not clear enough. The effect of music teaching is not ideal for the previous music training. Music education in many higher vocational colleges is a mere formality, and the effect of music teaching is not ideal. In some colleges, music classes have only become a channel for obtaining credits [17–19]. The aesthetic education function of music teaching is difficult to realize. The article focuses on the characteristics of the times, vocational education, and students' personalities of music teaching activities. The article emphasizes the application of the laws of educational psychology and summarizes and puts forward the idea of "internal drive guidance." The article is innovative in the concept of music teaching reform and creatively summarizes and puts forward the "drive-guidance" model. The article has designed three presentation methods, which have greater practical significance in practice and have achieved good research results [20–23]. The research logical structure of this paper is shown in Figure 1.

## 2. Existing Research Results and Literature Review

This article collects more than 200 books, papers, and other documents through the library, CNKI, and <http://Weipu.com>. This article focuses on the literature review of music teaching, teaching mode, and music teaching mode. This article focuses on the study of music teaching mode in higher vocational colleges. This article's research on the music teaching mode in the field of vocational colleges found that most of the existing studies belong to journal papers. There are relatively few doctoral and master's theses. The article further reviews the classification of teaching modes under the guidance of different teaching theories in the main literature.

*2.1. Research Status of Music Teaching Mode.* In accordance with the idea of "internal drive guidance," this article uses systematic methods and process methods to establish an analysis framework for music teaching models. The text analyzes the elements of the music teaching model. The essentials put forward in this article include music teaching philosophy, music teaching goals, music teaching theory, activity framework, implementation conditions, operating procedures, and effect evaluation. The main teaching content proposed in this paper involves many aspects. Emphasis includes music teaching philosophy and goals, including the theoretical carding and implementation conditions of music teaching, including music teaching evaluation and other content. This paper focuses on the main body of teachers and students and further researches on music teaching. A related theoretical framework model is constructed. The article further analyzes the content of the framework of music teaching activities around elements such as teachers, students, lesson content, and music teaching methods. On

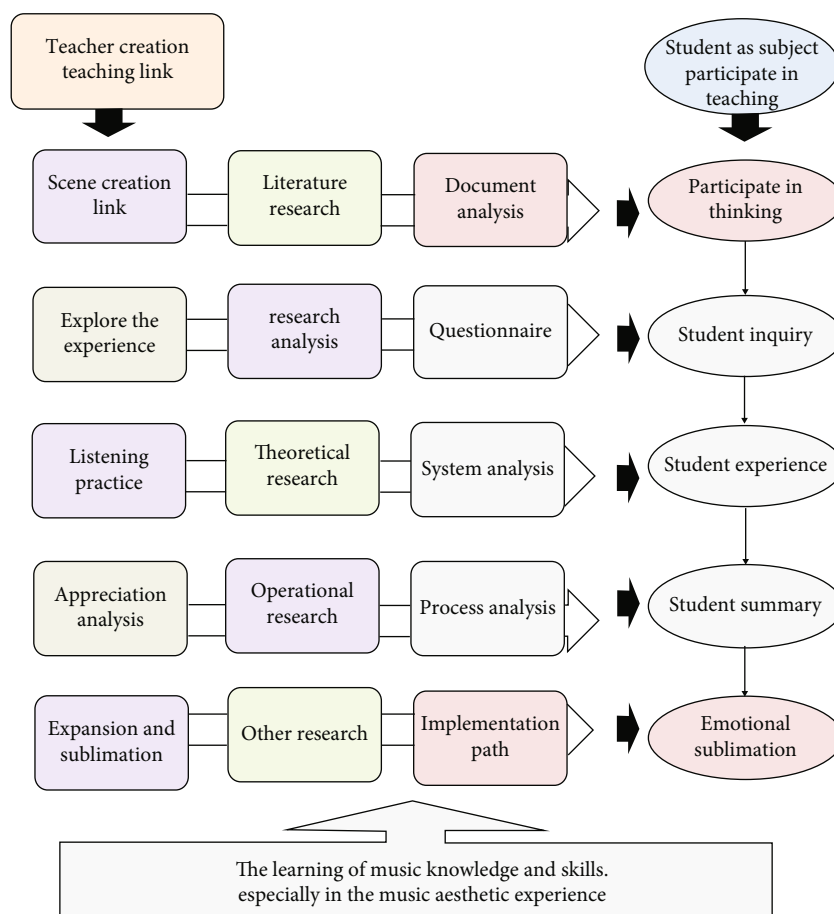


FIGURE 1: The research logical structure of this paper.

this basis, the article combines the characteristics of music education in higher vocational colleges to construct a “drive-guide” model. The article designs and proposes three presentation methods, namely, training-inquiry presentation based on professional needs, self-guided learning presentation method based on network resources, and experience-practical presentation based on the popularization of music. The article optimizes the curriculum system, curriculum music syllabus, and basic music teaching resources for higher vocational talent training. The article focuses on classroom music teaching design, network classroom construction, practice position construction, teacher team construction, music teaching object analysis, etc., and puts forward coping strategies and implementation suggestions [24–26].

There is a big difference between foreign vocational education and domestic vocational education, and related research is very different. Foreign vocational education research is relatively mature, and its theories are more. Specifically, these online resources are helpful for music learning. Contribute to the enrichment of music learning. The article also puts forward some opinions on the performance requirements of music popularization. The article further clarifies the key content of music classroom design. According to these literature research findings, the most important feature of this article is the in-depth application of psycho-

logical principles. We were influenced by these theories in the process of reviewing the literature. At the same time, as far as the literature we have contacted with, the foreign researches are more of the macroscopic results of pedagogy and educational psychology [27–30]. At the micro-specific level, there are few studies specifically targeting the “music education model.” The main reason is that the information collection channels are relatively limited. In addition, the differences between Chinese and foreign music education itself also were taken into consideration. Model analysis results are shown in Figure 2.

**2.2. Research Progress of Multimedia Music Teaching.** Each teaching mode was verified under the guidance of a certain teaching theory. According to different teaching objects, a complete set of procedural strategies was constructed according to specific teaching goals. In the book “Constructivism in Education,” American Stiffer et al. expounded the rich new ideas of constructivism. The core point of the research is constructivism. Specifically, it should be student-centered, emphasizing students’ active exploration of knowledge, active discovery, and active construction of the meaning of the knowledge learned. The teaching theory of constructivism provides a scientific theoretical basis for the construction of the music teaching mode of this thesis. In addition, music classroom teaching focuses on practicality.

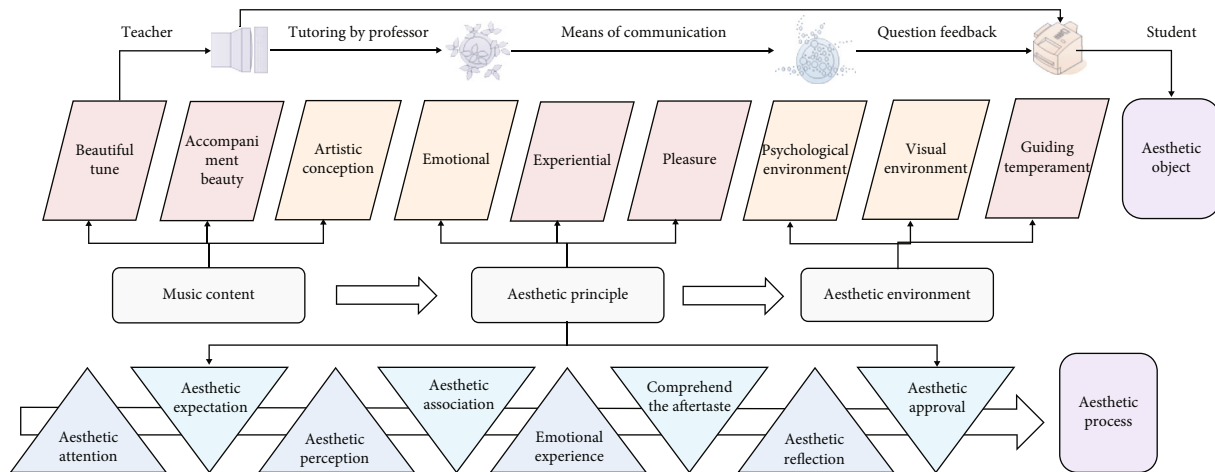


FIGURE 2: The theoretical model of the influence of background music aesthetics on college students.

This paper focuses on optimizing the teaching methods of higher vocational music in the classroom. The course teaching system has been improved, the music course training syllabus has been constructed, and the educational resources of the music classroom have been enriched. Furthermore, according to the many demands of music classroom teaching, corresponding teaching strategy and facility suggestions are put forward. The above two theories belong to the theory of constructivism. Compared with behaviorism, it is a kind of progress. Student initiative is valued, and research emphasizes student-centeredness. Following such a process, later teaching models tend to use multiple teaching theories. Research is moving towards a more complete and diversified era. It is difficult to put forward specific opinions in this field in this article [31–33].

The music curriculum reform started in September 2011, and it has been nearly ten years. The high school music curriculum reform is an integral part of the basic education curriculum reform. The reform of high school music curriculum involves curriculum nature, value, philosophy, goals, content, teaching, evaluation, management, and other content. The research fully reflects the new teaching method guided by the new curriculum concept. The music curriculum has brought a fundamental change in the roles of teachers and students. Great changes have taken place in the way students learn. The education reform of music curriculum has entered its tenth year today, and the reform of high school music curriculum involves the basic curriculum reform content. High school music courses focus on the intrinsic value, ideas, goals, and teaching evaluation of the curriculum. The research in this paper fully analyzes the new course teaching concepts and methods and truly makes the teaching activities full of interactivity. Change the existing methods of teaching and learning. The existing model reform has gradually replaced the traditional “lesson preparation.” Along with the curriculum reform, the teaching design of high school music has continuously optimized. In terms of teaching content, teaching process, and methods, the research all reflects the way of curriculum reform with students as the main body and aesthetics as the core. The

specific content includes music teaching design, standard, scientific, and artistic teaching under the curriculum concept. Curriculum reform enables the implementation of music teaching design. The design of high school music teaching is the foothold for deepening the concept of curriculum reform [34–37].

**2.3. Summary of the Research on Music Teaching Evaluation.** The theoretical viewpoints of constructivism include constructivist view of knowledge, view of students, view of learning, and view of teachers. Constructivist view of teaching: as an important part of the philosophy of learning, constructivism is a further development after the development of behaviorism to cognitivism. Many views and propositions of this theory are reasonable. The theory has certain reference significance to the education reform practice. Constructivism emphasizes that students are the main body of information processing and the active constructor of meaning. Students are not passive receivers and objects of knowledge. At present, constructivist theory has formed some specific teaching techniques in actual education that can promote the psychological development of students. This method has increasingly widely used. At present, the main meaning of interactive teaching refers to the interaction between students and teachers. Students are not simply passive recipients and objects of knowledge in the traditional sense. At the same time, interactive constructivism has also developed some practical teaching skills to promote the development of students’ mental health in real life. Such methods are more widely used, including relatively mature inquiry-based learning techniques, incremental learning techniques, and learning techniques in the form of random access. Among them, relatively mature technologies mainly include inquiry learning, scaffolding teaching, and random access teaching. The main influence of constructivism on instructional design is mainly used in the cultivation of students’ perception. Research focuses on the differences in learners’ personality. Research focuses on the creation of a teaching atmosphere. Pay attention to the cultivation of students’ inquiry and creativity. Constructivist learning theory

is a major breakthrough in traditional learning theory. This theory puts forward a series of new theoretical viewpoints on learning and teaching, emphasizing the important role of “context” and “collaboration” in the construction of meaning. In turn, instructional design pays attention to the design of the learning environment at the beginning. Research focuses on the integration of learning theory with education and teaching practice and promotes the in-depth progress of education reform.

Studying the curriculum design in related teaching activities is a systematic and scientific plan set in advance for the final teaching practice. The key content of constructivism teaching is to cultivate students’ self-perception ability and to carry out adaptive education according to the individual differences of participants. This kind of theoretical learning is also a great breakthrough and innovation for the traditional teaching mode. It breaks through the simple static mode of teaching and learning and builds a new teaching environment of collaborative context. The teaching design at the macro level will eventually be perfected in practice. Instructional design can be carried out on different levels. The classification and levels of instructional design focus on different types and levels of needs. The specific operations can be targeted. First, proceed from the classification, including three aspects. The first category is instructional design at a macro level. The second category is teaching design at the meso level. The third category is microlevel instructional design. Macro teaching design belongs to “education system design.” It starts with reforming the relationship between education, society, and human development. This research focuses on the reform of the teaching system for the cultivation of new century and new talents.

*2.4. Research on the Evaluation Model of Music Teaching.* The famous German educator Herbart divides teaching into four stages in the book “General Pedagogy.” The four stages include “understanding, association, system, and method.” The research reveals the regularity of classroom teaching. The research explains the characteristics of students’ psychological activities in these four stages and the teaching methods that teachers should adopt, that is, the famous “quadrants” teaching model. Later, through his student practice and development, a “traditional teaching mode” has gradually formed. The research results have become the dominant teaching model in the 20th century. Herbart’s teaching model emphasizes teacher-centered and teacher-led teaching. This paper also focuses on exploring the characteristics of these activities from the four psychological stages of students. Emphasis is placed on analyzing teachers’ teaching methods. Classroom instruction is conducted by subdividing into four instructional quadrants. This teaching practice mode has been gradually developed, and a new teaching system has gradually formed, which has become the mainstream teaching mode in the current social environment. This model takes the teacher as the teaching center and pays attention to the absorption and exploration of knowledge by students. It is also an active teaching method. Pay attention to students’ mastery of knowledge. However, this method ignores the subjectivity of students. Students are in a passive

learning state. From the perspective of learning psychology, this is a behaviorist theory. In terms of constructivism, American Bruce and Joyce and Marshall will put forward the concept of teaching mode in the book “Teaching Mode.” The research believes that the teaching model has a landmark and important significance in theory. The contemporary teaching models at home and abroad are based on the teaching models of two scholars. Existing research also provides important reference value for the music teaching mode of higher vocational colleges. The two scholars divided the teaching mode into four main types, namely, social teaching mode, information processing teaching mode, personal teaching mode, and behavioral system teaching mode. Moreover, they extended 23 kinds of presentation methods. The interrelationships between model elements are shown in Figure 3.

### **3. The Changes and Influencing Factors of Multimedia Music Teaching Design**

Music instructional design is a subdiscipline constructed in instructional design. The teaching design link is the first link in the teaching of music teachers. The formulation of music teaching design was built on the characteristics of music discipline. Existing research defines the design of teachers and courses. The research emphasizes the task design of music teaching design and then systematically and comprehensively establishes the role of educators, participants, and teaching links in teaching design activities.

*3.1. The Systematic Analysis of Teaching Activities.* The discipline of instructional design emerged after the 1960s. With the design of the teaching system, a specialized research field has gradually formed. First, starting from the history and current situation in the field of international instructional design research, almost all first-class instructional design experts have a profound educational psychology background. This article conducts interdisciplinary research as a researcher. The current discipline has a long history of research on teaching mode. The continuous improvement of the teaching system has gradually built a relatively complete research system. Generally speaking, almost all current teaching institutions and education experts need to cultivate relatively deep psychological knowledge. In particular, interdisciplinary experts have a better understanding of how to disassemble professional knowledge and pass it on to student groups. The designer of the teaching and the object he faces, under the premise of respect, understanding, and cooperation, completes the activities of teaching and learning. Second is the theory of constructivism. The emergence of this theory hailed as a revolution in contemporary educational psychology. Constructivism can be traced back to Piaget and Vygotsky’s early research theories. It can gradually become popular since the 1990s. Contemporary Western irrational philosophical trends are gradually emerging. Network communication technology and multimedia technology continue to advance. Model analysis results are shown in Figure 4.

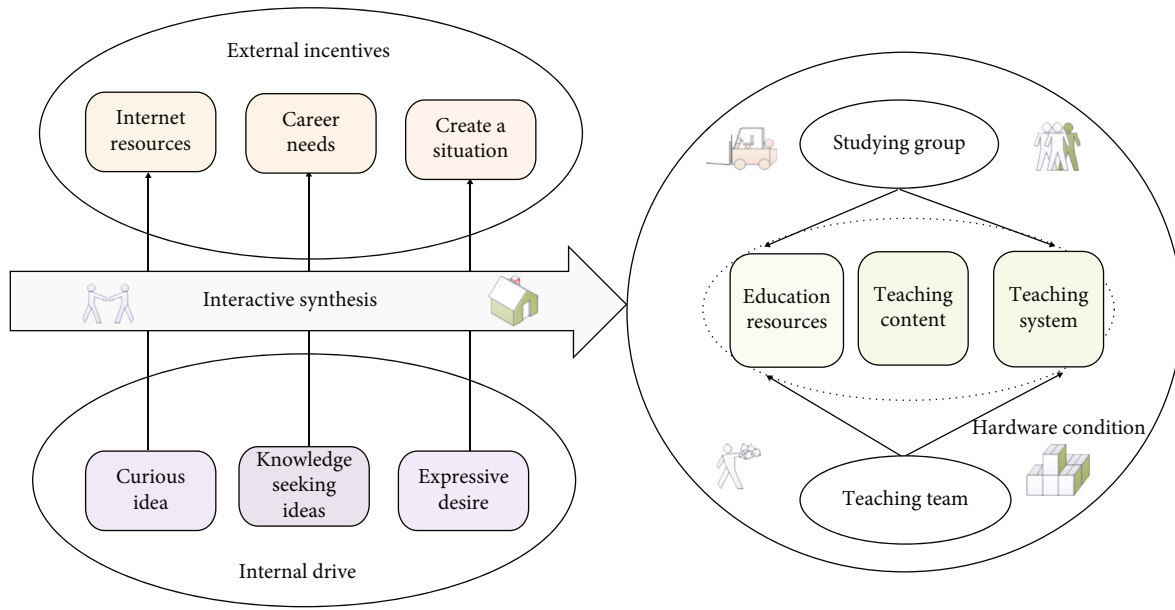


FIGURE 3: Diagram of the main factor system of teaching mode.

The curriculum reform cycle in countries all over the world is ten years. Microteaching design mainly faces the development of a certain course. The Madhyamika teaching design is mainly carried out in specific subject areas or in a number of interrelated teaching units. This method is called “discipline instructional design.” The role is equivalent to curriculum design and the units and modules in the subject. In general, countries around the world have relatively consistent timings for curriculum reform, generally set in ten years as a cycle. Microclassrooms are designed from the outset to focus on individual teaching units in specific subject areas. Through the design of teaching fragments, students can be familiar with and master the main content of the course teaching as soon as possible. This method is relatively more mature in application and more systematic in teaching design. The design of the course needs to consider the interaction of many factors and then meet the specific teaching objectives. The content can also include the design of teaching fragments. The application of this method is also the most common, so that the teaching design is really applied. Secondly, according to the scope and size of the problems in teaching, teaching design can be divided into three levels. One is classroom-centered. The second is “system”-centered. The third is product-centered. Class-centered mainly reflected in education and teaching ideas. The content of the school is based on the syllabus or curriculum standards, as well as the general teaching plan requirements. The curriculum was designed for the content, objects, and environmental conditions of the teaching. The curriculum usually is completed by the teacher. The specific “system” is the center, and the teacher, subject experts, and administrators work together to complete. There are also courses that are product-centric, and the content of the course is designed with media materials and teaching aids needed in teaching as products. Courses often need to determine which products have a broad market and can meet specific teaching

goals and demand. Model analysis results are shown in Figure 5.

In addition, the setting of music teaching curriculum also includes many aspects such as moral education and aesthetic education. Curriculum reform puts more emphasis on aesthetic education as the core and is aimed at teaching and educating people. At the current stage, my country has already started the reform of curriculum teaching in an all-round way, and teaching design must also give corresponding higher-level requirements. In the design of the whole teaching system, the artistic characteristics of music course teaching are more obvious and prominent. The curriculum reform puts more emphasis on the concept of taking aesthetics as the core and educating people as the goal. Under the background of fully implementing subject teaching, teaching design must put forward higher requirements. In the implementation of teaching design activities, the music subject is particularly prominent in terms of artistic characteristics. Consider that music itself is an important part of human art. The teaching design of music can improved through the creativity of teachers. The full implementation of the new educational concept can enhance the advantages of the discipline. At the same time, music discipline is one of the basic disciplines of school education. The subject can implement aesthetic education for students. In addition, music teaching is an important part of our country’s basic education. Music education assumes different responsibilities. On the one hand, it is an important way to implement aesthetic education for students. On the other hand, music education can improve teaching design and research effects and strengthen the logical teaching system design of subject teaching. In the study of music design, follow the systematic methods and rules of design. The school develops training courses that can enhance students’ high-level spiritual pursuits. The curriculum can provide effective guidance for students’ personality development, ability generation, values,

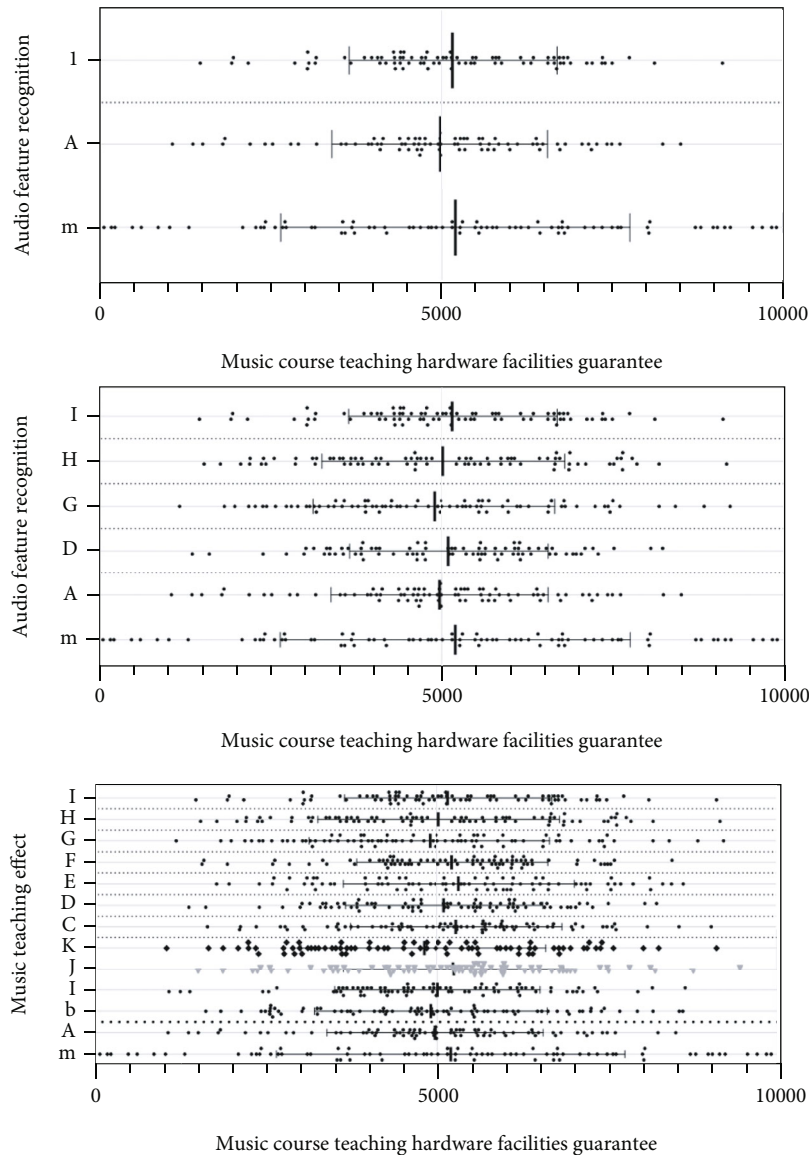


FIGURE 4: Analytical results of the research model of music teaching evaluation.

and outlook in life, specifically, starting from the students' high-efficiency learning needs and selecting limited class hours and textbook capacity. Explore and research more scientific teaching process and teaching mode. It has been common for schools to ignore music teaching for a long time. Especially in our country's curriculum reform, the implementation of the high school music curriculum of aesthetic education has experienced a difficult development process. Model analysis results are shown in Figure 6.

*3.2. The Method of Combing the Elements of Teaching Mode.* Specifically, teaching activities have two main bodies, namely, teachers and students. These two types of subjects were interactively linked by means of communication. Teachers are mainly responsible for teaching tutoring, while students are responsible for asking questions and feedback. Teachers belong to a certain teaching team. Students belong to a certain study group. The object of teaching activities is

teaching content. It should note that the teaching content is set around the purpose of teaching. Teaching content generally includes knowledge, thoughts, and feelings. The purpose of teaching is affected by factors such as students' cognition, how to say the quality, and the strength of learning ability. Compared with the related teaching content, the goals of the whole course or music teaching are different. The content is attached to the material carrier and presents various existence. Some forms are text, some are pictures, some are sounds, and some are videos.

The function of forgetting gate is to determine the part discarded from the input information  $h_{t-1}$  and  $x_t$  and output a value between 0-1. The larger the value, the more information is retained. The output of forgetting gate is calculated as follows:

$$f_t = \sigma(W_f \cdot [h_{t-1}, x_t] + b_f), \tag{1}$$

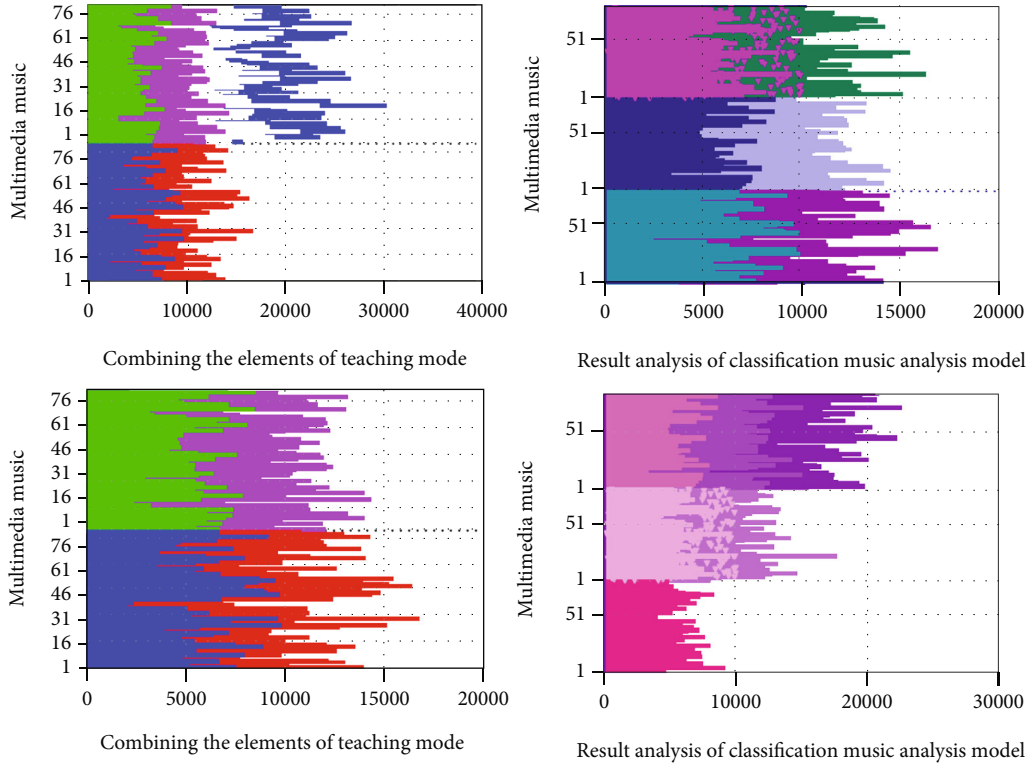


FIGURE 5: Result analysis of categorized music subject analysis model.

$$\dot{i}_t = \sigma(W_i \cdot [h_{t-1}, x_t] + b_i), \quad (2)$$

$$C'_t = \tanh(W_C \cdot [h_{t-1}, x_t] + b_C). \quad (3)$$

Suppose that index evaluation set is represented by  $A$ ,  $r_j$  is represented the membership degree vector, and the data set is represented as follows:

$$r_j = (r_{j1}, r_{j2}, r_{j3}, r_{j4}, r_{j5}). \quad (4)$$

In the formula,  $r_j$  represents the membership degree vector corresponding to the index evaluation set  $A$ . Assumptions are as follows:

$$B = (B_1, B_2, B_3, B_4, B_5). \quad (5)$$

Self-organizing process adaptively forms the first-level intermediate model:

$$z_k = f_k(v_i, v_j), i, j = 1, 2, \dots, 6. \quad (6)$$

And in the training set  $A$ , the parameter prediction method is used to predict the coefficient of  $z_k$ . In the test set  $B$ , the competition model  $\{z_k\}$  is filtered through external specifications, and the middle candidate injury model  $w_k = (z_k)$  is collected and used as the input of the second layer of the network.

In addition, teaching content has multiple carrier forms at the same time. When constructing teaching mode or designing teaching in this article, we can choose suitable carrier form according to the needs of teaching form. For exam-

ple, if you feel that the text is boring, you can express the text as subtitles. Then, mark the text in the video, and the effect will be much better. At the same time, the means of dissemination has changed from distributing paper materials to watching videos. The constituent elements of teaching activities are the basic framework system for building teaching models. Different teaching modes have different feedback forms for each element. For example, some models focus on the role of teachers. Some models favor the active participation of students. Some models rely on the transformation of teaching content. Some models focus on the reform of teaching methods. Therefore, when constructing the teaching model in this article, it will be designed in accordance with the requirements of the teaching philosophy and the actual conditions of each element. Model analysis results are shown in Figure 7.

The teaching mode is a set of structured and systematic framework built based on teaching theories under the guidance of teaching concepts. Considering that music teaching is an important part of human art teaching, the improvement of music teaching design still mainly depends on teachers' teaching. In the process of implementing the new teaching concept, the advantages of music discipline can be continuously carried forward. In addition, music education cannot only learn the relevant knowledge of music theory; in addition, it can also cultivate students' appreciation ability and improve students' aesthetic education. The composition of the teaching model includes teaching concepts, teaching goals, and teaching theories. The specific content also includes content such as activity framework, implementation conditions, operating procedures, and effect evaluation.



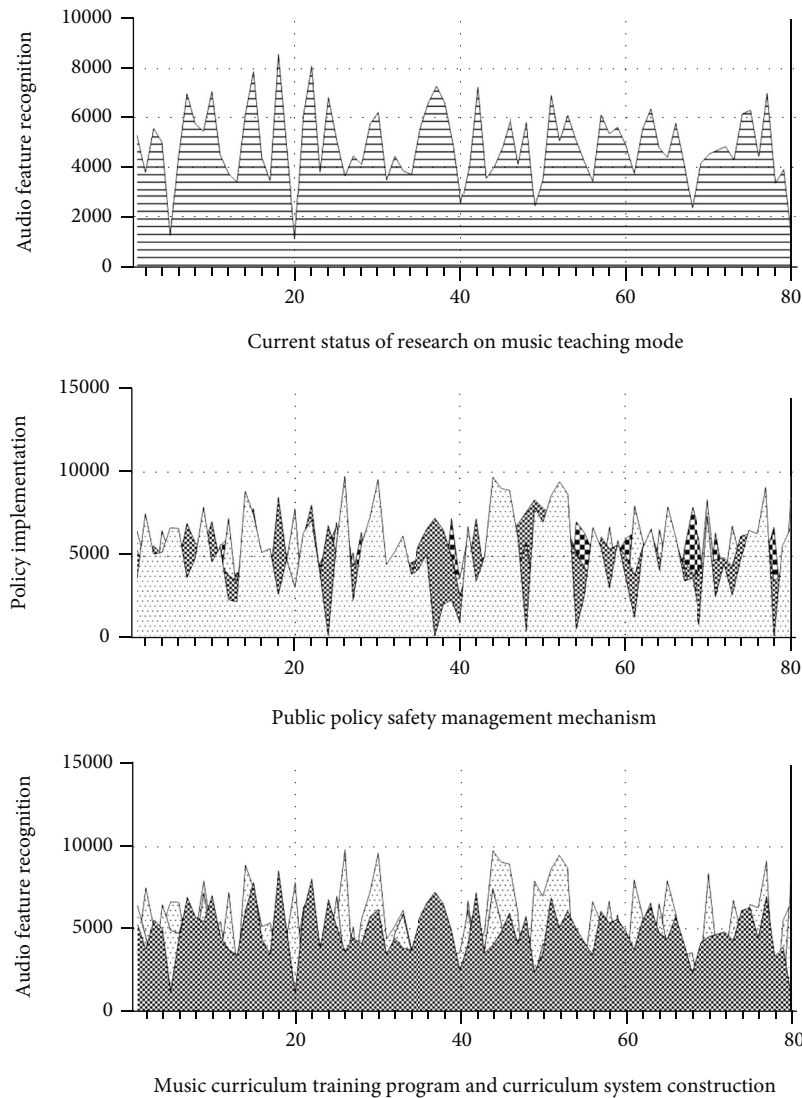


FIGURE 6: Music curriculum training program and curriculum system construction.

Among them, the teaching concept is a kind of guiding tendency with purpose. This concept focuses on the direction and uniqueness of the teaching model. This mode is also the essence and soul of the teaching mode. The teaching philosophy is often based on a certain theory, combined with the actual situation of teaching to get a guiding point of view. The teaching goal is the inclination requirement in the process of talent training. This view is different from the micro-teaching purpose of the previous article.

Shape the general functional relationship between the output  $y$  of the injury model and the input  $x_1, x_2, \dots, x_n$ . The Kolmogorov-Gabor polynomial is as follows:

$$y = f(x_1, x_2) = a_0 + a_1x_1 + a_2x_2 + a_3x_1^2 + a_4x_2^2 + a_5x_1x_2. \quad (7)$$

We treat each of the monomials as  $m$  input models in the original structure of the modeling network:

$$v_1 = a_0, \quad v_2 = a_1x_1, \quad v_3 = a_2x_2, \quad \dots, \quad v_6 = a_5x_1x_2. \quad (8)$$

The final information  $i_t \times C_t'$  is expressed as the value that can be obtained  $C_t$  from the output information of the joint forgetting gate:

$$C_t = f_t * C_{t-1} + i_t * C_t'. \quad (9)$$

The calculation method is as follows:

$$O_t = \sigma(W_o \cdot [h_{t-1}, x_t] + b_o), \quad (10)$$

$$h_t = o_t * \tanh(C_C). \quad (11)$$

Coverage index calculates the ratio of predicted items to all unscored items, so as to measure the comprehensiveness of prediction. Assuming that  $h$  items are predicted, the calculation method of coverage is as follows:

$$\text{Cov} = \frac{h}{n}. \quad (12)$$

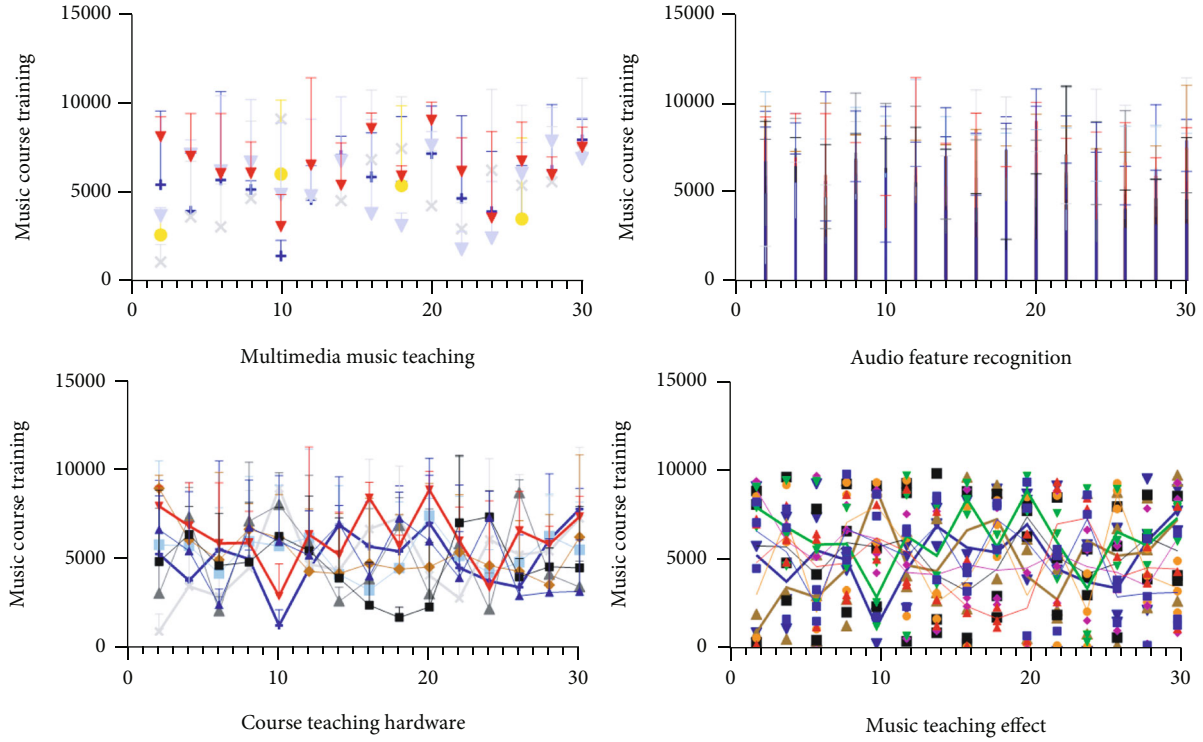


FIGURE 7: Music curriculum syllabus and condensed teaching content.

Recall index is also used to evaluate the system effect in the field of information retrieval. The larger the recall value is, the better the recommendation quality of the algorithm is.

$$\text{recall} = \frac{\text{Hits}}{|\text{test}|} = \frac{|\text{test} \cap \text{Top} - N|}{|\text{test}|}. \quad (13)$$

In order to verify the clustering effect of user attributes, the contour coefficient  $S$  is used to evaluate the clustering result, and the specific expression is as follows:

$$S(i) = \frac{b(i) - a(i)}{\max\{a(i), b(i)\}}. \quad (14)$$

The goal is the core element of the teaching model. According to the requirements of the concept and the actual situation, the research formulates the correct teaching goals. This has also become the key to constructing a teaching model. The different teaching goals determine the different teaching modes. Teaching objectives determine the setting of courses in teaching activities. The teaching process is the arrangement of teaching content and the design of teaching strategies. At the same time, teaching goals are also a measure of teaching evaluation. Teaching evaluation must be developed around teaching goals. Teaching theory is a systematic method system that serves the model. Teaching content is the concrete expression of teaching philosophy. The study of teaching mode is the specific content based on philosophy, psychology, and pedagogy. The teaching mode was

completed under the guidance of a certain teaching theory. Model analysis results are shown in Figure 8.

The activity framework is the basic framework established based on the teaching activity system. This is the main content of the teaching model. The essence of the teaching activity framework lies in the setting of teaching goals. Under the guidance of certain teaching theory, reasonably plan and arrange each teaching element in the teaching implementation process, to achieve the optimization of the teaching process. The teaching activity framework includes the determination of the teaching subject and setting of teaching content. Many elements in the process of teaching implementation, such as the design of teaching methods, should be optimized. The core content of the teaching activity framework is teaching communication activities. The main difference between different teaching modes lies in the different teaching activities process. Model analysis results are shown in Figure 9.

*3.3. Suggestions on the Implementation of New Music Teaching Mode and Teaching Improvement.* Implementation conditions, operating procedures, teaching evaluation, etc., are auxiliary contents that serve the main contents. Once a stable teaching activity framework is formed, the model builds the main skeleton of the teaching model. Implementation conditions refer to the guarantees of various conditions that play a role in the specific implementation of the teaching model. The main content is music teaching. The implementation of teaching content requires the support of various teaching software and hardware. Among them, the hardware content includes multimedia classrooms necessary

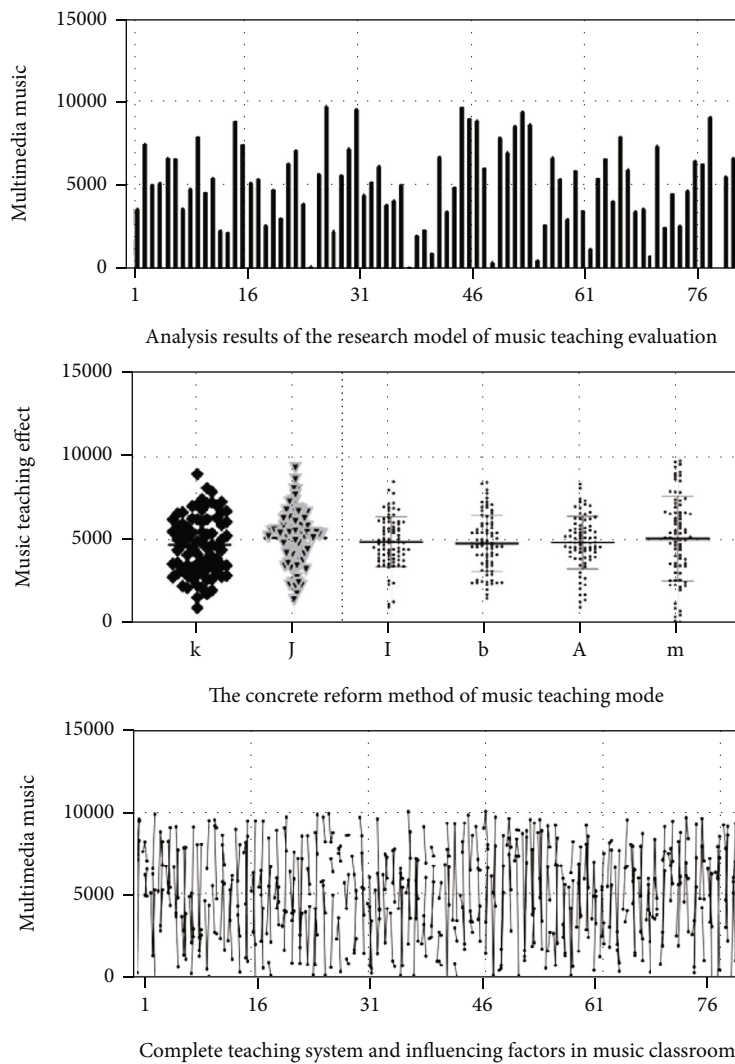


FIGURE 8: The construction of teaching staff in music courses.

Differentiated selection mode of music course training program

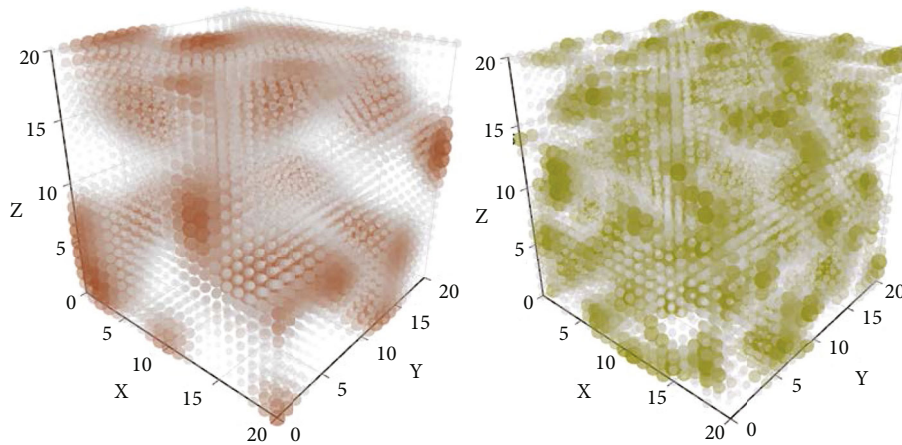


FIGURE 9: Guarantee of teaching hardware facilities for music courses.

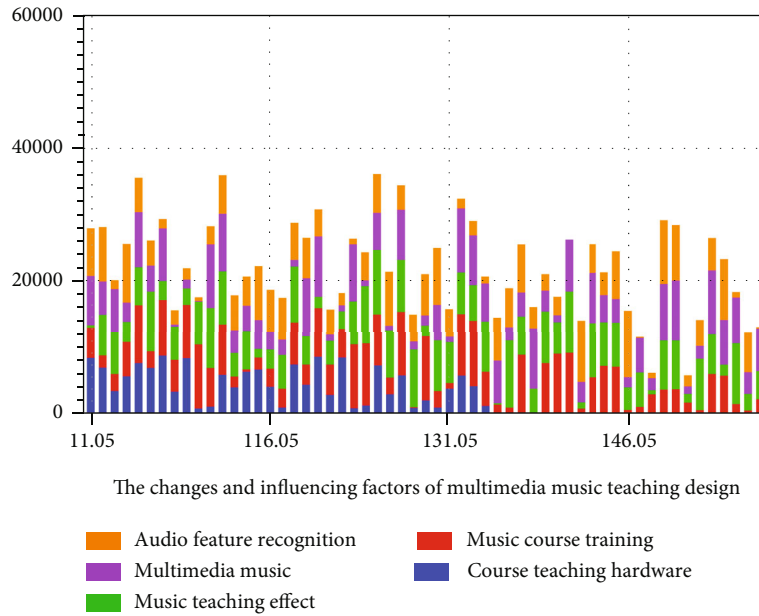


FIGURE 10: Differential selection mode of the music course training program.

for music teaching, including audio equipment and other teaching facilities. Software support mainly includes factors such as teacher-student relationship and teaching environment. Operating procedures are specific instructions for the implementation of the teaching mode. The content serves as a scientific arrangement to support the operation of the teaching mode. Teaching activity as an interactive activity is complicated to operate and requires many skills. Therefore, the model needs a good set of operating procedures. Teaching evaluation is a judgment on the teaching process and teaching results according to specific teaching goals. Teaching evaluation is a method to test whether the teacher has completed the teaching task. The content includes the verification of teaching links and teaching design.

At the same time, teaching evaluation is also an effective means to test the teaching model. In summary, as a framework system and strategy system, the teaching mode covers almost the entire teaching process. This is the main content of the teaching mode. Under the guidance of a certain teaching theory, rationally plan and arrange each teaching element in the teaching implementation process. The essence of the teaching activity framework lies in the setting of teaching objectives. The activity frame is the basic frame established based on the teaching activity system. The optimization of the teaching process is also critical. The framework of teaching activities mainly involves the setting of teaching subject and teaching content. Many elements of the teaching implementation process also need to be optimized. The model rationally regulates the internal relations between the elements in the teaching activities. After the model analysis, the optimal result of the teaching process was realized. The study of music teaching mode in higher vocational colleges provides an operation mode that can directly be imitated for music teaching. The research results provide music teachers with theoretical examples of teaching models. This article studies the improvement of students'

cognition of teaching theory. Unify teaching ideas and teaching-related theories. The soul of the teaching model is the ideological tool to carry out teaching reform. The advancement and effectiveness of teaching reform measures are largely related to their guiding theories. Teaching concepts and theories put forward at different times. Different methods have specific applicable conditions and scope. Therefore, combined with the current status quo, the research suggests that schools should carry out reforms of good teaching models. The study believes that the school should strengthen the research and study system methods and process methods to reform the teaching mode. Model analysis results are shown in Figure 10.

First, the communication process model in communication theory explains the elements involved in the teaching communication process. The model reveals the dynamic interrelationships among various elements in the teaching process. The model believes that the teaching process is a complex and dynamic communication process. Second, the communication theory points out the two-way nature of the teaching process. The design of the teaching process must pay attention to the analysis and arrangement of both teaching and learning. The teaching model makes full use of feedback information to adjust and control the feedback link at any time. The expected teaching effect was achieved after model analysis. Finally, the study of communication process can provide basis and reference for teaching design, for example, content analysis, audience analysis, media analysis, and effect analysis. These contents can provide learning content analysis, learner analysis, and selection of teaching media for teaching design. The framework system of communication theory is consistent with the content of teaching activities. Teaching activity is a kind of communication activity. Therefore, many principles and methods of communication are very useful for teaching activities. According to system theory, process theory, and communication

Complete teaching system and influencing factors in music classroom

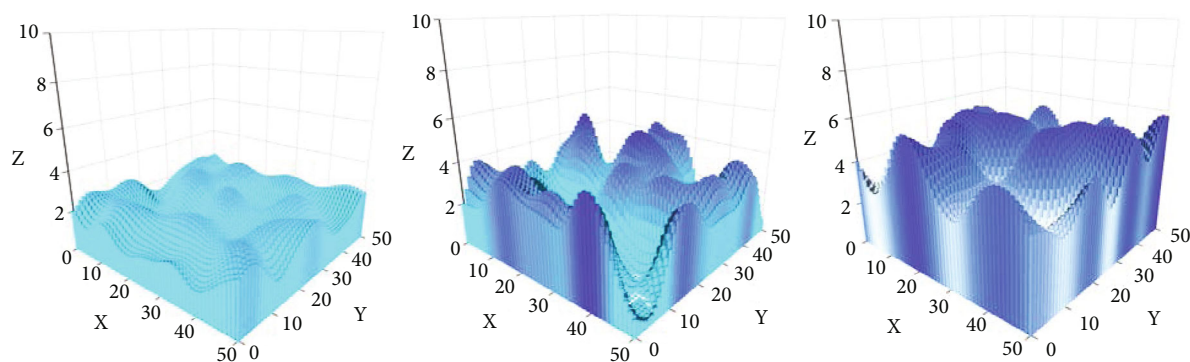


FIGURE 11: Analysis on the effect of the implementation of new music teaching mode.

theory, the model can establish the main factor system diagram of teaching mode. According to system theory, the relationship between various factors can be analyzed. According to the process theory, the order of setting up these factors can be determined. According to the theory of communication, the operation process of the teaching system can be analyzed. Model analysis results are shown in Figure 11.

**3.4. Research on the Concrete Reform of Music Teaching Mode.** Special attention is paid to the communication theory developed on the basis of the two theories. This theory is closer to the implementation of teaching activities and requires in-depth study and mastery. The systematic approach requires that teaching activities be regarded as a complex system with various factors closely linked together. Students need to consider the problem comprehensively and systematically. Process theory believes that everything appears as a process form. The processes can be transformed into each other under certain conditions, and the transformation of the process is not a simple repetition. Each transformation of the process can enter a higher stage. The research regards the music teaching process as a combination of multiple subprocesses. Through overall coordination and mutual support, the optimization of efficiency can be achieved. The communication method is to simplify the communication process into several components. The model continues to analyze the status and role of these elements in the communication process. There are interactions and connections between these elements. Teaching activities are the process of delivering corresponding content to teaching objects through teaching media in accordance with established teaching goals.

#### 4. Conclusion

From a practical business perspective, the research suggests strengthening the research on various teaching modes, curriculum forms, teaching content, and teaching methods. Research should accurately grasp various teaching models, curriculum forms, and teaching methods. The research suggests that students are proficient in using various teaching

methods. At the same time, it recommended actively carrying out teaching and research activities. The research has mastered the questionnaire survey and teaching resources. Lay the foundation for the follow-up reform of teaching mode.

First, strengthen research on teaching reform itself. Teaching reform itself is also a subject, which requires continuous learning and practice, to promote the teaching reform. For the reform of higher vocational music education, it is necessary to provide corresponding experience reference. Therefore, teachers and teams are required to learn and research various teaching modes according to actual needs. Research the curriculum format and teaching methods, and understand their advantages and disadvantages. Students must have proficiency in creating and using various teaching methods and means. At the same time, do a good job of investigation and research around specific teaching reforms. Accurately grasp the characteristics of music education in higher vocational colleges today.

Second, the teaching content must be updated in time. The purpose of music education is to enable students to acquire knowledge and abilities related to music. After the discipline has specified these goals, they constitute the teaching content. For example, after the knowledge of music was concretized, it involves many contents such as musical instruments, music theory, genres, characters, and works. The teaching content is complex and constantly enriched and developed. Therefore, we must select and update the teaching content according to the teaching requirements and the characteristics of the times. The research centers on educational purposes and disseminates content that students love to hear.

Third, we must continuously improve teaching methods. To achieve the teaching goal, we must rely on a certain dissemination carrier. With the advancement of science and technology and the development of the times, various modes of communication continue to emerge. The mode of communication greatly changes the way people behave. These communication methods provide a reference for teaching methods in terms of convenience, vividness, and interactivity. Therefore, music education in higher vocational colleges must also keep up with the times and continue to absorb

new elements. For example, based on online interactive platforms and microlectures, strengthen students' learning and research in this area. Focus on the characteristics of the era, school characteristics, and student personality. The research and development of teaching form is the key and difficult point of this article. Only by continuously carrying out teaching research and reforms and accumulating experience and resources can we gradually achieve better reform results.

## Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

## Conflicts of Interest

The author declares no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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