

Research Article

Innovation and Discrete Dynamic Modeling of College Music Teaching Model Based on Multiple Intelligences Theory

Chen Yi 

Music College of Xinjiang Normal University, Urumqi, 830002, China

Correspondence should be addressed to Chen Yi; 107621998010020@xjnu.edu.cn

Received 27 February 2022; Accepted 25 April 2022; Published 24 May 2022

Academic Editor: Yuan Li

Copyright © 2022 Chen Yi. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The development of music teaching mode in colleges and universities needs to take music as the main body and carrier to spread and inherit the music theory system. With the continuous innovation and development of science and technology, the teaching mode and teaching system have also ushered in new changes. How to let students understand the process of music teaching and better appreciate the charm of music is the main problem faced by educators. Faced with the above situation, starting from the theory of multiple intelligences, this paper studies the innovation and discrete dynamic modeling of music teaching mode in colleges and universities. Firstly, this paper discusses the application effect of this method in music teaching based on the theory of multiple intelligences. This paper investigates the actual development of multiple intelligences theory in college music teaching. Combined with the characteristics of multiple intelligences theory, modeling and analysis of students' interest changes in the intelligent music education model represented by the space vector model are carried out. Finally, this paper studies the discrete dynamic modeling of students' learning effect after the optimization and innovation of music teaching mode in colleges and universities under the theory of multiple intelligences. The results show that in the innovation of music teaching mode, personalized learning services should be provided based on students' interests. The theory of multiple intelligences can help teachers to effectively analyze the diversity characteristics and changes of students in teaching activities, and it is of great help to improve students' musical performance.

1. Introduction

The music teaching classroom and teaching mode in most colleges and universities in China still stay in the traditional teaching methods. The characteristics and forms of traditional teaching have always limited the innovation and optimization of music teaching mode in Colleges and universities [1]. With the rapid development of science and technology in the big data environment, we need to pay more attention to the music teaching mode based on the students' learning status and effect and from the perspective of all-round development. Add diversified educational methods and resources to the music teaching classroom to improve students' interest in music. Pay attention to students' classroom experience and the cultivation of music knowledge quality [2]. In the process of learning subject knowledge, students can also experience the changes of music style and the charm of music itself. Effectively improve their own music cells and have a new under-

standing of music creation ability [3]. In music teaching, teachers need to help students form their own learning methods and thinking processes and build music knowledge and music literacy into a clear context. In the teaching mode of diversification theory, teachers should start from innovative thinking, help students comprehensively use music knowledge and take music culture as the core content of learning. The purpose is to develop students' autonomous learning and innovative learning [4].

At present, there are still many problems in the music teaching mode in colleges and universities. Affected by the traditional teaching mode, most of the classroom environment is still very backward [5]. Teaching is self-centered and takes teaching materials as the main body of knowledge structure. Students do not participate in classroom activities many times. In the innovation of teaching mode, teachers do not start from the actual situation and still take the theoretical knowledge as the teaching basis. Many teaching

researchers believe that teachers should optimize and improve the teaching mode from the students' classroom situation in the process of music teaching. Find a teaching method suitable for each student's physical and mental development, and let students form their own learning atmosphere through multiple learning in the classroom. In view of the above, American psychology professors believe that human beings should have intelligent elements to intuitively show their ability from individual elements in basic language expression and mathematical logic [6]. The teaching of multiple intelligences theory has become the main popular teaching mode, which includes eight intelligences. You can choose the appropriate mode from each intelligent teaching mode. The theory of multiple intelligences also helps to change the music teaching mode to a diversified form. In the theory of multiple intelligences, each student has his own advantages and disadvantages. These different characteristics form a new combination, allowing students to get different cognitive feelings in the learning environment. Thus, the differences between people are formed. Integrating the theory of multiple intelligences into the music teaching model of senior high school can better reflect the purpose of innovation and optimization [7].

This paper is mainly divided into three parts. The first part mainly analyzes the background and development status of music teaching mode in colleges and universities under the theory of multiple intelligences. The second part first explores the application of multiple intelligences theory in music teaching in colleges and universities. Starting from the changes of students' interest behavior and personalized needs, this paper establishes an intelligent learning environment in the innovative teaching mode of multiple intelligences theory. The students' interest model is constructed, and the spatial vector method is used to quantitatively analyze the students' personality needs. Create the student interest model from the three-dimensional space model. Finally, the discrete dynamic modeling of students' learning effect in the innovative mode of music teaching in colleges and universities under the theory of multiple intelligences is studied. The third part analyzes the research results of music teaching mode innovation and discrete dynamic modeling in colleges and universities under the theory of multiple intelligences.

2. Related Work

Music is an art form, which has a very obvious impact on human behavior and thinking. At present, the limitations brought by traditional ideas in college music teaching mode are more obvious. Starting from the modern scientific and technological society, the music teaching model should be newly optimized and improved [8]. From the development of the Internet, students' thinking and learning habits have been affected by many factors. The traditional music teaching model is no longer suitable for the students in the current Internet era. Intelligent electronic devices have become a tool that every student will use. Because of its particularity, music has extremely diversified ways of expression. In the network platform, short video and multimedia

software can spread the charm and particularity of music [9]. Students can obtain music learning resources from the Internet, which brings challenges to the traditional music teaching model. Therefore, the teaching mode of multiple intelligences theory has become the main theoretical basis for changing the traditional teaching mode [10]. In the theory of multiple intelligences, each student's learning level and learning ability are different. With the cognition of society and the contact and exploration of the world, students' learning potential will be gradually displayed and expanded. This theory is also followed in college music teaching mode. Teachers should optimize teaching methods and bring intelligent teaching into them on the basis of multiple intelligences theory.

In English Teaching in the United States, students' learning differences and ability levels are divided according to the theoretical basis of multiple intelligences [11]. Carry out targeted strategy teaching for students with different learning abilities and levels. Improve the traditional teaching mode, start from teaching textbooks, and use computer technology to create interactive scenes. This virtual interactive place can help students play roles and experience deeply. Experience the charm of knowledge in learning, and achieve the purpose of improving logical thinking.

Many higher vocational schools in Japan have shifted the focus of English courses from theoretical knowledge to professionalism and practicality [12]. They believe that practical teaching can reflect students' different learning characteristics and give full play to students' subjective initiative. Using the teaching thinking of multiple intelligences theory to improve and innovate the English teaching mode, this new teaching method can bring a lot of inspiration and help to educators. It has a positive impact on students' English achievement and learning atmosphere [13].

Italy is a country full of art. These include many well-known art schools. In the art classroom of these universities, more attention is paid to the theoretical teaching method of multiple intelligences [14]. Starting from the personality of each student, this paper puts forward learning tasks according to the learning needs of different students. The students with the same learning level will be unified in formal teaching, and the students' initiative and creativity will be fully reflected in the teaching mode. This teaching model based on the theory of multiple intelligences can enhance students' love for art courses and achieve certain results in art training [15]. Based on the development and application of multiple intelligences theory in various countries, this paper also integrates this theory into the music teaching mode in colleges and universities. Some positive achievements have been made in the innovation of music teaching mode in colleges and universities.

3. Methodology

3.1. Research on Student Interest Model of College Music Teaching Innovation Model Based on Multiple Intelligences Theory. The theory of multiple intelligences plays an important role and nature in various fields of education. In the music teaching mode, it can effectively combine language

intelligence with theoretical knowledge. Language is a common tool for teachers to impart knowledge and students to each other. In the teaching process, teachers use language expression to express the subject knowledge, which is intuitively presented in front of students and can attract students' attention in class. So as to achieve the purpose of improving teaching quality and classroom learning atmosphere. In the music teaching mode, it can also use effective expression to attract students' attention and interest and transfer from the traditional theoretical knowledge to the dynamic learning process. Psychologists have proved that the process of learning is interactive. The intelligent teaching theory proposed in this paper emphasizes teaching by using students' learning interests. By stimulating students' independence and personalized needs, students can achieve the purpose of active learning. This has an important impact on students' life and study. With the advent of the Internet era, many big data technologies, cloud computing technology, and artificial intelligence have achieved effective results in various fields. Facing the process of modern society, the field of education has also ushered in new reforms and changes. The theory of multiple intelligences also emphasizes the diversification and digitization of learning knowledge. Information resources can help students form diverse interests and learning needs. Explore what you need in the ocean of knowledge, and form your own learning style. In the reform and innovation of music teaching mode in colleges and universities, we need to explore the personalized needs of students. Use big data background to provide information source for students' personalized data.

Personalized learning is also the main direction of teaching model innovation. The development of computer intelligence can effectively identify the characteristics and personality of learners. It is the main way to promote students' personality learning. Therefore, based on the above situation, some researchers propose to apply Bayesian network structure to create a student model in discrete dynamic modeling system. Analyze the characteristics of students' cognition, emotion, and interest in the intelligent learning environment. Take interest learning in music teaching as the main research object, and formulate personalized learning methods and plans. Interest mining is also one of the main problems in the field of learning resources. It combines students' hobbies and preferences with learning environment and motivation to analyze the changing trend of students' interests, so as to change teaching modes and strategies, in order to better meet the needs of students and improve students' academic performance and effect. We study the innovative model of music teaching in colleges and universities from interest modeling. By analyzing the changes of students' behavior data, we can judge the bias of interest feature set. At present, most of the learning modes are online teaching, and the online platform of music teaching can also be well developed and applied. The main research ideas and research directions of this paper are shown in Figure 1.

At the beginning of the study, the role of multiple intelligences theory in the teaching environment was explored by means of literature investigation and reading. Understand

the needs of intelligent learning environment and student interest model construction. This paper analyzes the factors affecting students' learning interest and behavior changes. The innovative mode of music teaching in colleges and universities proposed in this paper is intelligent classroom. This kind of intelligent classroom can reflect the "wisdom" characteristics in the theory of multiple intelligences. The intelligent classroom infrastructure is shown in Figure 2.

As can be seen from Figure 2, the whole intelligent classroom system mainly includes several basic system structures. A variety of branches are formed from technology and facilities, network perception, and visualization to jointly establish the model. This intelligent teaching mode can reflect the interactivity of music teaching. It is obviously different from traditional teaching methods in learning form and environment. In addition to building an intelligent teaching model, we also start from students' interests and use change vectors to express students' interest characteristics. In this paper, multiple variable structures are used to represent the change structure of interest among different students. Each vector corresponds to the student's subject of interest. The representative formula is as follows:

$$\text{Student} = \{a_1, a_2, a_3 \cdots a_n\} = \{(b_1, w_1), (b_2, w_2) \cdots (b_i, w_i)\}, \quad (1)$$

where a_i represents each student's subject of interest. We use the space vector model to represent the interest structure. Combined with the students' behavior characteristics under the theory of multiple intelligences, variables are used to represent the dimension of interest. The formula is as follows:

$$S = \{v_1, v_2, v_3 \cdots v_i\} = \{(l_1, w_1), (l_2, w_2) \cdots (l_i, w_i)\}, \quad (2)$$

$$S = \{v_1, v_2, v_3 \cdots v_i\} | 1 \leq i \leq n.$$

S represents students' interest in the subject and v_i represents the dimension of each vector. Starting from the multiple dimensions of interest behavior, we add attention, participation, and modality changes to the vector model. The expression of the model is as follows:

$$S_i = \{G_t, B_t, E_t\} = \{(G_t, W_1), (B_t, W_2), (E_t, W_3)\}. \quad (3)$$

S_i represents students' learning interest at a certain time in the teaching process, and G_t represents the classroom attention coefficient. B_t represents students' participation in the classroom. We also need to classify students' learning level in calculation. The specific steps are realized by means of mean clustering. Firstly, the specified objects are randomly selected to complete the minimum classification optimization:

$$\min \sum_{j=1}^k \sum_{c(i)=j} \left\| \times (i) - \widehat{\mu} \right\|^2. \quad (4)$$

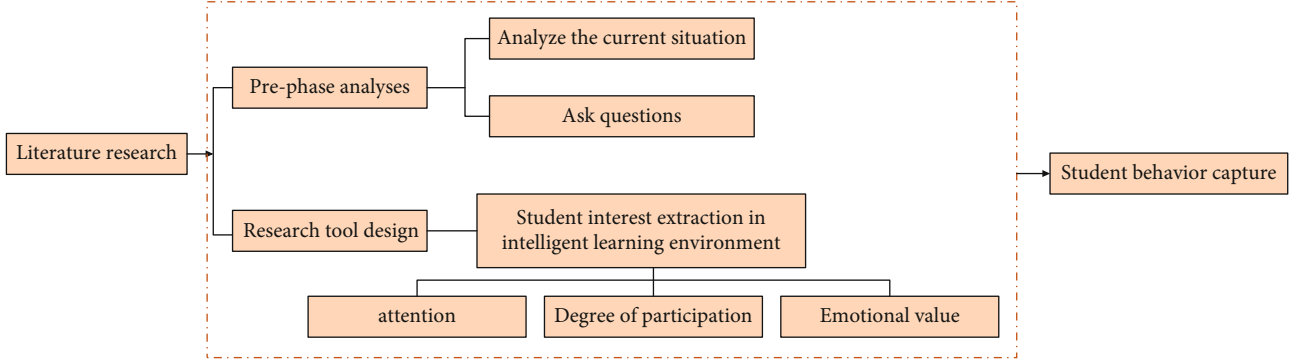


FIGURE 1: Research ideas and directions.

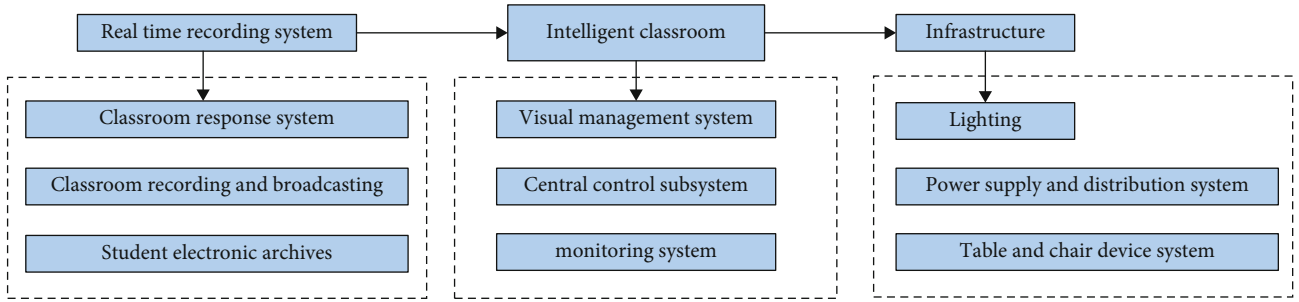


FIGURE 2: Intelligent classroom infrastructure diagram.

The second part adopts the minimum classification coding to simplify the homology:

$$c(i) = \arg \min \left\| x(i) - \hat{\mu}_j \right\|^2. \quad (5)$$

According to the three dimensions of space vector as variables, the interest behavior information is taken as the collection unit of classification. The center point is randomly selected as the interest level coefficient of students. In the division of attention level, students' behavior changes should be judged from the unit node. Calculate the weight value of student behavior change in unit time:

$$G = \sum_{i=1}^n s_i * w_i. \quad (6)$$

It specifies a unified unit time vector to capture the same behavior online and analyze the times of a certain kind of behavior. We found that in the music teaching mode, students' behavior can be divided into effective concentration, and the weight coefficient of attention concentration is as follows:

$$w_i = \frac{N}{N_A}. \quad (7)$$

Finally, we also need to analyze the degree of students' participation in the teaching model. The calculation formula is as follows:

$$\begin{aligned} \Pi &= \sum_{i=1}^n x_i w_i, \\ B &= \sum_{i=1}^n \sum_{j=1}^m x_{ij} w_{ij} * w_i. \end{aligned} \quad (8)$$

In the formula, the degree of students' participation is explored from two aspects. One is the occurrence times of attention behavior in unit time, and the other is the score of random inspection in class. B represents the coefficient of students' participation, and n represents the number of times each behavior occurs.

3.2. Research on Discrete Dynamic Modeling of Students' Learning Effect after the Innovation of Music Teaching Mode in Colleges and Universities. The traditional teaching mode is difficult to collect students' learning behavior and effect. Therefore, teachers can not adjust teaching strategies and optimize teaching methods in time, which leads to the unsatisfactory effect of students in music classroom learning. We put forward an intelligent and intelligent teaching model based on the theory of multiple intelligences. In this innovative and optimized teaching method, students' ability to accept knowledge and learning effect are analyzed through students' interest changes and behavior data. With the theory of multiple intelligences becoming the mainstream trend of teaching optimization in the field of education, we should also make rational use of it in the innovation of music teaching mode. Analyze students' interests and abilities in the teaching process.

Studying the factors affecting students' learning effect is an urgent problem to be solved to improve teaching quality. In the analysis and modeling of students' learning effect, the attention and participation in the natural environment are the main factors affecting the learning effect. One is the influence of students' own factors on learning effect. In the process of teaching and learning, the key to students' learning effect lies in their own. The second is the attention to the environment, and the external factors play a role through the internal factors. Therefore, the purpose of studying and discussing the influence of students' own factors on their learning effect is to give full play to students' subjectivity in learning. In the analysis and modeling of students' learning effect, attention and participation in the natural environment are the main factors affecting the learning effect. Firstly, we compare the samples of students randomly selected before and after the innovation of music teaching mode and judge their acceptance of the teaching mode of multiple intelligences theory from the aspect of learning interest, as shown in Figure 3.

It can be seen from Figure 3 that the interest of the sample of students before the optimization of the music teaching mode increased significantly and steadily. There was not much fluctuation. In the use of intelligent improved teaching mode, most students' learning interest has increased as a whole, so the whole sample data shows a leapfrog upward trend. In optimizing the classroom, we use student behavior data for effect analysis. Firstly, judge whether students accept new knowledge and whether they can solve and master the learning content independently from the expression characteristics. The facial features are encoded, and the students' expression features are obtained for marking. Identify the relationship between expression changes in different forms and learning effect. The weight coefficient in a certain unit time is calculated by a quantitative analysis method:

$$E = \sum_{i=1}^n l_i * w_i. \quad (9)$$

The calculation formula of weight can express the relationship between students' learning effect and expression characteristics in each unit time. Judge the total number from the occurrence frequency:

$$W_i = \frac{n}{N_E}. \quad (10)$$

Because of the intelligent teaching mode, the collected students' interests are in different environments and atmospheres. We need to normalize the data of attention and learning effect:

$$S_i = (G_i, B_i, E_i). \quad (11)$$

The dimension data representing the effect model are the same and can be processed in one. The standard deviation of variables between each dimension is as follows:

$$Z_i = \frac{x_i - \mu_i}{\sigma_i}. \quad (12)$$

The music teaching mode under the influence of multiple intelligences theory and the unaffected teaching mode were set up in the control group and the experimental group, respectively. The difference coefficient between the two groups is calculated by meta-analysis:

$$g_i = \frac{\bar{Y}E_i - \bar{Y}C_i}{S_i^c}, \quad i = 1, \dots, k. \quad (13)$$

Among them, $\bar{Y}E_i$ in the formula is the experimental group, that is, the effect after the optimization of the innovation mode. $\bar{Y}C_i$ is the control group, that is, the learning effect of traditional music teaching mode. From the result data, it can be seen that the learning effect of the teaching model optimized by the theory of multiple intelligences can be significantly improved.

4. Result Analysis and Discussion

4.1. Analysis of Students' Interest Model Based on the Innovative Model of Music Teaching in Colleges and Universities under the Theory of Multiple Intelligences. At present, the music teaching mode in colleges and universities lacks obvious professionalism and rationality in curriculum arrangement and the use of teaching materials. Many colleges and universities do not pay attention to music teaching and do not have more patience and achievements in cultivating students' music literacy. With the advent of the digital age, students' learning environment is easily affected by many aspects. Colleges and universities should pay more attention to teaching quality and teaching methods in the process of music teaching to realize the teaching of multiple intelligences theory. Diversified educational ideas have become the main research object in major educational fields in the world. Teachers need to guide students to experience knowledge in music classroom. Starting with the expansion of students' own professional skills, we continue to integrate music thinking into the educational model. Give full play to the cultural connotation and charm of music, so that students' learning habits can be guaranteed. Under the guidance of multiple intelligences theory, this paper analyzes the changes of students' interests from the aspects of intelligent teaching. Create a new music teaching mode. In the calculation of students' interest model, the quantitative analysis method is used to add students' attention level and classroom participation into the calculation model.

The research selected the survey results of daily class of music teaching of students in a university. This paper compares the random samples of students before and after the reform of music teaching mode and judges their acceptance of the teaching mode of multiple intelligences theory from the perspective of learning interest. Firstly, the learning behavior and posture of students in the intelligent innovative teaching mode are obtained, and the behavior model is obtained by using the dynamic capture system. This paper adopts the market xsens MVN dynamic capture system. It

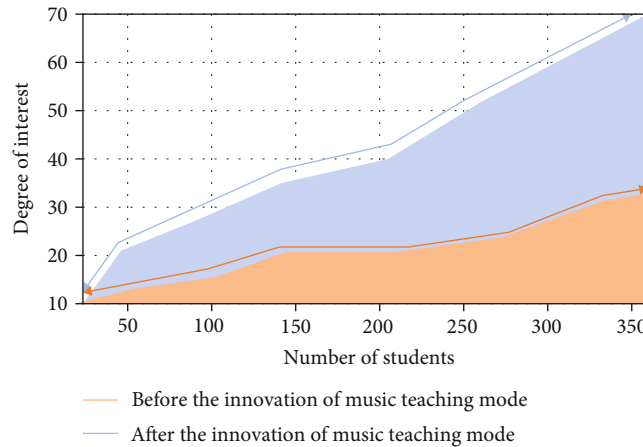


FIGURE 3: Changes of students' interest before and after the innovation of music teaching mode.

is a convenient, economical, and practical inertial motion capture system. Its unique feature is that it is not limited by ambient light and space distance. Pure motion capture data can be recorded without postprocessing. It is very suitable for all kinds of real-time performance applications. Taking every 4 seconds as the time node, the action target is extracted to form a video image. In the measurement of classroom participation, interactive behavior is the main object. Analyze the number of interactions between students and teachers, students, and students. We set up the control group and the experimental group for the innovative model of music teaching based on the theory of multiple intelligences. Explore the changes of the two in the degree of classroom participation, as shown in Figure 4.

It can be seen from Figure 4 that the experimental group formed by the innovative mode of music teaching can clearly see that the degree of students' participation shows an upward trend in the change of time interval. And in the calculation of attention, students can maintain a high degree of concentration in the learning process. The attention level also reflects the teaching effect after the innovation of music teaching mode. According to the change of attention coefficient and participation degree, teachers can accurately judge the change trend and personalized needs of students' interests, which has been significantly improved in teaching interaction.

4.2. Analysis of Research Results of Discrete Dynamic Modeling of Students' Learning Effect after the Innovation of Music Teaching Mode in Colleges and Universities. In the traditional classroom effect evaluation, many colleges and universities use the listening mode and evaluation form mode. It is necessary to constantly summarize the lectures to judge the effect of a course and students' learning. Although this method can improve teachers' professional level, it has uncertainty and instability. This evaluation method is easy to cause limitations of subjective results. Based on the theory of multiple intelligences, we innovate the music teaching model in Colleges and universities. In order to explore the learning effect and achievement change of students in the new model, dynamic discrete modeling is used for analysis.

Classroom attention, participation, and emotional attitude are still the main elements to evaluate students' learning effect. Attention is the behavior change and psychological activity of students, which can judge the degree of students' attention in the external environment. From a macropoint of view, the degree of classroom participation represents the change of students' interest coefficient and practical activities in the learning process. From the perspective of input, effective analysis of participation coefficient can judge the time and energy invested by students in the change of learning effect. Judge whether the learning effect of students exceeds the standard range in a certain period of time according to the changes of time and energy. Some researchers have shown that learning interest is positively correlated with time investment and learning effect. We analyze the change of students' learning effect under the music innovation mode in terms of time investment, as shown in Figure 5.

As can be seen from Figure 5, with the change of the number of students, the group learning effect and time investment participating in the innovative mode teaching show a positive correlation change. Therefore, the use of discrete dynamic modeling technology can effectively evaluate the learning process and learning effect, ensure the calculation accuracy, and quickly form scientific suggestions for teaching strategies. We integrate big data technology with education, analyze students' behavior changes and interest characteristics, and finally form a learning effect evaluation model suitable for the teaching mode of multiple intelligences theory.

Based on the above, intelligent teaching mode plays a vital role in music education, mainly as follows: first, it can promote and optimize the level of teachers. Intelligent teaching can directly optimize the level of music teachers. With the help of artificial intelligence, music teachers can carry out self-learning more efficiently and conveniently, so as to continuously optimize the level of teachers. Second, it can promote the improvement of teachers' teaching quality and efficiency. Relying on the big data analysis of intelligent teaching, teachers can quickly understand students' learning level and learning background. Teachers can quickly enter the role of teaching workers and carry out effective teaching

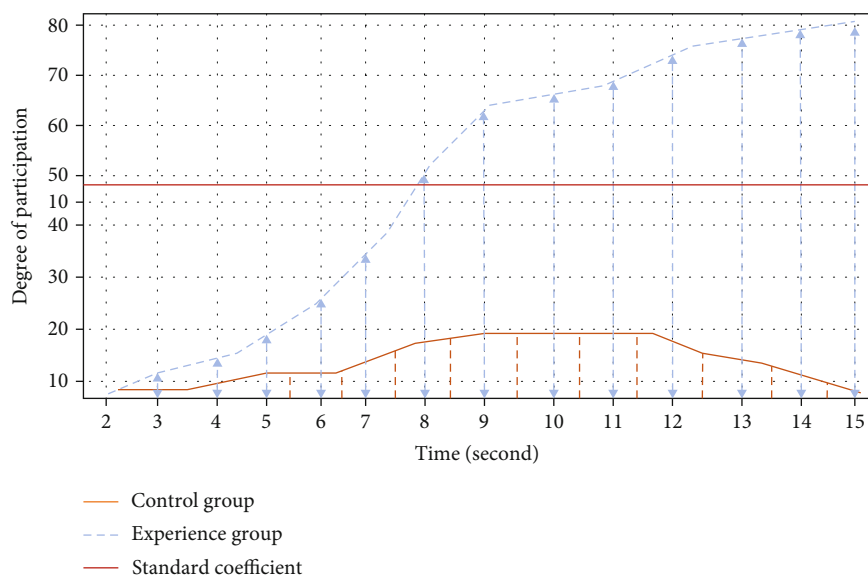


FIGURE 4: Comparison of participation between control group and experimental group.

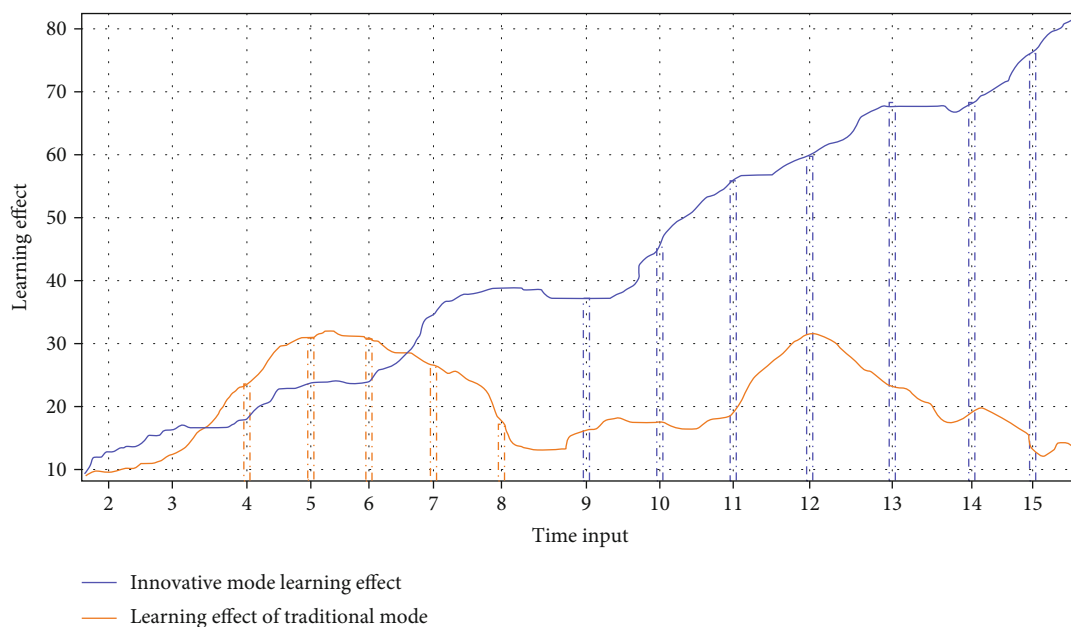


FIGURE 5: Changes of students' learning effect before and after music innovation mode.

work for students. Meet the educational needs of every student, and effectively improve teachers' teaching quality and efficiency. Third, it can improve students' learning efficiency. By introducing artificial intelligence, students' subjective initiative in learning music can be mobilized. Help students realize the shortcomings in their own learning, urge students to learn, and then effectively improve students' learning efficiency.

5. Conclusion

With the changes of the times, the traditional teaching model is no longer suitable for today's students and educa-

tional environment. Under the influence of the Internet, students' interests change very complex, and their personalized needs are also different. More and more online teaching modes and intelligent teaching modes gradually replace traditional teaching. In the process of education, multiple intelligences theory emphasizes that teachers should properly guide and intervene to form students' independent learning habits. Based on the above situation, we analyze and study the innovation of music teaching mode in colleges and universities on the basis of multiple intelligences theory. Firstly, the related contents of multiple intelligences theory are briefly described, and the traditional music teaching mode

is changed from the basic theory. With the support of the Internet and big data, the intelligent teaching environment is adopted for innovation and improvement. In the intelligent teaching mode, the changes of students' interests and personalized needs are analyzed and modeled, and the main factors affecting the teaching effect are judged from the students' interest model. Finally, the discrete dynamic modeling technology is used to detect the learning effect of students in the innovation mode in the big data environment. According to the learning effect of students, judge whether the innovation of music teaching mode in colleges and universities under the theory of multiple intelligences is applicable and significant. The results show that the theory of multiple intelligences has a positive impact on the innovation of music teaching model in Colleges and universities. It can help teachers form a student-centered education model with students' interest changes and personality needs as the main body. It has an important impact on students' diversified development and the improvement of their potential. The research has some innovation. However, this paper does not help students establish the relationship between knowledge well in the research process. For difficult knowledge, it lacks effective supporting means to help students understand and explore difficult knowledge. Therefore, in the future research, it is also necessary to conduct in-depth research on the establishment of learning relationship ties.

Data Availability

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

Conflicts of Interest

The author declared that there are no conflicts of interest regarding this work.

References

- [1] W. Jiabin and L. Shuai, "Research on the reform of social work teaching mode in Colleges and Universities under the theory of multiple intelligences - Taking Tibet University for nationalities as an example," *Shanxi Youth*, vol. 34, no. 19, pp. 39-40, 2021.
- [2] S. Xiaoping, "Analysis of multiple intelligences theory in the field of comprehensive exploration of primary school art," *Teacher Expo*, vol. 24, pp. 89-90, 2021.
- [3] M. Zaiwen, "Optimization of physics classroom teaching mode in Senior High School under the theory of multiple intelligences - Taking "Newton's first law" as an example," *New Curriculum*, vol. 23, pp. 94-95, 2021.
- [4] S. Haiyan, "Research on group cooperative teaching model of primary school English based on multiple intelligences theory," *New Curriculum Teaching*, vol. 8, pp. 80-81, 2021.
- [5] X. Zhuohua and H. Jing, "On the training mode and teaching design reform of financial news talents from the perspective of multiple intelligences theory," *Higher Education Forum*, vol. 3, pp. 40-44, 2021.
- [6] C. Xiuqing, "Construction and application of effective English reading teaching model in junior middle school from the perspective of multiple intelligences theory," *Campus English*, vol. 29, pp. 123-124, 2020.
- [7] W. Lingling, Y. Guoliu, and W. Yan, "Application of multiple intelligences theory in clinical practice teaching of obstetrics and gynecology," *China Continuing Medical Education*, vol. 13, no. 3, pp. 50-54, 2021.
- [8] L. Ning and D. Jin, "Research on public English teaching model for postgraduates based on multiple intelligences theory," *Journal of Hebei Energy Vocational and Technical College*, vol. 20, no. 2, pp. 81-83, 2020.
- [9] W. Wei, "Research on college English teaching model of multiple intelligences," *Educational Modernization*, vol. 7, no. 42, pp. 11-14, 2020.
- [10] Q. Xiaojin, "Application of multiple intelligences theory in biology teaching in junior middle school," *Enlightenment and Wisdom (middle)*, vol. 3, no. 5, p. 67, 2020.
- [11] S. Hongrui, "Research on the application of multiple intelligences theory in college English reading class," *Science and Technology Vision*, vol. 9, no. 14, pp. 58-60, 2020.
- [12] D. Yiwei and Z. Rui, "Research on diversified teaching model of nursing English under the guidance of multiple intelligences theory," *Intelligence*, vol. 7, no. 5, p. 107, 2020.
- [13] C. Jie, "Research on business English reading teaching in higher vocational colleges guided by multiple intelligences theory," *Cultural and Educational Materials*, vol. 5, no. 2, pp. 230-231, 2020.
- [14] H. Qingbin, "Analysis on the construction of college English teaching under the theory of multiple intelligences," *Shanxi Youth*, vol. 15, no. 24, p. 297, 2019.
- [15] X. Jianjun, "Exploration and practice of "data structure" course based on diversified teaching mode," *Microcomputer Application*, vol. 35, no. 12, pp. 54-57, 2019.