Analysis of Music Online Teaching Curriculum Arrangement Based on BP Neural Network Model

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Abstract. Music online teaching course is a course based on Internet human-computer interaction, which has the feasibility of technology, concept and conditions. However, the rationality of online music teaching curriculum arrangement will directly and objectively reflect the actual teaching quality of the course. By reducing the interference factors in the process of online course arrangement, we can improve the applicability of the evaluation method based on BP neural network model. Music online teaching course can enhance students' comprehensive artistic quality, which will better cultivate high-quality, compound music art talents. The lack of normal characteristics in online music teaching will lead to the imbalance of curriculum structure. Therefore, the value of online music courses may not be reflected. At the same time, the single content or maladjustment of curriculum content will result in disconnection with basic education, which will ignore the "irrational" phenomenon of music students' professional advantages. Therefore, this paper puts forward some suggestions, which will be more reasonable to set up music online teaching courses.

Keywords: BP Neural Network Model, Music Online Teaching, Curriculum Arrangement

1. Introduction

At present, online music teaching courses are widely offered on various network platforms, which can better cultivate students' basic ability and practical application ability. Therefore, music online teaching course is more and more important, which requires us to ensure and improve its teaching quality [1]. Therefore, we must reasonably arrange music online teaching courses, which will be more reasonable configuration. Therefore, we need to establish a set of operational music online teaching
curriculum arrangement method, which is also an important problem to be solved. Therefore, based on BP neural network model, this paper directly establishes a method of curriculum arrangement [2].

At present, the music online course platforms in China mainly include "MOOC of Chinese University", "Haoda online", "Xuetang online" and "Yangyin online". With the increase of the types and quantity of music courses year by year, the music online courses can be divided into music professional theory courses and music general education courses. At present, music lovers can find their own courses in the online course platform, including music history theory, traditional music, national music, music aesthetic literacy, etc [3]. Music online teaching course is a kind of course with students as the main body. According to the teaching content and teaching object, teachers can guide students to complete the understanding and practice of music online course by using heuristic, case-based, seminar based, lecture based and other teaching methods. This is a course that requires students to practice independently. Through the artificial neural network algorithm, we can set up the curriculum system more reasonably [4]. BP neural network is an algorithm that imitates the neural conduction mechanism of human brain. According to the bionics principle, the artificial neural network is interwoven into a network algorithm [5]. By inputting signals, we can get output after intelligent processing, which can reduce the interference of human subjective factors. Therefore, through BP neural network, we can ensure the objectivity, fairness and effectiveness of music online teaching course arrangement [6].

2. Basic theory of artificial neural networks

2.1. Structure of neural networks

After the model of the neuron is determined, the characteristics and ability of the neural network mainly depend on the network's topological structure and learning method. The structure of the neural network has the following basic forms. The interconnection network structure is shown in Figure 1.

First, interconnection networks. Networks are formed by the interconnection of multiple neurons, and the output of some neurons is fed back to the same or front neurons. In this way, the forward and reverse flow of signals can be realized.

Second, forward network. Neurons in the network are arranged in layers. The first layer is the input layer, the last layer is the output layer, and the middle layer or more layers are the hidden layer. There is no interconnection between neurons in the same layer. In this way, signals from the input layer to the output layer flow through unidirectional connections, and neurons connect from one layer to the next.

Thirdly, horizontal network. The network itself is forward, and its neurons in the same layer are transversely connected with each other. We can achieve lateral inhibition or excitation between neurons in the same layer. Or we can divide the neurons into several groups, each acting as a whole.

2.2. BP model

BP model is also called Back Propagation Network and Multilayer Forward Network. The structure of BP model is shown in Figure 2.
3. Feasibility of online music theory course

3.1. The technology is feasible

Online teaching is a teaching platform based on cloud computing technology. Users can log in and learn through registration. Teachers can design course content and share teaching resources, which can design teaching forms through administrator identity to enrich teaching mode. We can strengthen students' basic knowledge and practice by guiding students to participate in the topic, thinking and completing the target task. As the teachers who develop the curriculum, we need to build a curriculum team, which will better improve the collective curriculum.

3.2. The idea is feasible

Compared with the traditional teaching, online courses break through the limitations of the original teaching environment and other objective conditions, which provides students with more independent choice of courses and learning self-control. At the same time, teachers can also greatly improve teaching efficiency, which will achieve information-based teaching. Both teachers and students enjoy the convenience brought by information technology, which requires us to integrate traditional teaching and information teaching. At the same time, teachers and students should change the traditional concept, which will better accept and practice the information-based teaching mode.

3.3. The conditions are feasible

Through the construction of online teaching system, we can build and run the offline smart classroom carrying information teaching. Through the purchase of cloud computing technology teaching platform services, colleges and universities can better carry out basic teaching, which requires a certain amount of technical and economic costs. Therefore, colleges and universities can build online teaching system, which can provide material guarantee for students to learn music courses online.

4. Music online teaching curriculum
The training objective of music online teaching course is based on curriculum setting. The training goal of Musicology Major in Colleges and universities is to cultivate high-quality compound art talents with innovative spirit and practical ability.

Table 1. Music online teaching curriculum schedule

| Module                        | Specific courses                                           | Time | Semester | Proportion |
|-------------------------------|-----------------------------------------------------------|------|----------|------------|
| Music Foundation Course       | Music theory and solfeggio                                | 128  | 8        | 12%        |
|                               | Analysis and writing of polyphonic music                   | 128  | 8        | 12%        |
|                               | Chinese and foreign music history and appreciation         | 128  | 8        | 12%        |
|                               | Chorus master                                             | 96   | 6        | 9%         |
|                               | Music, instrumental music, piano                           | 96   | 6        | 9%         |
|                               | Chinese and foreign national music                        | 93   | 6        | 9%         |
|                               | Body training and choreographer                            | 108  | 7        | 11%        |
| Music Courses                 | Appreciation of famous dance works                       | 48   | 3        | 5%         |
|                               | Choreography                                              | 16   | 1        | 2%         |
|                               | Clarinet performance and appreciation                     | 64   | 4        | 6%         |
|                               | Erhu performance and appreciation                         | 64   | 4        | 6%         |
|                               | Performance and appreciation of bamboo flute               | 64   | 4        | 6%         |

5. Exploration of online music theory course mode

5.1. Flipped classroom for music theory course

The theoretical courses of music major in Colleges and universities include music basic theory, composition technology, music history theory, ethnomusicology, music teaching method and music aesthetic quality, which are closely related to music score and sound. Through listening, analyzing and understanding, we can make clear the soul of music works. We need to preview the online music theory course before class, which will make it easy for students to obtain music score and audio information. Through preliminary cognition, we can study music score and listen to music, which will improve the efficiency of classroom learning.

5.2. Integration of teaching resources based on Curriculum
Music theory course involves a vast number of works. According to nationality, region, era and genre, we can classify them from different angles. Through long-term learning and teaching activities, teachers can accumulate audio and music materials, which will present excellent resources on the online course platform. Through the online course, students can master the audio, music score and literature related to the course. At the same time, online on-demand learning is not limited by time, place and frequency, which will help to repeat and consolidate knowledge.

5.3. Mixed music teaching based on the combination of online and offline

Education is not only the transmission of knowledge. The teaching of any course can’t be regarded as learning a knowledge in isolation. The emotional link runs through the whole teaching process. Therefore, the online and offline hybrid music teaching mode has greater advantages, which will provide online teaching with offline reality. Through the cloud platform, teachers can realize the preview and homework of the course. By solving the problems in online learning, we can combine the advantages of traditional courses and online courses.

6. Conclusion

According to the characteristics of music online teaching course, this paper determines the course arrangement based on BP network, which can comprehensively and objectively reflect the influence of the course. Based on BP network, we can reduce the subjective factors in the course arrangement, which will improve the applicability of the evaluation method. Music online teaching course provides us with a new idea, which will have higher practical application value.

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