

Ideological and Political Function Modeling of College Music Education Based on Improved Neural Network

Liya Xu, School of Music, Xuzhou Kindergarten Teacher College, China*

ABSTRACT

In the new situation, the state attaches great importance to the ideological and political work in colleges and universities. In order to optimize the function of ideological and political education in colleges and universities, this paper puts forward a modeling method based on improved neural network. Combining ideological and political education with music education organically, this paper studies and calculates the influence relationship and optimizes the structure of ideological and political function model of university music education combined with neural network principle. It puts forward effective strategies to promote the integration of the two.

KEYWORDS

Ideological and Political Function, Music Education, Neural Network

INTRODUCTION

In the 21st era, the type of talents needed by the society should have excellent moral cultivation, higher education, strong physical and psychological endurance and good artistic accomplishment, among which moral cultivation is the most important. However, in the face of the current information development, fierce competition and the coexistence of a variety of social life values, the ethical form and good value of university pupils are also changing day by day. The previous philosophical and radical teaching mode and content have been unable to adapt to the internal needs of college students. Only by charge step with the periods, persisting in expanding and Innovating Philosophical and radical teaching projects, educational models and methods, and reestablishing a new system of Philosophical and radical education in Colleges and universities, can we meet the internal needs of talent development in Colleges and universities in the new century, so elegant music education gradually develops into an indispensable key link in the contemporary Philosophical and radical education system. The study of politics in education has two basic foundations as an academic discipline: the first is based on radical science theories, while the second is based on organizational theory.

At present, in order to adapt to the growth of Philosophical and radical teaching, the integration of Philosophical and radical teaching and campus curriculum is put forward, in which the integration of music education and Philosophical and radical education is very necessary. Music education plays a significant part in university pupils' physical and rational development and social personality formation (Mehren et al, 2018). This work revision the association among the Philosophical and radical functions of music education, explores the effective construction strategies of Philosophical and radical function model of music education in universities and campuses, and promotes the

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*Corresponding Author

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integration and growth of music teaching and Philosophical and radical education (Ortiz-Echeverri et al, 2018). From the perspective of music teaching, to create a novel mode of Philosophical and radical teaching in Academies and campuses can provide effective reference materials for stimulating the effectiveness of music education and improving the actual effect of Philosophical and radical teaching in universities and academies. This value is mainly reflected in the solution of practical problems. In addition, as far as music education itself is concerned, it can further expand the specific content of music education, further improve the effectiveness of music education, and give complete production to the part of music teaching in the quality teaching system. It is suggested that all kinds of practical activities should be included in the curriculum management, the credit should be set and planned, the curriculum standardization should be implemented, the flexible combination of curriculum setting and proportion, and the music education curriculum type and Philosophical and radical function proportion should be reasonably arranged according to the evaluation results (Panwar et al, 2019). Standardized curriculum is the belief that all schools across the country should teach the same curriculum to their students so that they are all on the same level. Practice courses can be personalized according to the Employment Tendency of some students. At the same time, schools should timely adjust the curriculum and teaching content according to the problems in the implementation process, enhance the pertinence of the curriculum, truly accomplish the determination of knowledge for request, reduce or avoid the phenomenon of high scores and low abilities.

A SURVEY OF THE PHILOSOPHICAL AND RADICAL FUNCTIONS OF MUSIC EDUCATION IN COLLEGES AND UNIVERSITIES

Great changes have taken place in China's music education after the reform and opening up. With the popularization of nine-year compulsory education, higher education has entered the stage of popularization. The widely held concept of scientific popularization is based on a two-stage model: first, scientists generate true knowledge, and then popularizers disseminate streamlined versions to the general population. For the country to cultivate tens of thousands of technical personnel, college music education has become a significant force in the construction and development of the whole society. In recent years, the state has issued a series of preferential policies to vigorously develop education, grant grants and reduce tuition fees for rural students. In instruction to comprehensively encourage the growth of China's teaching, the State Council issued the "outline of revitalizing education", which clearly puts forward that education should attach importance to moral education, and requires higher vocational colleges to strengthen the moral education of students and strive to improve their moral education level. Higher education pays attention to the cultivation of high-quality and skilled talents, advocates the combination of work and study, and strengthens Philosophical and radical education, which is conducive to the cultivation of students' morality. Music education is an important part of art education. It has its unique advantages in cultivating students' emotion and developing their thinking ability. Music is listed as "three major majors" and still in the middle of secondary schools. Based on this, this paper investigates the current situation of music courses in Colleges and universities and selects 8 universities in a city to carry out the survey and statistics as is shown in Table 1.

Table 1. Investigation on the current situation of music courses in colleges and universities

Number of schools surveyed	Set up music compulsory course	Offering music elective courses	Offering music elective courses	Music classroom	Music Club
8	nothing	5	6	nothing	13

Through the investigation of music courses in 8 ordinary secondary schools, it is found that most of the current music courses are elective courses. Music education is not popular, but among students, music is very popular. Music fans and music students are eager to learn more about music and enrich campus cultural life under the influence of music art. Secondary schools use music to carry out Philosophical and radical education. Ideology is the superstructure of a civilization, consisting of the traditions and culture that make up a society's prevailing ideas. Music can express people's inner sadness, anger, respect and love through different sounds, so it can move people with emotion and educate people with aesthetics. Obviously, the role of music in the implementation of Philosophical and radical education does not lie in preaching. It has a subtle influence on people and makes people get the nourishment of beauty. The cohesiveness and appeal of music can't be compared with any other art form. It can make people have emotional resonance, develop mind and shape personality under the influence of music. Music education is a subject of study in which educators are prepared to work as elementary or secondary school music instructors, as well as school or conservatory group directors. Music education plays an important role in the Philosophical and radical training of students. Through the actual investigation and analysis from November to December in 2019, there are more than 600 questionnaires, 568 of which are recovered, and the effective rate is 98%. A simple formula is used to obtain the effective interest rate: $r = (1 + i/n)^n - 1$. The specific survey situation is shown in Table 2 and Table 3.

Table 2. Investigation on students' preference and knowledge of music

Category	Number of people	like music	To know the simple notation	Reading staff	Musical instrument performance
Source of urban students	213	96.9%	46.7%	7.48%	13%
Rural students	355	88.5%	13.8%	2.3%	6.5%

Table 3. The function of music in Philosophical and radical education and psychological training

The psychological reaction of enjoying music		Functional cognition		Psychological reaction	
Association	82%	Improve interest	87%	Inspire enthusiasm	70%
		Upgrade your taste	65%	Adjust your mood	92%
The situation of indulging in music	61%	change sb.'s	62%	Release the pressure	95%
		Moral promotion	59%	Purify the mind	60%

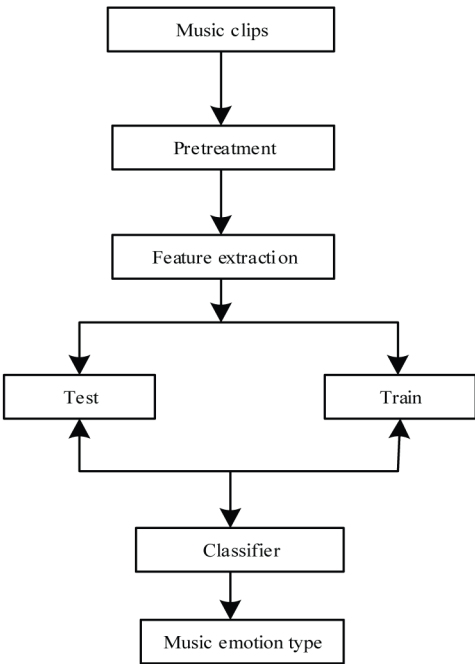
The study found that: College Students' interest in music is widespread. If music is integrated into Philosophical and radical teaching, philosophical and radical course is no longer the teacher's sermon, but becomes vivid and easy to understand. This work places advancing the new direction of investigate on the part of music education in Philosophical and radical teaching.

PHILOSOPHICAL AND RADICAL FUNCTION MODELING OF MUSIC EDUCATION IN COLLEGES AND UNIVERSITIES

Optimization of Philosophical and Radical Work Mode of Music Education in Colleges and Universities

Ideology is the wisdom crystallization accumulated by the Chinese nation for a long time and is the precious spiritual wealth of Chinese civilization. Philosophical and radical teaching has a profound impact on China’s philosophical and cultural trend and social order, greatly enhancing the cohesion of the Chinese country (Natsis et al., 2018). University Philosophical and radical teaching should pay attention to realize its due value of human social development. The classification model of college music emotional characteristics is classified, and the classification results are obtained. A classification model attempts to draw a conclusion from the training data. It will forecast the class labels/categories of the new data. A feature is a measurable property of a phenomenon that is being observed. The following figure shows the overall structure of the classification method of college music emotional characteristics (Tleubay et al., 2020). The following are some commonly used music signal features, feature extraction and music emotion classification methods. Based on this, the philosophical and radical function structure of music education is optimized, as shown in Figure 1.

Figure 1. Optimization of philosophical and radical function structure of music education

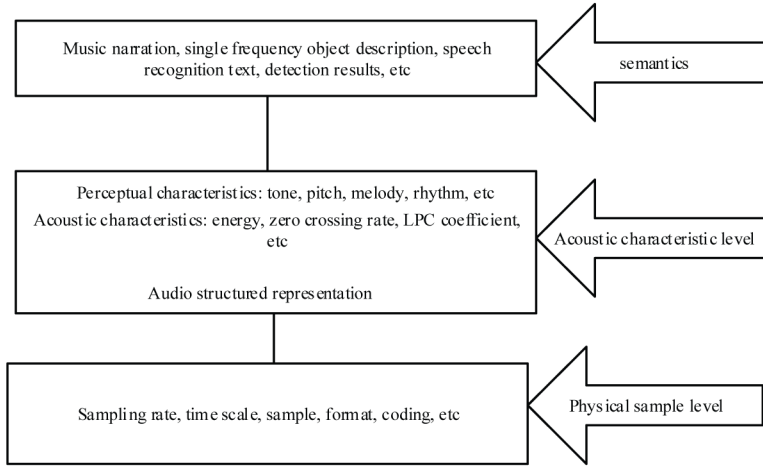


First the music clips are entered in the feature extraction part. It can be divided into test and train. Then the classifier is produce the music emotion types.

In the procedure of constructing the philosophical and radical function model of music education, we need to classify the music categories (Hattinger, 2018). Founded on the score feature withdrawal, the function model can be divided into three levels: the bottom layer is the sample coating, the middle layer is the feature layer, and the upper layer is the semantic layer. The part of an item that

is the lowest, deepest, or furthest away. a valley at the bottom of a hill 2 the position with the least importance or success. A semantic layer is a business representation of company data that enables end users to access data using conventional business terms independently. The higher the abstraction is, as shown in Figure 2.

Figure 2. The hierarchy of philosophical and radical function structure of music education in colleges and universities



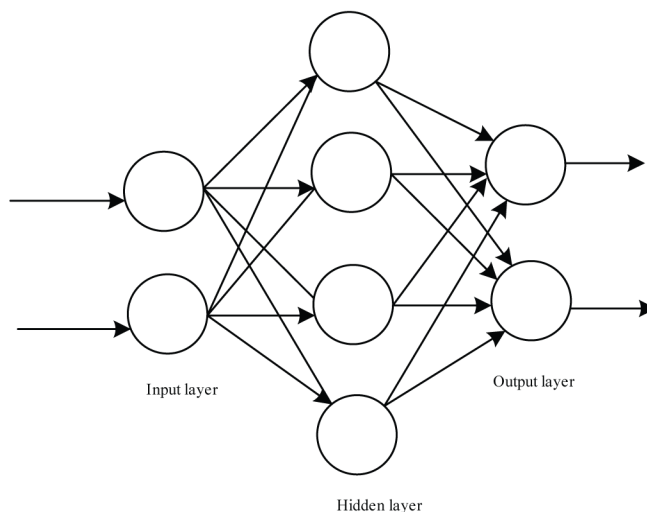
In the mentioned level, the low-level sample size represents the flow pattern of music content, the low-level sample size represents the melody, tone and other acoustic characteristics, the high-level sample size represents the audio semantics, and the low-level sample size represents the acoustic feature layer features (Vila-Couñago et al., 2020). Any acoustic property of a speech sound, such as its basic frequency or formant structure, that may be recorded and studied. The characteristic parameters of Philosophical and radical function of music education in colleges and universities include the change of average peak valley difference W and melody X. If the weight coefficient w represents the degree of separation. Then the teaching feature algorithm is as follows:

$$y = \begin{cases} 1, & \sum_{i=1}^n w_i x_i - \theta \geq 0 \\ -1, & \text{else} \end{cases} \quad (1)$$

In two-dimensional space, neurons distinguish two kinds of samples by linear classification. The neural network generally adopts the multilayer perceptron network shown. A feed forward neural network augmentation is the multi-layer perceptron (MLP). There are three layers in it: an input layer, an output layer, and a hidden layer.

Each nerve cell layer has its own weight matrix difference, input value output, etc. For the application of music classification, we can hide the neurons (Işık & Inallı, 2018). The artificial neural network is used to classify music. Artificial neural networks (ANNs) are rudimentary electronic networks of neurons based on the brain's neural structure. In command to confirm the rationality and rationality of the model construction, the structure model of the neural system is optimized, as shown in Figure 3.

Figure 3. Neural network structure model



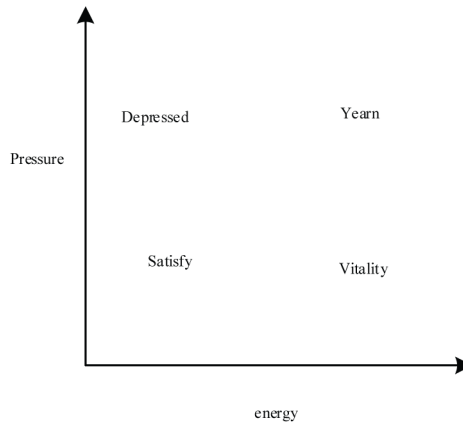
In the procedure of model building, the focus of music education and philosophical and radical teaching is different. A community practice in which a community or a social organisation uses specific ideas, concepts, radical viewpoints, and moral values to strengthen the ideology of students. Under the cultivation of Philosophical and radical functions, music education should enable students to form their personalities (Dong & Wang, 2020). Music education in Philosophical and radical teaching has more fun and freedom than compulsory education. Philosophical and radical education is a kind of normative education, which focuses on the cultivation of students' will restraint ability and logical thinking ability of good behavior (Wang et al., 2018). It has a certain compulsion and pays attention to the cultivation of social personality. Philosophical and radical education is different from music education (Muñoz et al., 2020). It can make education lively and make students actively accept education. As two important parts of education, music education and Philosophical and radical education are independent, differentiated, unified and closely related. Most of the students are in the long-term physical and mental development stage (Ovbiagbonhia et al., 2020). These people are immature in thought, behavior and psychology. They're very malleable. Integrating music education into Philosophical and radical education, attracting students, combining the two organically and giving full play to the charm of school music education can be used as a supplement to school music education.

Optimization Algorithm of Philosophical and Radical Function of Music Education in Colleges and Universities

At present, there are many controversies about the concept and definition of curriculum. Generally speaking, it involves the learning process and curriculum arrangement. In a broad sense, it refers to the general designation of all disciplines stipulated by the school's training objectives, while in a narrow sense, it refers to specific disciplines (Pittich et al., 2020). Therefore, the curriculum of music education is the foundation, core and decisive, which should focus on the skills, methods, materials and evaluation of teaching and scientific research. From the perspective of practical music education concept, music curriculum has richer and more unique connotation. With the development of society, music, as a form of education, has also emerged (Estriegana et al., 2019). It contains a certain content of radical thought and morality. Seeking truth and beauty is the essential feature and ultimate goal of music education. At present, there are mainly two modes to analyze the structure

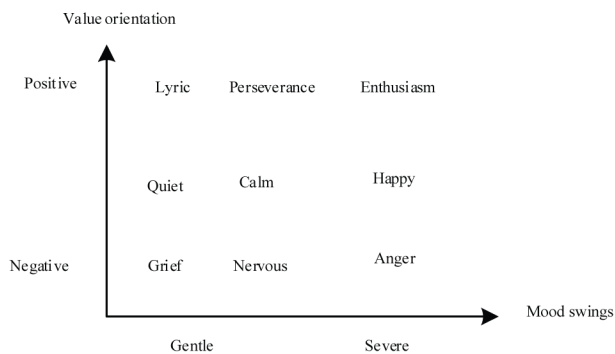
of human emotion (Bozic et al., 2018). Based on this, the value function structure of college music emotional Philosophical and radical education is optimized, as shown in Figure 4.

Figure 4. Value function structure of music emotion philosophical and radical education in colleges and universities



On this basis, it describes the characteristics of Philosophical and radical functions in music education from two dimensions of “value orientation” and “emotional fluctuation”, as shown in Figure 5.

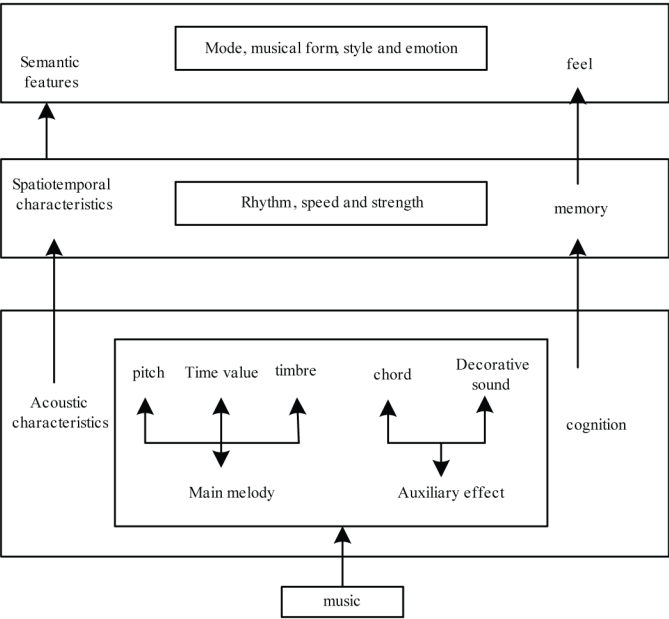
Figure 5. Types of music philosophical and radical emotional structure



Philosophical and radical education in colleges and universities are a form of Philosophical and radical views on college students. Students have internalized the widely accepted norms and concepts of behavior in the society, which makes them become people with strong self-control ability of right and wrong (Xiao et al., 2020) (Kang et al., 2019). Philosophical and radical education and other education constitute a complete education system, which is indispensable (Choe et al., 2018). The function of music lies in the expression of emotion, which integrates various basic elements of notes, shows the complex and rich emotional world of human beings in many aspects, and cultivates students' Philosophical and radical cognition (Estévez et al. 2018). When people listen to beautiful

music, their mood will get better, when they listen to quiet music, their mood will become calm, when they listen to wonderful concert, their mood will become happy. Modern psychology believes that music is a non-semantic organization expressed in the form of sound (Samuel et al., 2018). The ability of music to communicate semantic meaning is referred to as music semantics. The ability to express and transfer meaning is a major characteristic of language, and whether music possesses some of the same power has been the topic of current research (Petelin et al., 2019) (Jiang et al., 2018). Through the comprehensive study of art and Philosophical and radical science, the cognitive structure of Philosophical and radical function of music education is optimized, as shown in Figure 6.

Figure 6. Cognitive structure of philosophical and radical function in music education



In the process of music education, it is necessary to reasonably guide students to grasp the main contradictions, establish models under the guidance of Integrating Philosophical and radical theory with practice, and need appropriate assumptions (Balamurugan, & Salomi, (2020). It is assumed that during the music teaching period, the proportion of the number of learners is recorded as $s(t)$ at time t , the daily music influence degree is λ , and the daily teaching time is μ . Using the improved neural network principle, three groups of population variables are determined, and the SIR model is established by combining the initial time proportion. The SIR (Susceptible – Infected – Recovered) model was utilised. It’s a simple model for creating, simulating, and analyzing infectious diseases. The specific algorithm is as follows:

$$\begin{cases} \frac{dS}{dt} = -\lambda SI, & S(0) = S_0 > 0 \\ \frac{dI}{dt} = \lambda SI - \mu I, & I(0) = I_0 \geq 0 \end{cases} \quad (2)$$

In the process of music education, the algebraic symbol of the two sampling points before and after the discrete signal in the sound time domain is called the signal zero crossing rate, which is recorded as m . It reflects the spectrum characteristics of the signal to a certain extent, and has an impact on students' emotion and Philosophical and radical cognition. The influencing factor is N . Based on this, the paper calculates the concentration parameters of music Philosophical and radical influence, and the specific formula is as follows:

$$Z_i = \frac{1}{2(N-1)} \sum_{m=1}^{N-1} |\text{sgn}[x(m+1)] - \text{sgn}[x(m)]| \quad (3)$$

where $x(m)$ is the time domain of discrete audio signal, N is the sampling number of a frame signal, and $\text{sgn}[\cdot]$ is the symbol function. A non-quantized discrete temporal signal can take any value within a certain range, whereas a digital signal can take any value from a finite set of amplitudes:

$$\text{sgn}[x] = \begin{cases} 1, (\lambda \geq 0) \\ -1, (\lambda \leq 0) \end{cases} \quad (4)$$

This model is composed of a weighted superposition of an M -order Gaussian density function, according to the central limit theorem, the density function of the normal distribution, which is a limiting probability distribution of complicated sums, appears as a Gaussian function, which is called M -order Gaussian mixture model:

$$P(X | \lambda) = \sum_{i=1}^M w_i p_i(X) \quad (5)$$

Here, X represents an N -dimensional random variable, and the mixed weight of w_i satisfies the following conditions: $\sum_{i=1}^M w_i = 1$, $P(x)$ is the sub distribution, which is consistent with the distribution of Gaussian probability in N dimension:

$$P_i(X) = \exp \left\{ -\frac{1}{2} (X - \mu)^t \sum_t^{-1} (X - \mu) \right\} \quad (6)$$

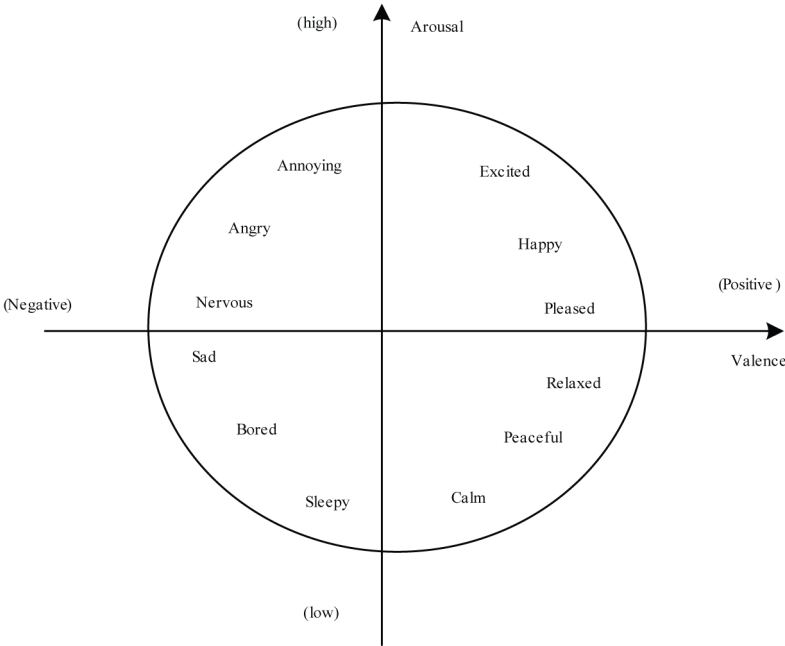
Based on the above calculation, we further standardize the Philosophical and radical functions in the process of music education. By deleting the synonyms of 67 adjectives, finally, according to the Related words of music education and philosophical and radical education, these adjectives can represent most emotions. Based on this, the vocabulary list of Philosophical and radical emotion in music education is listed in Table 4.

Table 4. Vocabulary list of music education philosophical and radical emotion influence

Category	Words Describing Emotions							General Emotion	
1	lofty	solemn and respectful	sacred	noble	to fear	serious		sacred	Dignified
2	puzzled	Sadness	bleak	Sorrow	Repression	heavy	melancholy	Sadness	Sad
3	sentimental	Submission	soft	blue	dream	Yearning		Yearning	Dreamy
4	lyric	Comfort	satisfy	Calm	calm	Tranquility		lyric	Soothing
5	lithe	Jump	lively	humor	grace	novel		lithe	Graceful
6	happy	delighted	bright					happy	Joyous
7	carnival	passion	enthusiasm	excitement	Excited	Uneasiness	victory	enthusiasm	Exciting
8	dignified	vitality	Military prestige	Distinguished	powerful	huge		vitality	Vigorous

In addition to the above text keyword model, the commonly used emotional model is acoustic reference model. On the psychological level, these two dimensions are easily related to the energy / amplitude of acoustic characteristics, so they are suitable for music Philosophical and radical emotion classification. The specific model structure is shown in Figure 7.

Figure 7. Music education philosophical and radical emotion model



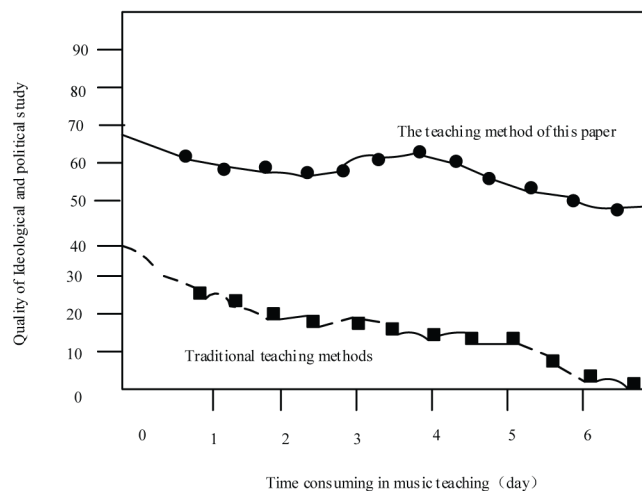
The emotional model of Philosophical and radical education in music education regards emotional elements as continuous values on two-dimensional plane, which makes emotional transformation more natural and stable. There are also limitations in Sayer’s model. The complex and changeable music emotion cannot be fully reflected in the supporting role and price. Non basic emotion generation model

based on three-dimensional model. Eight basic emotions are the basis of other emotions (Crespo, & Burgos. (2019). In the different arrangement and combination of basic emotions, all kinds of non-basic emotions can be produced (Marzal García-Quismondo et al., 2019). Based on this, we can better optimize the content and mode of music education in colleges and universities, so as to promote the guidance and cultivation of students' Philosophical and radical emotions.

ANALYSIS OF EXPERIMENTAL RESULTS

On the basis of a brief analysis of music education and Philosophical and radical emotion model, two-dimensional emotion model is selected as the basis of music emotion classification. A "boomerang" shape is represented by the two-dimensional model, which is made up of vectors pointing in two directions. The concept assumes that there is always an underlying arousal dimension to emotions, and that valence decides which way they go. Literacy is a social activity, not just a technical and neutral talent, according to this definition, and it is about how people approach reading and writing based on their concepts of knowledge, identity, and existence. MFCC and Rastar PLP were selected. The characteristic coefficients of Philosophical and radical functions of music education are 1VR and 20 respectively. Based on Kolmogorov theorem, the structure of input layer, hidden layer and output layer of 6x13x4 network is given. The Kolmogorov extension theorem states that a collection of finite-dimensional distributions that is sufficiently "consistent" will describe a stochastic process. In fact, the transfer function of the neurons in the hidden layer adopts the S-type tangent function, while the neurons in the output layer adopt the S-type logarithmic function. The length of the opposing side divided by the length of the adjacent side is the tangent of an angle in a right triangle. The inverses of exponential functions are logarithmic functions. The exponential function's inverse a^x is $x = a^y$. The results in [0,1] interval meet the requirements of the target network, so the S-type logarithmic function is used. Using MATLAB to develop BP neural network model to optimize the Philosophical and radical function of music education, record the traditional music teaching methods and the cultivation of students' Philosophical and radical emotion under the guidance of this method, as shown in Figure 8.

Figure 8. Comparison test results



Comparing the results of the two methods, we can know that compared with the traditional methods, the high-efficiency music Philosophical and radical education function model based on improved neural network can better carry out Philosophical and radical education and music teaching, improve the teaching quality and fully meet the research requirements. Politics is a set of activities linked with group decision-making or other forms of power relations between individuals, such as resource distribution or status.

CONCLUSION

The philosophical and radical education in colleges and universities is a social practice activity to cultivate the philosophical and moral quality of college students and meet the needs of social development. Therefore, emotional factors must be injected into the theoretical education, and the external indoctrination should be organically combined with the cultivation of students' philosophical consciousness. A person with high moral cultivation can not only distinguish between good and evil, but also do good sincerely, spontaneously and happily. Therefore, music education should not only focus on rational persuasion education, but also pay attention to emotional stimulation and edification. From the philosophical and radical emotional injection has always been the focus of attention. From a rational point of view, it is more meaningful to know that one should abide by a certain code of conduct than to obtain happiness by pursuing moral behavior. After receiving the influence of music education, students can get rid of the ugly side of emotion and expand its beautiful side.

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