Research Article

Research on the Sustainability of Traditional Music and the Adaptability of Ecological Environment

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Under the new situation, the world is showing a trend of becoming more and more open, and the frequency of cultural exchanges in China is also accelerating. In this case, traditional music has been impacted to a certain extent, which also affects the sustainable use of traditional music. This is the general law of cultural development, and the impact is also accompanied by vitality. The analysis of the sustainability of traditional music and the adaptability of the ecological environment, how to accurately improve the matching results will directly affect the accuracy of the analysis of the sustainability of traditional music and the adaptability of the ecological environment. This study proposes an adaptive analysis method for the sustainability and ecological environment of traditional music. While analyzing the characteristics of traditional music in detail, the important characteristics of other types of music have also been fully considered. In this study, the adaptive evaluation method is used to obtain the optimal dynamic evaluation parameters. At the same time, the dynamic amplitude difference step size is set, and the adaptability analysis is performed according to the change threshold to improve the accuracy of the adaptability analysis of sustainability and the ecological environment. The adaptive evaluation method is used to limit the weight of lyrics and the semantic information of music. Finally, the experimental analysis shows that the traditional adaptive evaluation method and the algorithm of this study are experimentally tested. Adding adaptive evaluation methods further improves the accuracy of evaluation.

1. Introduction

With the rapid development of Chinese economic construction, Chinese traditional music has faced an increasingly aggravated crisis of survival, and many of them have reached a situation where there is no successor and they are on the verge of being lost. Therefore, how to protect these cultural heritages from their influence while developing the economy has increasingly become a problem perplexing Chinese music scholars. Although it has been more than half a century since the original publication of the article, and the author did not explicitly mention the word "protection" in the text, his incisive insights still have important enlightening significance to our understanding of the protection and development of traditional music in contemporary times[1–3]. With the continuous progress of society, in the process of traditional music development and adaptability research, the research on sustainability and adaptability of the ecological environment will become the goal of in-depth research and exploration of traditional music by Chinese and foreign scholars. Digital technology is used for Yunlin's electronically archived traditional music, which can not only effectively process massive data and facilitate data storage and query but can also effectively avoid the loss and damage of data information caused by natural and manmade disasters. The music sustainable storage technology can be used to realize the in-depth analysis of the stored traditional music data, provide users with valuable information data, and then complete cultural exchanges and applications around the world but how to obtain specific content from the initial humanistic data lacking the definition of traditional music content has become a huge challenge for the adaptive evaluation method of the current traditional music [4]. Traditional music is inevitably influenced by today's economic laws and is subjected to the competition test of survival of the fittest [5–8]. Those folk and national

traditional music projects that can serve commercial activities or have a certain commercial development value are constantly excavated. China's traditional music has rich cultural connotations and inheritance value. In the long process, it has been continuously optimized so that it can carry Chinese traditional cultural beliefs. As an important part of the long-term development system of Chinese civilization, it inherits historical culture in a variety of ways, and the historical culture carried is diverse. The way of unfolding is flexible and changeable, which can reflect the value of national traditional culture and aesthetic value. The inner spiritual needs of traditional music should be grasped, but the aesthetic status of traditional music deserves further consideration. This has been confirmed in the continuous development of society, the continuous economic growth, the inheritance of traditional culture, and the awareness of cultural value, etc. It can also be reflected in the process of optimizing traditional music and establishing traditional music electronic archives and other multichannel optimization methods. In the face of complex social media information, the analysis of the sustainability of traditional music and the adaptability of the ecological environment has become the focus of Chinese scholars' research studies. However, how to obtain specific content sources from the analysis of the sustainability of traditional music and the adaptability of the ecological environment has become a huge challenge for the current adaptability analysis of traditional music. Because the analysis of traditional music sustainability and ecological environment adaptability needs to use the time sequence method, the adaptive evaluation method can be used according to its concealment. At present, other classification methods are relatively simple, and the characteristics of analysis on traditional music sustainability and ecological environment adaptability are not accurate. The adaptive evaluation method is applied to the analysis process of traditional music sustainability and ecological environmental adaptability [9–12]. According to the adaptive characteristics of traditional music, this method can take the lyrics, word frequency, content, and meaning of the traditional music as the current prior knowledge, suitable for automatic classification. The information gain method is used to extract the characteristics of traditional music, to use this method to obtain the weight of the lyrics and the semantic information of the music, synthesize the lyrics with high similarity in meaning, and construct various types of modes of analysis on traditional music sustainability and ecological environment adaptability.

With the continuous development of the domestic traditional music industry, large-scale traditional music in China has developed rapidly. Research on the sustainability of traditional music and the adaptability of the ecological environment occupies an important position, and a good research system on the sustainability and adaptability of the ecological environment can speed up the flow of traditional music. The current research process on the sustainability of traditional music and the adaptability of the ecological environment can greatly improve the optimization level of Chinese traditional music courses and provide favorable conditions for the stable and sustainable development of the Chinese traditional music curriculum optimization field. Through in-depth research and analysis of the existing traditional music adaptability research, this study proposes a traditional music adaptability research method based on the adaptive evaluation method, which can provide certain support for the stable and sustainable development of the adaptive evaluation method. The adaptive evaluation method can update the processing speed in real-time according to the arbitrary extreme value and the global extreme value and can obtain the approximate value of traditional music adaptive research. Finally, the experimental results show that, compared with the traditional algorithm, the algorithm proposed in this paper can reduce the time and speed of the adaptive evaluation method.

2. Relevant Basic Knowledge

The field of traditional music today lacks educators who have both profound traditional music theory and a rich practical research foundation in addition to traditional music theoretical foundation. Chinese traditional music has rich cultural connotations and inheritance value. As an important part of the long-term development system of Chinese civilization, traditional music inherits history and culture in a variety of ways. The historical culture carried by it has the characteristics of diversity, and its unfolding method is flexible and changeable, which can reflect traditional national values, cultural values, and aesthetic values. The research and inheritance of the adaptability of sustainability and ecological environment is an inherent spiritual need, but the aesthetic status of traditional music deserves further consideration. However, with the continuous development of society and the continuous growth of the economy, its aesthetic significance has been confirmed in the inheritance of traditional culture and cultural value awareness [13, 14]. Meanwhile, it can also be carried out in traditional music mining and adaptability research. The adaptive research and development of traditional intangible cultural relics are reflected in adaptive research methods through the establishment of traditional music electronic archives and other multichannel methods. The main obstacle to the inheritance process of traditional music is the deviation of the concept value of the process of sustainability and the adaptability of the ecological environment. In addition, the teaching content is too homogeneous, the teaching resources are insufficient, and the teaching mode is outdated, all of which affect the diversity and integrity of traditional music transmission. Due to overreliance on teaching technology, ignoring the inheritance of traditional music culture and national spirit, and ignoring cultural orientation, it is necessary to correctly locate its cultural value. A reasonable development strategy should be determined to develop music resources and effectively change the teaching model. In cultural heritage, technology and methods are particularly important, which is why they are required to pay attention to the study of humanistic knowledge and many other issues. Therefore, with the inheritance of national traditional culture as the center, in the process of adapting to the sustainability and ecological environment, it is necessary to

combine the actual situation of the college, combined with the existing technology and cultural education model, and strive to contribute to the construction of traditional Chinese music culture and cultural power.

Economically speaking, the quest for adaptability is based on Hicks Lindahl's concept of maximizing returns with minimal capital investment. From an ecological point of view, the problem of adaptation is concentrated in the stability of biophysical systems. In the minds of biophysicists, adaptation refers to maintaining the stability of a healthy ecological environment, that is, the exploitation of the ecological environment should be limited. Adaptive sociocultural concepts attempt to keep social and cultural systems stable, including reducing destructive collisions between them. Promoting intra- and intergenerational equity is an important part of this. For the same reason for which we preserve biodiversity, we must do our best to preserve social and cultural diversity as well. In the research of humanities scholars, the deeper thinking on adaptive development from the perspective of cultural philosophy by Mr. Feng Tianyu of Wuhan University is of great enlightening significance to our music field. The way of adaptive development can be based on the ancient Chinese concept of equilibrium between yin and yang. The adaptive development approach deals with multifaceted relational issues in various fields. The equilibrium of various aspects is the key to the adaptive development of human civilization, and the relationship between various aspects can be roughly summarized as yin and yang. The so-called yang aspect generally refers to the strong, active, dominant, obvious, and immediately effective, while the yin aspect often refers to the weak, passive, obedient, inconspicuous, and long-term effective. In this regard, Western scholars have similar views [15, 16].

Traditional music develops and inherits in collective life with the same race, the same living habits, and the same ideology. It has a relatively long history and has gradually formed on a large scale. In the current college music curriculum, it has been widely carried out. Even though some colleges and universities in ethnic minority areas set up wrestling competitions and hold ethnic dances in Tibet, compared with Han ethnic areas and provinces with more residents, the content of music teaching in colleges and universities mainly consists of common music programs. For example, music activities such as tug-of-war, rope skipping, and yangko are popular in many provinces such as the North and the Central Plains. On the whole, in addition to colleges and universities, other universities also offer a lot of traditional music, but the traditional courses are mainly based on martial arts and folk dance. Influenced by many factors such as mainstream western music projects, the continuous popularization and mining of traditional music, the progress of traditional music in music teaching in colleges and universities is not very smooth, and its functions cannot be fully and effectively played. In the context of music teaching, traditional music has developed rapidly. Because the sound intensity and timbre characteristics of music are relatively sensitive, the music melody library of traditional music sustainability and the adaptability of the

ecological environment are used for the elaboration and processing of melody [17, 18]. This study mainly focuses on the module similarity related to music feature extraction, including the acquisition of the pitch of the music, the adaptability analysis of music sustainability and the ecological environment, and similarity matching. The average amplitude function threshold method is used to evaluate the music melody, and the function can be used to extract the sound frequency. Finally, the frequency corresponding to the pitch of the music is matched with the similarity of the music segment. The music evaluation process needs to go through music signal noise removal, weighting calculation, and framed melody preprocessing. The basic frequency can be obtained from the music melody information. After the basic frequency of each frame signal is obtained, the music melody library will evaluate the audio frequency and calculate the corresponding frequency period and pitch melody information of a single music melody. Similar musical compositions can be evaluated by effectively matching the pitches of musical pieces to pitches in the melody library. It can be seen from the above that there are some insurmountable shortcomings of the adaptive evaluation method in the adaptability analysis of sustainability and the ecological environment. Therefore, the deep belief network can be combined with the adaptive evaluation method, and the quota sharing technology can be used to significantly reduce the number of parameters, and it can convey the essence of music by reflecting the music, which is of great significance.

3. The Adaptive Research Method of Traditional Music Ecological Environment

Chinese traditional music is a product created and accumulated in the long history of the Chinese nation for thousands of years. The historical investigation of its relationship with ecological environment changes in different periods can provide a historical reference for the "ecological environment" of traditional music proposed in this study. The core and essence of the relationship between a certain cultural style and the ecological environment is ultimately the relationship between "people" and "environment" [19]. This study analyzes the advantages of traditional music in the adaptive process of sustainability and the ecological environment from different perspectives such as the development status and functional characteristics of existing traditional music. Suggestions are given to promote the development of traditional music in the country.

The adaptive evaluation method is mainly to build a music melody library for a series of time-serial numbers and perform music marking. The constructed music melody library contains n states, which are marked by $S = \{S_1, S_2, \ldots, S_n\}$, and if the music evaluation state is represented by q_t at a time t. Then, the conversion matrix between different musical melodies can be expressed as $A = \{a_{ij}\}$, which is given as follows:

$$\alpha_{ij}(k) = P\left[q_{t+1} = S_j | q_t = S_i\right], \quad 1 \leq i, j \leq N. \quad (1)$$

For the adaptability analysis of music sustainability and ecological environment, any state can reach other states in

one transition; while in other analyses of musical sustainability and ecological adaptation, only certain transitions between states are possible, and this case implies that $a_{ij} > 0$ "i, j", then needs to be set as a subscript of "a".

The adaptive evaluation method can only complete one test for each melody state so as to obtain a multidimensional observation vector. The discrete or continuous melody can be realized through the detailed analysis of the state of the vector and the music melody library [20, 21].

In the melody continuous distribution test, the corresponding melody observation probability distribution of state j is as follows:

$$b_j(v_t) = P[v_t \mid q_t = S_j], \quad 1 \le j \le N. \tag{2}$$

Generally, the probability distribution is taken as a uniform distribution; that is,

$$b_j(v_t) = \sum_{m=1}^{M} \omega_{j,m} N(o_t, \mu_{j,m}, \Sigma_{j,m}). \tag{3}$$

M in the abovementioned formula represents the number of uniform distributions and ω_m represents the mixed weight of positive correlation, assuming that they are set to 0.9, then $N(o_t, \mu_{j,m}, \Sigma_j, m)$ is an $n+1$-dimensional Gaussian distribution.

The initial state distribution is $\pi = \{\pi_i\}$, here

$$\pi_i = P[q_1 = S_i], \quad 1 \le i \le N. \tag{4}$$

Therefore, the optimization of the relevant parameters of the adaptive evaluation method has been dealt with. This conclusion can be converted into three groups.

Since the observation sequence O for the analysis of musical sustainability and the adaptability of ecological environment can only be obtained in advance, it is considered to use this sequence to estimate the adaptability of music sustainability and ecological environment [22]. The observation sequence is used combined with the adaptive evaluation method to make it possible to aggregate the available observation sequence $O = o_1 o_2 \ldots o_T$:

$$P(O \mid \lambda) \ge P(\lambda \mid O). \tag{5}$$

The way to calculate $P(O|\lambda)$ is a forward-backward algorithm. For the adaptive analysis parameters λ and state i of musical sustainability and ecological environment, we define forward melody $\alpha_t(i)$ as

$$\alpha_t(i) = P(o_1 o_2 \ldots o_T, q_t = i \mid \lambda). \tag{6}$$

That is, $\alpha_t(i)$ is the melody of the sequence $(o_1 o_2 \ldots o_t)$ for the parameter A, and the state at a time t is o_t.

Adaptive evaluation method is used to improve unprocessed data, diversity, and accuracy and are used to define and comprehensively analyze to complete selection of the adaptive evaluation method. The expression of the corresponding adaptive evaluation method data information feature vector χ_i is as follows:

$$l_\varepsilon(g) = (1 - \rho)l_\varepsilon(g - 1) + \gamma f(\chi_i(g)). \tag{7}$$

In the above expressions, f represents the adaptive function corresponding to the feature vector χ_i of the feature data of the adaptive evaluation method. $\gamma \chi_i(g)$ represents the analysis of the corresponding adaptive evaluation method of the εth processing in the actual application process.

The expression for processing π_p in the adaptive evaluation method is

$$\text{Acu}(\pi_p) = \text{NMI}(\pi_p, \pi^*). \tag{8}$$

In the formula, π_p and π_q represent the processing of the adaptive evaluation method. If less information is shared with the adaptive evaluation method underlying data, the underlying data is less accurate. Otherwise, vice versa.

Accuracy and diversity characteristics of data based on adaptive evaluation methods defining the comprehensive analysis standard representation of adaptive evaluation method-based data [23] includes

$$\text{Eval}(\pi_p) = \lambda \text{Acu}(\pi_p) + (1 - \lambda)\text{Div}(\pi_p). \tag{9}$$

In the formula $\lambda \in [0, 1]$, the accuracy of the adaptive evaluation method is an important degree in the comprehensive analysis criteria.

$$\text{pro}(\pi_p) = \frac{\text{Div}(\pi_p)}{\sum_{p=1}^{B} \text{Div}(\pi_p)}. \tag{10}$$

The adaptive evaluation method C required to deal with the adaptation study of sustainability and ecological environment can represent the sum of all the time to carry out the target of the adaptive evaluation method as shown in the following equation:

$$C = \sum c_j. \tag{11}$$

In conducting the analysis of the traditional music adaptive evaluation method, the traditional music curriculum optimization effectively utilizes the following equation as the objective function of the model [24, 25]:

$$\min\left\{\alpha \frac{T' - T_{\min}}{T_{\max} - T_{\min}} + (1 - \alpha)\frac{C' - C_{\min}}{C_{\max} - C_{\min}}\right\}, \quad \alpha \in [0, 1]. \tag{12}$$

Under the adaptive evaluation method, the traditional music adaptive research problem is to minimize the target adaptive evaluation method time T and adaptive evaluation method C for the purpose of multiple goals. For traditional music adaptation research goals, different scheduling schemes lead to different adaptive evaluation method times and adaptive evaluation methods, and these two goals influence each other [26, 27]. For a multiobjective optimization problem, there is an optimal solution set, and the concentration of solutions cannot improve other goals without reducing one goal by any solution.

In the music training state, $T(s, a, s')$ at this time, that is, the state transition function is an unknown training item

$\theta^{s,a,s'}$. The music training method that relies on artificial intelligence data is defined as follows, that is, the part of the observable music training is described in the form of $< S_P, A_P, Z_P, T_P, O_P, R_P >$ like this six-tuple. S_P represents the cross product between S and $\theta^{s,a,s'}$; the set A of sports training items possessed by MDPs is consistent with A_P. $Z_P = S$. The state transition function $T_P(s, \theta, a, s', \theta') = P(s', \theta' \mid s, \theta, a)$ can be decomposed into the product of two conditional distributions as can be seen as follows:

$$T_P(s, \theta, a, s', \theta') = P(s', \theta' \mid s, \theta, a)$$
$$= P(s' \mid s, \theta, a, \theta')P(\theta' \mid s, \theta, a) \qquad (13)$$
$$= \theta^{sas'}\delta^{\theta\theta'}.$$

Satisfy

$$\delta^{\theta\theta'} = \begin{cases} 1, & \theta' = \theta \\ 0, & \text{otherwise} \end{cases}. \qquad (14)$$

According to the basic definition of the adaptive evaluation method, it can realize the effective transformation of the sustainability of traditional music, that is, it can be transformed to obtain the sustainability of traditional music. In this problem, since the state at this time is unknown, $b(s)$, that is, the probability distribution introduced into the state S, is regarded as a concept. Introducing this concept, θ can realize its music training behavior through the belief monitoring method. Based on the Internet + update rule, the update of the concept $b(\theta)$ can be obtained as follows:

$$b^{s,a,s'}(\theta) = \eta b(\theta)P(s' \mid \theta, s, a)$$
$$= \eta b(\theta)\theta^{s,a,s'}. \qquad (15)$$

In the abovementioned formula, η represents the normalization factor.

According to the hierarchical total sorting weight of the adaptive evaluation method, the dynamic weight value can be calculated, and the coordinate system can be constructed from the strengths, weaknesses, opportunities, and challenges, etc. The corresponding coordinate points on the coordinate system are S', W', O', and T'in turn, and which form a quadrilateral, as shown in Figure 1.

4. Analysis of Examples and Results

The simulated experimental environment is set as virtual data and a fully connected mesh topology that differs from the performance of 100 music-optimized models. The test data were chosen to analyze the algorithm performance and to randomly generate and apply the computational load of all graph nodes in the graph. In this study, a graph of the practical application of randomly generated dipping adaptation study data of anisotropy, the Gaussian elimination mode, which is widely used in image cluster analysis and network topology analysis, is selected. The average value is selected by multiple runs while assuming that the time used in traditional music adaptability research is an adaptive
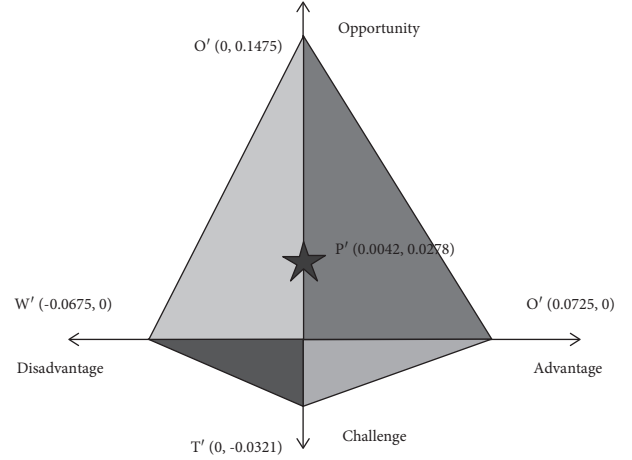

Figure 1: Schematic diagram of the quadrilateral of the adaptive evaluation method.

function. The experimental results are shown in Figure 2. It can be seen from the experimental results that compared with the adaptive evaluation method, the use of the adaptive evaluation method can significantly reduce the time of traditional music adaptive research. Based on randomly selected 300 and 400 samples, the adaptive evaluation method time is effectively reduced by about 8.4% and 9.8%. This paper proposes an adaptive evaluation method. The main reason for the time average reduction in the adaptive evaluation method is that the adaptive evaluation method can only complete the task with the highest real-time priority as the initial task to be completed. However, this study proposes an adaptive evaluation method to obtain an approximate optimal solution possibility by adaptively studying traditional music.

It is found from this experiment that the time increase of the original algorithm is significant when the amount of data increases. The timing of the use of the adaptive evaluation method has remained largely unchanged. In the meantime, the adaptive evaluation method takes an order of magnitude less time per use than the original algorithm. Combining the two experiments, it can be seen that the adaptive evaluation method proposed in this paper is superior to the original algorithm in both complexity and usage, and can maintain good performance under different support and data volumes. Under the condition of analyzing traditional music, the time required for traditional music using the adaptive evaluation method is much lower than the other two analysis algorithms. The adaptive research of traditional music can effectively improve the comprehensive abilities of students and play a vital role in the whole process of professional learning [28, 29]. The modern evaluation method will gradually become the dominant method of college evaluation. The method: a modern educational method based on computer software has become one of the existing evaluation methods with the help of its powerful expressive force, which is not limited by time or combined with the characteristics of spatial evaluation. The traditional music method has the characteristics of liveness, vividness, and intuition, which can be effectively combined with modern technology. By
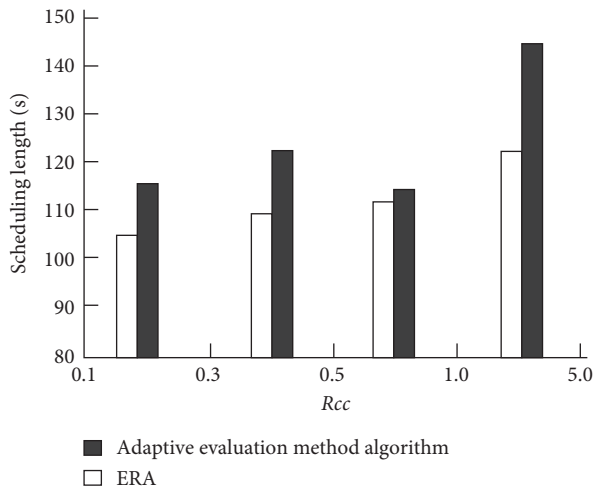
FIGURE 2: Time comparison of the traditional musical adaptive evaluation method.

using various technologies such as sound and image processing technology, the image can be abstracted, which can further increase the capacity of music evaluation and diversify the methods of music evaluation. In the evaluation process of traditional music, the images, sounds, and musical works of the Internet are used to vividly display and effectively fill in, and images can also be used to display the works used. Simple methods can be used to participate in the process of music evaluation and optimize and set the obtained values.

Due to different social environments, different times and regions will inevitably produce different cultural phenomena, and this cultural difference is exactly what constitutes the uniqueness of each human group and society. It is also because of this cultural uniqueness that different cultures can communicate, integrate, and create, and change is an inevitable phenomenon in the development of traditional culture. It is difficult for us to keep the traditional music form in its original state and let it remain the same. Change is an inevitable phenomenon in the development of traditional culture. It is difficult for us to keep the traditional music form unchanged. However, cultural change cannot be completely performed overnight but happens gradually and slowly without knowledge. That is to say, tradition and change coexist. Under the continuous influence of western mainstream music, there are many uncertain factors in the process of continuous excavation and promotion of traditional music, which makes the development of traditional music in college music teaching not very smooth, and its national characteristics have not been effectively brought into play. As an important component of Chinese traditional culture, music also occupies a certain position in international music culture [30]. The development of traditional music can achieve mutual promotion with college education courses. The adaptability process of traditional music in the sustainability and ecological environment can not only promote the further development of traditional music but can also effectively correct the disadvantages caused by the simplification of foreign competitive sports in college music programs and facilitate the vigorous development of Chinese college music, and the two can promote each other and complement each other. The adaptability process of traditional music in the sustainability and ecological environment is of great significance, and it is necessary to correct the position of traditional music. It is necessary for us to reasonably and practically develop the traditional music education resources, construct a scientific and reasonable music teaching system, and promote the inheritance and development of music culture by changing the traditional teaching mode.

5. Conclusion

The development model of traditional music is similar to the teaching method of music in colleges and universities. Almost all Chinese traditional music can be found in the content of music education in colleges and universities, and traditional music has certain advantages in college music teaching. In the face of the ever-increasing amount of media materials and the increasing storage scale, efficient and accurate evaluation techniques are urgently needed in order to obtain valuable information from them. For users, relying only on traditional evaluation methods is not enough to meet their needs. The similarity between traditional music sustainability and the adaptability analysis process of the ecological environment is not accurate. In this paper, the adaptive evaluation method is applied to the process of traditional music sustainability and ecological environment analysis. By evaluating music as a dynamic threshold, the optimal solution is found to optimize the matching speed of the comprehensive class similarity. The average amplitude difference function is used to evaluate the melody of music and extract the pitch frequency, construct an allowable error system to analyze the similarity between the sustainability of traditional music and the adaptability of the ecological environment, and speed up the music processing speed of the algorithm. The results of the case analysis show that traditional music is feasible in college music education courses, and the spirit of traditional music and the concept of college music have certain similarities. There are many kinds of traditional music, which can be used as a rich resource for music teaching in colleges and universities; the music is convenient for teaching in colleges and universities and at the same, time complements modern college music programs.

Data Availability

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

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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