Public music education in universities can promote the improvement of students’ moral feelings, the cultivation of students’ cultural quality, and the development of students’ physical and mental health. Music education is an essential part of quality education in universities. The relationship between music education and Fujian ecological culture is investigated in this paper. The evaluation index system of regional music education and Fujian ecological culture construction is constructed from five aspects, green economy, social development, resource conservation, environmental pressure, and ecological culture, based on GA (genetic algorithm) and regional characteristics of music education and Fujian ecological culture construction. The principal component clustering coupling model is built on this foundation. According to the findings, Fujian’s ecocultural construction is still in the process of coordinating and integrating economic, ecological, and cultural systems, and it is necessary to follow the path of regional integration, coordinate the development steps of each subsystem as a whole, and promote the region’s coordinated development.

1. Introduction

University public music education is an important part of promoting quality education, and it is also the main way for universities to implement aesthetic education. University public music education has its own unique characteristics [1, 2]: it not only allows college students to master music knowledge and skills, but it also inspires wisdom through music aesthetic activities, as well as explores and cultivates their aesthetic ability. Music has played its own practical functions in human society since its inception as the symbolic spiritual and cultural form of human social civilization. Humans have always made music, and it has been applied to various occasions in social life with a specific purpose [3]. Ecology is a key concept in modern ecological science, with its main meaning being "the harmony of many relationships in the human ecosystem.” To some extent, ecologization has become an ideal domain for the construction of human society, which has been praised [4]. GA (genetic algorithm) can automatically acquire and accumulate knowledge about search space during the search process and adaptively control the search process, so as to obtain the optimal solution or quasioptimal solution. As a global probability algorithm based on biological evolution mechanisms such as natural selection and genetic variation, it has good universality and planning and is simple and clear in form, so it is convenient to combine with other methods [5, 6]. As a key link of inheriting and developing Chinese music culture, the importance of general music education in universities is self-evident. Only by continuing to investigate, study, and practice “standardized education in schools,” particularly standardized education in ordinary universities, which is the mainstay of national education, can it play a significant role in the transmission and development of Chinese local music culture while also promoting global cultural ecological balance. At the moment, some researchers are debating the construction of ecological culture [7]. However, there is little discussion of the horizontal spatial pattern...
of regional music education and ecocultural construction in these discussions, despite the fact that optimizing the spatial pattern is the primary task of music education and ecocultural construction. Only by following the principles of a balanced population, resources, and environment, as well as the unity of economic, social, and ecological benefits, can it control the intensity of development and optimize the spatial structure, resulting in intensive and efficient production space, moderate living space, and beautiful ecological space [8, 9]. As a result, it is critical to assess and analyze the spatial pattern of regional music education and the level of ecological culture construction.

Aesthetics is the basic function of music education, and it is also one of the signs that distinguish it from other disciplines [10]. Under the guidance of teachers, college public music education enables students to gradually grasp the rich connotations of music works, enrich students’ basic knowledge of music, broaden their musical horizons, and help students better understand the connotations of music works. Social development is the result of interaction and mutual promotion among culture, economy, and environment. With the progress of economic development level, the contradiction between resource conservation, environmental improvement, and industrial development has gradually emerged, and the benign interaction between industrial development and ecological environment has become a hot issue at present [11]. The novelty of this topic lies in the interpretation of the coupling of general music education and Fujian ecological culture from the perspective of cultural ecology, so that we can recognize and tap the special value and practical significance of the local music culture inheritance of ordinary universities in China within the overall pattern of human culture.

2. Related Work

Music education covers a wide range, including school music education, social music education and family music education, which can be divided into preschool music education, school music education and lifelong music education, and professional music education and general music education [12]. Education management is a series of activities that the state organizes, coordinates, and controls the education system, which is divided into education administration and school management. According to literature [13], the development of talents in music education is similar to the development of talents in other disciplines, in that reasonable teachers, a perfect curriculum system, adequate teaching practice, and scientific institutional management are required to ensure the smooth growth of future musicians and a seamless transition to social needs. According to literature [14], current education management, on the one hand, begins with education and continues down the traditional experience management and research path; on the other hand, it begins with management and proceeds down the scientific management and research path. The teaching management of music education personnel training is studied and examined in literature [15]. This study is based on an understanding of the macromusic education personnel training mode, which means that the teaching management research must be placed within the context and premise of music education personnel training. In literature [16], through rational allocation and utilization of management resources, providing various services to students through natural abilities, this paper investigates the present situation of teaching management mode and teaching practice management in the connotation of teaching management, analyzes problems, tries to solve problems, and examines its own resource advantages and future development trends to meet the requirements of external environment changes, so as to explore the realization of scientific and efficient teaching management in the cultivation of professional music educators.

Literature [17] holds that music education in ordinary universities still has considerable room for development in inheriting the functions of local music culture, which needs to be examined and studied by researchers from different perspectives and levels. In literature [18], based on the investigation and analysis of the present situation of local music culture inheritance in some ordinary universities in China, this paper explores new ideas of local music culture inheritance in contemporary universities in China under the background of global cultural ecology. Literature [19] discusses the importance of the inheritance of national folk music culture in music education in ordinary universities from different angles and levels, which provides many useful references for the author. From a macro perspective, literature [20] begins with the reality of the present era and discusses the importance of school music education to the inheritance of national music culture. According to literature [21], a key factor in the development of social music education is the ability to better balance music learning and quality education. The importance of music innovation and the “people-oriented” essential pursuit of social music education is emphasized in literature [22]. Reference [23] starts with the employment problem and talent training in colleges and universities, then goes on to discuss the problems and solutions in the development of higher education in my country, analyzes the current state of society’s demand for talents, and makes practical recommendations. The current state of local social music education was explored in literature [24]. It is analyzed and expounded through questionnaires, interviews, and other forms that the popularity of social music education in various regions is dependent on its own geographical location, cultural background, and other factors. Practical and feasible development measures should be formulated according to the specific local conditions in order to better carry out social music education. In literature [21], taking the current situation of social music education of primary and secondary school students as the investigation target, combined with the characteristics of local historical and cultural development, it is proposed that social music education should not only adapt to the development of the times and constantly improve the management system but also take teaching students in accordance with their aptitude and adapting to local conditions as the fundamental starting point and attach importance to the local historical and cultural background, so as to promote the sound development of social music.
3. Research Method

3.1. Coupling Relationship between University Public Music Education and Quality Education. Teaching practice is an extremely important link in the teaching process. It is an important link to train students to integrate theory with practice and improve their practical ability and innovative ability. It is of great significance to establish a normal practice teaching order and realize the scientific and standardized teaching management. Therefore, it is necessary to vigorously strengthen the cultivation of students’ practical ability and organizational ability, highlight the teaching practice link, and pay more attention to artistic practice. Through teaching practice, it is transformed into comprehensive teaching application ability. Organizing classroom teaching practice in a planned way can help students understand the reform and development of basic education in school training and off-campus exercise.

To build ecological civilization, vigorously promoting ecological culture is important. As a new cultural choice and a social and cultural phenomenon, ecological culture not only has its specific meaning and wide application range but also has its regular, orderly, and stable relationship structure, cultivating people’s high consciousness and cultural accomplishment in dealing rationally with the relationship between man and nature and building a new culture based on the values of equality, harmony, and mutual benefit between man and nature. At the same time, ecological culture also endows every cultural phenomenon in the field of human social development with the meaning of ecological construction.

Art colleges have a better ability to centralized manage teaching and educational affairs than ordinary and comprehensive universities, which are single structure universities. The personnel structure and business acceptance are concentrated in the school’s academic affairs office due to the different staffing caused by different institutional settings. The combination of macrocontrol and specific transaction processing is a unique feature. The spontaneous management component of interest is minimized at this stage of single structural management, and a clear management organization and explicit management responsibilities have been established (see Figure 1).

Of course, some people may think that there are many ways to inherit music culture, instead of just education taking on the mission of inheritance and development. Because music culture exists in social life, in folk activities, and in people’s working life, working people amuse themselves through music, and music culture permeates people’s lives all the time. Unconscious music education behaviors (such as environmental edification, folk activities, social music, and cultural activities) also enable music culture to be passed down from generation to generation. Moreover, the music content transmitted through music education is highly generalized and systematic, which makes the music cultures of different ethnic styles relatively stable and inherited.

Ecological culture, as a social and cultural phenomenon, has a broad range of application and is a global or universal culture. Ecological culture belongs to everyone because it is based on science, which has no borders and provides a theoretical foundation for everyone to understand correctly; the materiality of ecology itself, as an objective existence, works equally for everyone. Culture is the cultural foreshadowing of the transition from human civilization to ecological civilization, as well as the contemporary era’s cultural development trend of integrating natural science, philosophy, and social science. The more cultural land the ecological culture submerges, the more it proves its importance as an ideological and cultural trend. University public music education includes not only basic music knowledge, appreciation, and performance but also the context of the times, society, and humanities in which music works are created, allowing college students to enjoy music while also engaging in psychological activities such as memory, thinking, and imagination, as well as experiencing the cultural orientation of a country and an era.

China’s latitude and longitude span is large, and there are great regional differences between east and west and north and south. Different regions are also pregnant with different cultural characteristics, thus creating China’s diverse cultural ecosystem. Music teaching is a dynamic, creative, and nonidentical art, which determines that music teaching is full of creativity. Music education is not only an aesthetic experience activity but also an educational activity to cultivate students’ creativity and imagination. Its charm lies in enabling college students to enter a noble and transcendent spiritual realm, enlighten their imagination, improve their creativity, make the thinking of seeking common ground and seeking differences go hand in hand, expand their psychological space, and activate their creative psychological activities. Ecology is the most basic consciousness that human beings must possess, which is directly related to human subject consciousness. It fundamentally determines human attitude and behavior towards ecological environment. Ecological construction should take the national ecological legal education as an important task and provide legal thought guarantee for ecological protection.

3.2. Construction of Coupling Model between Music Education and Fujian Ecological Culture. Music is expressed through music language. If you do not know the basic knowledge of music, you cannot appreciate it, let alone understand it. You can only enjoy music if you have a certain basic knowledge of music, appreciate music and understand music, and finally achieve the aesthetic goal. In view of the weak basic music quality of college students, the content of college public music education should start with mastering the basic music knowledge, focusing on the ideological connotation of music, the background of music works, and the understanding of music expressive force, so as to achieve the purpose of music education.

The foundation of ecological formation and development is ecological or green mode of production and lifestyle. In order to achieve the goal of sustainable survival and development for himself, the future of the world, and future generations, human beings must criticize, give up, and correct all hedonistic behaviors that are irrational to nature.
and make a significant change from value orientation to living habits.

The basic idea of GA (genetic algorithm) is based on Darwin’s theory of evolution and Mendel’s genetic theory. Darwin’s theory of evolution holds that all living things gradually adapt to their living environment during their continued existence. The basic characteristics of each individual of the species are inherited by the offspring, but the offspring are not completely equal to the parent. Heredity is a kind of instruction genetic code encapsulated in each cell and contained in the chromosome in the form of genes. Each gene has its special position and controls some special properties. The individuals produced by each gene have certain adaptability to the environment. Gene hybridization and gene mutation may produce offspring with stronger adaptability to the environment. Through natural selection of survival of the fittest, the gene structure with high fitness value is preserved, while the one with low fitness value is eliminated. Figure 2 shows the basic steps of GA.

For a given population \( P = \{ a_1, a_2, \ldots, a_n \} \) of size \( n \), the fitness value of each \( a_j \) body is \( f(a_j) \), and its selection probability is

\[
p(a_j) = \frac{f(a_j)}{\sum_{i=1}^{n} f(a_i)}, \quad j = 1, 2, \Lambda.
\]

When the difference of individual fitness values in the population is very large, the probability ratio of the best individual to the worst individual will also increase exponentially. The survival opportunities of the best individuals in the next generation will increase significantly, while the survival opportunities of the worst individuals will be deprived.

Selection is to arrange individuals in a group into a sequence according to their fitness values from large to small and then assign the probability of realizing the designed sequence to each individual. The individual selection probability of sorting method is

\[
p(x_j) = \frac{1}{n} \left( n^+ - \frac{n^+ - n^-}{n - 1} (j - 1) \right), \quad j = 1, 2, \Lambda
\]

where \( n^+ \) is the expected number of individuals with the best fitness function value after the selection operation, \( n^- \) is the expected number of individuals with the worst fitness function value after the selection operation, and the expected numbers of other individuals are arranged according to the arithmetic sequence.

Under the action of selection, crossover, and mutation of genetic operators, the models with low order, short definition distance, and average fitness higher than the average fitness of population will grow exponentially in the offspring. The mathematical expression is

\[
M(h, t + 1) \geq M(h, t) \cdot \frac{f(h, t)}{f(t)} \left[ 1 - P_c \cdot \frac{\delta(h)}{T - 1} - P_m \cdot o(h) \right],
\]

where \( f(h, t) \) is the average fitness of the \( t \) generation mode \( h \), \( f(t) \) is the average fitness of the \( t \) generation population, \( P_c \) is the probability of hybridization, \( P_m \) is the probability of variation, \( M(h, t) \) is the number of samples of \( t \) generation mode \( h \), and \( l \) is a binary digit.
The comprehensive coupling degree of the three subsystems, namely, the music economic and industrial development subsystem, the rural social and cultural subsystem, and the rural ecological environment subsystem, is considered in Fujian’s ecological culture construction, and the coupling intensity is judged according to the coupling degree among the three subsystems, calculated according to the following formula:

\[
C = \sqrt[3]{\frac{S_1 + S_2 + S_3}{(S_1 + S_2)^{1/3}(S_1 + S_3)^{1/3}(S_2 + S_3)^{1/3}}}.
\]

In the formula, \(S_1\) represents the efficacy value of the music economic industry development subsystem, \(S_2\) represents the efficacy value of the social culture subsystem, and \(S_3\) represents the efficacy value of the ecological culture environment subsystem; \(C\) represents the coupling degree of three subsystems, and the result value is between [0,1].

Calculate the Euclidean distance \(d_{ij} (i, j = 1, 2, \ldots, p)\) between the principal components \(F_i, F_j\), and the formula is

\[
d_{ij} = \sqrt{\sum_{k=1}^{m} (f_{ik} - f_{jk})^2}.
\]

Among them, \(f_{ik}\) is the value of the \(i\)th principal component on the \(k\) index, thereby obtaining the distance matrix \(D = (d_{ij})_{p \times p}\).
and repeat the above steps until all elements are merged into one category. The classification results are obtained using this information, combined with background knowledge of the research object, and according to certain classification standards or principles, which are generally represented by genealogy charts. For the second time, the coupling coordination degree model is used to improve the model’s coordination and consistency between the ecocultural industrial system and the ecoenvironmental system, particularly when the subsystems are staggered, dynamic, or unbalanced:

$$
\begin{align*}
D & = \sqrt{C \times T}, \\
T & = aU_1 + bU_2,
\end{align*}
$$

(7)

where $D$ is the coupling coordination degree, $C$ is the coupling degree, and $T$ is the comprehensive evaluation index of ecocultural industrial system and ecoenvironmental system, and its coefficient depends on the overall synergy effect of ecocultural industrial system and ecoenvironmental system. Generally, $D \in (0, 1)$ can be guaranteed in the case of $T \in (0, 1)$.

4. Results Analysis and Discussion

Music instruction is an essential component of art instruction. There will be polarization in the music education process, forming professional music education and general music education, depending on the actual situation of students. Through aesthetic education, college music education aims to raise students’ aesthetic standards, improve their basic literacy, and form a comprehensive thinking mode of thought. Ordinary university nonmusic majors receive a different music education than music majors. It does not necessitate a high level of singing or performance ability on the part of the students. It focuses on instilling a love for music in students, broadening their interests, paying attention to students’ artistic practice, cultivating students’ artistic sentiment, and allowing music and art to enter students’ lives.

The arrangement sequence of Figure 3 shows that among the music that students often listen to, pop music and famous western classical songs rank in the top two, accounting for a high percentage, while Chinese folk songs, Chinese folk instrumental music, and Chinese opera, which belong to Fujian native music, are obviously not among the music that students often listen to.

The content of the survey is divided into the basic situation of students, the basic situation of teaching, and the interview of teachers. The survey is conducted from these three aspects in order to reflect the present situation of university music education more comprehensively and objectively. From Figure 4, it can be seen that the majority of college students choose to take music lessons in order to complete their undergraduate credits, and the university’s rigid requirement for credits is to ensure students’ all-round development. However, it can also be seen that music learning does not show an active learning situation for college students.

In this survey, it is found that the reason why college students like music “I like it myself” is the first, followed by the influence of media publicity (Figure 5). It is clear that music education has a place in Fujian universities today, and the promotion of quality education necessitates the use of music education as an important auxiliary tool. Despite the diversity of nonclassroom teaching practice activities, classroom teaching is primarily focused on music appreciation, with relatively simple forms. Many students, however, enroll in this music appreciation course because it is easier for them to graduate from a public music elective course and receive the corresponding credits. Most college students still prefer pop music, but they are not interested in learning western classical music or Chinese folk music, according to survey results on “favorite music style” and “whether you want to offer pop music class.” In fact, the purpose of having a music elective course is to allow
students at regular universities to gain music literacy by listening to classic music works chosen by teachers and allow students to judge and appreciate good music, as well as a higher level of advancement in music aesthetic ability.

In the process of cultivating high-tech talents such as science and engineering, the state also noticed that it is far from feasible to cultivate rational logical thinking, and to become a “complete person,” one must closely combine logical thinking with thinking in images. Music education, as a component of aesthetic education, is to cultivate people’s inner feelings and thoughts. Therefore, aesthetic education in universities can stimulate students’ creative thinking and innovative talents. At present, the state calls for “cultivating innovative talents,” which is impossible without aesthetic education. It will take a long time for aesthetic education in universities to reach our ideal educational state (balanced development of music and other disciplines), but fortunately, the country has begun to pay more attention to aesthetic education.

Practice shows that only scientific, economic, legal, and administrative means are not enough to solve ecological problems and protect the ecological environment but also rely on moral adjustment means. Only by establishing a correct ecological ethics can a sense of moral responsibility for protecting the ecological environment be stimulated, make people consciously adjust the conflicts of interests between people, and consciously adjust the “material
the transformation” between people and nature, thus forming a solid foundation and internal motivation for ecological protection practice.

The comprehensive level measurement of subsystems in Fujian urban agglomeration and the results of system coupling degree, coordination degree, and comprehensive coordination index are shown in Figures 6 and 7.

From the perspective of time axis, the development of music subsystem, ecological subsystem, and social subsystem in Fujian is in weak coordinated development. In the stage of weak coordinated development, the ecocultural subsystem continued to deteriorate, and the coupling degree and coordination degree of the three subsystems were significantly improved in the time period. When the ecological consciousness of the whole people awakens, it is the time when the ecological environment is comprehensively improved. The construction of ecological education and culture should strive to make everyone with behavioral ability have a strong ecological consciousness. Culture, as the neural network system of the organism, should link all cultural undertakings and industries, including the construction of ecological culture, into an organic whole, and enrich the connotation of ecological culture characterized by propaganda and dissemination. All kinds of socialist media are tools of propaganda and public opinion of the party and people. They should give full play to their functions of inculcating and spreading ecological culture, help people to establish a correct ecological culture view, carry forward the spirit of ecological culture, and enhance their confidence and enthusiasm in building socialist ecological culture and ecological civilization.

The first five principal components’ characteristic values are all greater than 1, as shown in Figure 8. As a result of the principal component analysis, five major components have been chosen to describe the level of music education and the construction of Fujian ecological culture. SPSS22.0 is used to calculate the coefficient matrix of five principal components. The principal component and comprehensive scores of the level of music education and ecological culture construction in Chongqing and all districts and counties in Fujian are then calculated using the principal component calculation formula and comprehensive score evaluation function. According to the scores of each principal component, variance analysis is carried out, as shown in Figures 8 and 9.

It can be seen that the variance fluctuation of first principal component’s score is the most obvious, followed by the second principal component, which indicates that the indicators represented by first principal component...
and the second principal component have a great influence on the regional music education and the level of Fujian’s ecological culture construction, and there are obvious differences in the methods of regional economic construction, social security, ecological civilization, and education expenditure in Fujian’s ecological culture construction. However, the scores of the third, fourth, and fifth principal components do not fluctuate obviously, which indicates that there are no obvious differences in medical security, industrial structure, education level, and other aspects between the regional music education in Fujian and the ecological culture construction in Fujian, and they all need to be improved.

5. Conclusion

The future development orientation of music education and Fujian ecological culture naturally faces many new challenges and realistic dilemmas under the influence of the pattern of urban cultural construction. The distortion and alienation of urban ecological civilization results from the radiation and influence of music culture on people’s psychology. Universities should handle and understand the intertwined relationship between music education and environmental culture and actively promote the collaborative development of music education and Fujian environmental culture construction. It can really play its own unique advantages and functions and play a greater role in the process of further deepening quality education as one of the important ways of quality education. Fujian can only be placed in the forest of world music culture with the attitude of knowing ourselves by taking Fujian local music culture as the main body of China’s music education content, establishing a complete music education system belonging to Fujian local, and creating a good ecological environment for local music education.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The author does not have any possible conflicts of interest.

References


