

Construction and Application of a Big Data Analysis Platform for College Music Education for College Students' Mental Health

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ABSTRACT

In this study, the authors devised a big data-driven evaluation model to measure the effect of college music education, aiming at filling the gaps of poor accuracy and time-consuming results of music education effect evaluation. Firstly, the authors determined the effect of an evaluation system of music for learning, and the evaluation of this effect. Then, they carried out a simulation experiment. The literature review evidenced that few domestic research reports considered college students' communication fear. Thus, combining the characteristics of current college students' psychological counseling and the theory of communication fear, the authors tried to apply the music system desensitization therapy to address college students' communication fear, from the intervention effect, feasibility, and therapy as a psychological counseling method. The results showed that music system desensitization therapy eliminates college students' fear of communication, reduces speech anxiety, reduces shyness, and improves interpersonal communication skills.

KEYWORDS

Big Data, Mental Health of College Students, Music Education in Colleges and Universities, Music Therapy, Teaching Quality Assessment

INTRODUCTION

Artificial intelligence (AI) will bring evaluation accuracy of music effect. In this study, the authors devised a big data-driven evaluation model to measure the effect of college music education, aiming at filling the gaps of poor accuracy and time-consuming results of music education effect evaluation. Music education is gradually developing towards intelligence and online in the Internet era (Guo, 2021). As a new discipline, AI (Lind et al., 2018). AI first appeared in 1956, and, since then, a series of relevant researches have been carried out AI (Tariq et al., 2019). Currently, many aspects of

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everyday life are related to AI (Bartleet et al., 2019). Among them, AI has a great relationship with hearing and has unique advantages in music education (Zhang et al., 2020). The ability of AI music generators to produce music in a variety of styles is one of its main features. Amper Music's original compositions are an example of an effective application of AI in music. AI of teaching theory of it especially in teaching methods and teaching methods, so as at the age (Son et al., 2020). It is important to adopt expert analysis to evaluate the teaching quality (Cheng & Lam, 2021). Some of the factors used to assess the effectiveness of teaching include effective planning, lesson implementation, student interaction, motivation, subject-matter expertise, effective communication, student achievement, time management and class management skills, community and parent engagement, and management and peer engagement. Carrying out psychological counseling work can enable students to grow and develop (Wang & Chen, 2021). In college students' psychological counseling, in addition to the commonly used psychological counseling and treatment techniques, the application of new technologies and methods should also be tried (Yu, 2021) with the development of music therapy specialization (Lee et al., 2021) as a new psychological counseling and therapy (Wang et al., 2020) technique in college students' psychological counselling (Lischer et al., 2021). The three steps of relationship development, problem evaluation, and goal setting are common to most counselling theories, despite the fact that counselling differs in both form and aim. Both counsellors and clients need to be conscious of the how delicate the counselling process is.

This study focused on the abovementioned steps (Al-Kumaim et al., 2021). Combined with the experimental study of music system desensitization to tackle college students' communication fear, the authors investigated the effectiveness and feasibility of music therapy supported by technology as a means for college students' psychological counseling, discussed the results, and provided relevant recommendations (Alsamhi et al., 2021).

MATERIALS AND METHODS

Research on Artificial Intelligence in Music Education

Based on such development, the Tonara application can automatically (Oehme et al., 2019) turn pages following the beat and rhythm of the performer, providing five musical instruments (Fang, 2021). It is used to develop in the direction of emotional robots (Watson, 2019); also, it includes the teacher model and the learner model, which reflects the whole content of the teaching system development (Biasutti et al., 2022) and feeds it back to it. Such mechanism can be explained (Goodwill et al., 2019).

Research on the Quality Evaluation of Music Education

Many researches have been conducted on music education quality evaluation. Some scholars and others study music education quality evaluation based on user satisfaction; some scholars and others study music education quality evaluation, which can achieve effect evaluation, but the evaluation effect is relatively low difference (Al-Tammemi et al., 2020). The design of music education quality evaluation model faces great challenges (Li et al., 2020). In the support vector regression model (Kegelaers et al., 2021), support vector machines use training data for music categorization to learn when to categorize sounds into the appropriate classes. Support vector regression, on the other hand, is a supervised learning technique that forecasts discrete values. Therefore, a music education quality evaluation model is proposed. The model is applied to the quality evaluation of music education, avoiding the defects of local optimum and overlearning, and improving the effectiveness of the evaluation (Alsamhi et al., 2022). Overlearning is the practice of a skill after improvement has ceased. In order to prevent the algorithm from being stuck on the same local optima repeatedly, it is usual practice to restart the algorithm or execute numerous runs concurrently.

Research Status of Music Therapy

Music therapy has emerged as a complete modern science. So far, the United States is still the most developed country in music therapy. The American Music Therapy Association is also the most authoritative music therapy academic institution in the world. After half a century of development, music therapy has developed into a practical subject with strong clinical applicability (e.g., drug rehabilitation, alcohol rehabilitation, and juvenile delinquency) (Rahman et al., 2021). AI will bring evaluation accuracy of music effect. Aiming at filling the gaps of poor accuracy and time-consuming results of music education effect evaluation, the authors devised a big data-driven evaluation model of college music education effect. The authors determined the effect of an evaluation system of music for learning, and the evaluation of this effect. Finally, they carried out a simulation experiment. A simulation is an ongoing assumption of a way a system or process might work in the actual world. Models are necessary for simulations; they represent the essential traits or behaviors of the chosen system or process. The literature review evidenced that, few domestic research reports considered college students' communication fear. Thus, combining the characteristics of current college students' psychological counseling and the theory of communication fear, the authors tried to apply the music system desensitization therapy to address college students' communication fear, from the intervention effect, feasibility, and therapy as a psychological counseling method (Martínez et al., 2020). Fear frequently develops when people exaggerate the risks involved in sharing their views in public, considering the speaking engagement as a potential threat to their reputation, image, and likelihood of connecting with an audience.

In terms of research, there are relatively few basic theoretical studies on the subject of music therapy itself and in-depth discussions on many academic concepts. Foreign music therapy is based on different types of psychology, music education, biology, behavior, and Gestalt. It is a clinical application of music to achieve specific objectives including decreasing stress, improving one's mood, and self-expression. The theory is the center, and different schools of therapy have been derived. Under the guidance of their own theories, each school has created its own methods to apply to the clients (Jaffar et al., 2019).

Music therapy was introduced in China in 1979 by Liu Bangrui, a Chinese-American music therapy professor. China is still in a groping state, and the overall level is still relatively backward. Similarly, there are many researches on method intervention and curative effect, while the basic theoretical research is relatively weak (Koner et al., 2022). The literature review evidenced that the application fields of music therapy are mainly concentrated in clinical practice, such as surgery, psychiatry, neurological injury, physical disability, and obstetrics, while the intervention research in the fields of children's psychotherapy has just started, and some are foreign applications (Matthews et al., 2022). Music therapy can promote self-awareness, self-motivation, and self-esteem as well as address muscle tension, anxiety, and coping mechanisms in modern times. The research is relatively mature in the field, but it is still blank in China, which explains the limitations of its application field. In addition, the choice of music therapy methods in China is relatively limited, and the method of listening to music is mainly used, which is somewhat influenced by a purely biological model. Chinese music features multi-ethnic musical instruments as well as classically styled lyrics, poetic language, and lovely melodies. It features significant variations in pitch, instrumentation, musical scale, tone, and individual instruments. With the succession of music therapy in the West, especially in the United States, and the development of domestic psychotherapy, this method is being transformed. In many hospitals, music therapy is combined with behavioral therapy to develop newer technical methods. Music is used in cognitive behavioural music therapy to change some behaviour and reinforce others. A person's ability to cultivate specific talents that help them overcome developmental problems throughout their lives can be strengthened by music. Compositional music therapy, improvisational music therapy, receptive music therapy, and recreative music therapy are the four types of music therapy. Chinese music therapy also has its innovations, that is, it pays attention to combining it with Chinese medical care, such as combining music therapy with traditional acupuncture to create music

electrotherapy (Ahmad & Dzulkarnain, 2020). One may imagine reality and trigger emotional thoughts through music. Chinese intellectuals have approached music in many ways. According to Confucius, good music is essential to a person's development and refinement. Then, Chinese vocal music usually involves solo, rather than choral, and has historically been performed in a weak, unresonant voice or in falsetto. Harmonic music is not present in any traditional Chinese music; all of it is melodic.

RESULTS AND DISCUSSION

Big Data Analysis Platform for University Music Education

Figure 1 shows the structure of the neural network of a radial basis function (RBF) algorithm.

The list is here such as Equation 1.

$$\mu_{ij}(x_i) = \exp \left[\frac{(x_i - c_{ij})^2}{\sigma_j^2} \right] \quad (1)$$

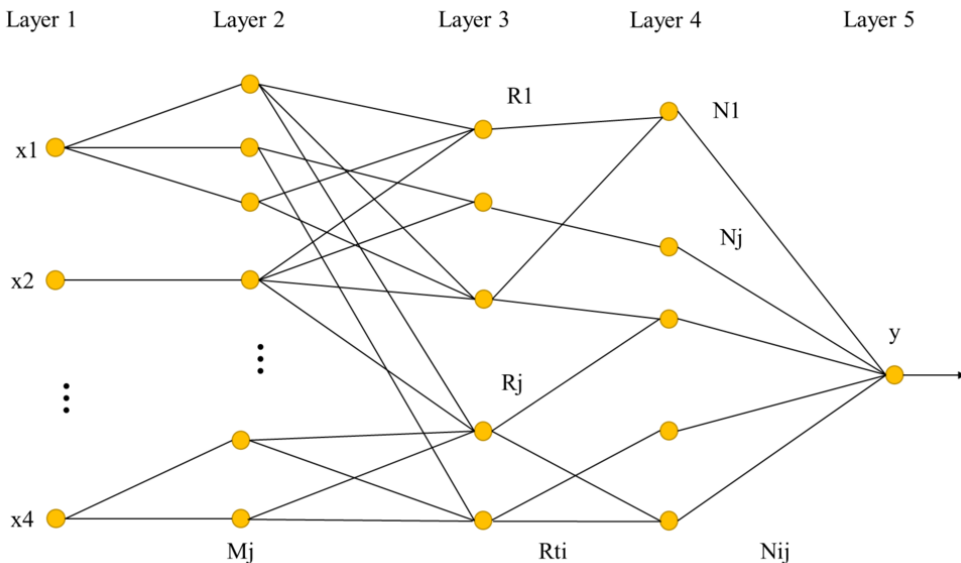
$i = 1, 2, \dots, r; j = 1, 2, \dots, u$

Through one of the samples, try to make the least and most important, as Equation 2 shows:

$$\phi_j = \exp \left[- \frac{\sum_{i=1}^r (x_i - c_{ij})^2}{\sigma_j^2} \right] = \exp \left[- \frac{\|X - C_j\|^2}{\sigma_j^2} \right], \quad (2)$$

$j = 1, 2, \dots, u$

Figure 1. Structure of the neural network of the RBF algorithm



such as Equation 3:

$$\Psi_j = \frac{\phi_j}{\sum_{k=1}^N \phi_k} \quad j = 1, 2, \dots, u \quad (3)$$

It is in Equation 4:

$$y(x) = \frac{\sum_{i=1}^n \left[(a_{i0} + a_{i1}x_1 + \dots + a_{ir}x_r) \exp \left(-\frac{\|x - c_i\|^2}{\sigma_i^2} \right) \right]}{\sum_{i=1}^n \exp \left(-\frac{\|x - c_i\|^2}{\sigma_i^2} \right)} \quad (4)$$

ω_k represents the connection mode of the kth rule, that is, the sum shown in Equation (5):

$$y(x) = \sum_{k=1}^u w_k \cdot \Psi_k \quad (5)$$

College music education based on RBF algorithm integrates the algorithm concept among all the surveyed students, and the proportion of the 100 people who spent the study time in the college music education big data analysis platform. In time, the hidden layer distribution of each music learning courseware (Figure 2).

Evaluation of Music Education Quality

The authors conducted the evaluation of the effect of music education based on the factors in Table 1.

Equation (6) shows the maximum eigenroot of the established:

$$C R = C I / R I \quad (6)$$

According to the eigenvector value of teaching, Table 2 shows effect evaluation indicators.

Support vector machine is a big data-driven algorithm for the regression model. It is assumed that there are:

$$S = \{(x_i \cdot y_i)\} \quad (7)$$

The number is n, where $i=1,2,\dots,n$, $x_i \in R^m$, $y_i \in R^m$

$$R(f) = \int L(x, y, f(x)) dx dy \quad (8)$$

This is the minimum. There is the list:

Figure 2. Program design diagram

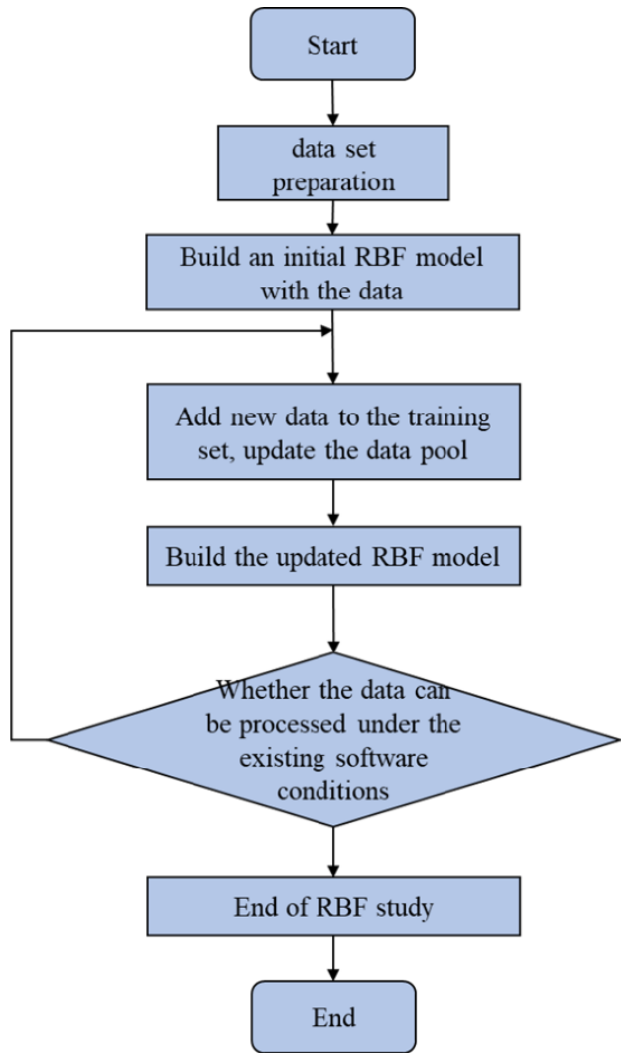


Table 1. Comparison matrix of the main factors

Evaluating Indicator	Teaching Personality	Teaching Team	Teaching Interaction	Teaching Management	Teaching Organization	Teaching Influence
Teaching personality	1	2	1	2	2	3
Teaching team	2	2	2	3	2	2
Teaching interaction	2	3	1	2	1	3
Teaching management	3	2	3	2	2	3
Teaching organization	3	1	1	1	2	2
Teaching influence	1	2	3	1	2	2

Table 2. Weights of evaluation indicators

First Indicators	Weight Value	Secondary Indicators	Weight Value
Teaching personality	0.11	Self-confidence	0.37
		Self-control	0.29
		Responsibility	0.34
Teaching interaction	0.28	Tilt hearing	0.16
		Expressive power	0.23
		Communication force	0.39
		Affinity	0.22
Teaching team	0.19	Innovation ability	0.34
		Scientific research ability	0.27
		Computer education concept	0.18
		Professional ontology level	0.21
Teaching management	0.13	Organization and coordination ability	0.37
		Team work ability	0.63
Teaching resources	0.11	Rationality	0.41
		Availability	0.36
		Richness	0.23
Teaching contents	0.18	Source of teaching content	0.19
		Teaching content design	0.28
		Organization of teaching content	0.34
		Teaching content imparting	0.19

$$R_{emp}(f) = \frac{1}{l} \sum_{i=1}^l L(f(x_i) - y_i) \quad (9)$$

The regression problem can be solved by solving Equation 8 to obtain the best regression function $y=f(x)$.

In Equation 9, $L(f(x_i) - y_i)$

The Equation for the support vector regression model is as follows:

$$\begin{aligned}
 f(x) &= \sum_{i=1}^l (\alpha^* - \alpha_i) K(x_i, x) + b \\
 &= \sum_{i=1}^l (\alpha^* - \alpha_i) \varphi(x_i) \cdot \varphi(x) + b \\
 &= w \cdot \varphi(x) + b
 \end{aligned} \quad (10)$$

In the formula, α^* α_i are Lagrangian multipliers, $\alpha^* \geq 0$ and $\alpha_i \geq 0$, $K(x_i, x)$ represent the kernel function, which uses the kernel function to map the nonlinear problem into the high-dimensional feature space and presents it as a linear problem $K(x_i, x) \equiv \varphi(x_i) \cdot \varphi(x)$, and w and b represent the

hyperplane weight vector and bias, respectively. The polynomial kernel, a type of kernel function, represents the similarity of vectors (training samples) in a feature space over polynomials of the original variables. This enables the learning of nonlinear models.

When using the insensitive function as the loss function, the result is as follows:

$$\begin{aligned} L(x, y, f(x)) &= |y - f(x)|_q \\ &= \max\{0, |y - f(x)| - \varepsilon\} \end{aligned} \quad (11)$$

It is namely:

$$\begin{aligned} \min & \frac{1}{2} \|w\|^2 + C \frac{1}{l} \sum_{i=1}^l (\xi_i + \xi_i^*) \\ s.t. & w \cdot x_i + b - y_i \leq \varepsilon + \xi_i \\ & y_i - w \cdot x_i - b \leq \varepsilon + \xi_i \end{aligned} \quad (12)$$

Equation 13 is as follows:

$$\xi_i > 0, \xi_i^* > 0, \varepsilon > 0, i = 1, 2, \dots, n \quad (13)$$

ξ_i and ξ_i^* are the slack variables introduced, combining the Lagrange multipliers α^* with α_i .

$$\begin{aligned} \max W(\alpha^*, \alpha) &= -\varepsilon \sum_{i=1}^l (\alpha_i + \alpha_i^*) + \sum_{i=1}^l (\alpha_i + \alpha_i^*) y_i \\ &- \frac{1}{2} \sum_{i,j=1}^l (\alpha_i^* - \alpha_i) (\alpha_j^* - \alpha_j) K(x_i, x_j) \\ s.t. & \sum_{i=1}^l (\alpha_i - \alpha_i^*) = 0, \quad \alpha_i^* \in \left[0, \frac{C}{l}\right], \alpha_i \in \left[0, \frac{C}{l}\right] \end{aligned} \quad (14)$$

It is necessary to solve Equation 15 to obtain the optimal α^* and α_i , and select the Karush–Kuhn–Tucker condition to obtain the bias value, namely:

$$b = \begin{cases} y_j - \varepsilon - \sum_{i=1}^l (\alpha_i^* - \alpha_i) K(x_i, x_j) \alpha_i \in (0, C) \\ y_j + \varepsilon - \sum_{i=1}^l (\alpha_i^* - \alpha_i) K(x_i, x_j) \alpha_i^* \in (0, C) \end{cases} \quad (15)$$

By Equation 10, the effect evaluation can be realized.

It is driven by big data is a data generalization fitting problem. A model that has been trained too successfully on training data will not be able to generalize. Data generalization is the act of developing a more comprehensive classification of data in a database. Despite the fact that the model may produce accurate predictions for the training data, it will produce false predictions when faced with new data, rendering it useless. The evaluation index values and weight values are used as input samples, learning is performed according to the input samples, and the input data that do not belong to the learning

sample set are calculated to obtain the corresponding output values (Gössling, 2020). Unsupervised learning occurs when there are no corresponding output variables, but only input data. Unsupervised learning aims to learn more about the data by simulating their underlying structure or distribution. The output sample of support vector regression is a linear combination of each intermediate node, and different intermediate nodes correspond to the inner product of the support vector machine and the input sample (Xie & Karan, 2019).

Evaluation of the Effect of Music on College Students' Mental Health

In this subsection, the authors detail the following evaluation tools: Communication fear self-report scale (PRCA-24), speaker confidence self-rating scale (PRCS), shyness scale, and music system desensitization self-assessment questionnaire.

Communication Fear Self-Report Scale

The PRCA-24 has a total of 24 items, including four subscales, each of which has six items. It allows to determine the level of communication fear in public speaking in different situations. Anxiety frequently takes the form of fear of public speaking. Lower scores reflect less anxiety about speaking in front of an audience. Scores can be between 6 and 30. High levels of public speaking anxiety swing between 20.75 and 30, whereas moderate levels fall between 13.75 and 20.75. As a commonly used tool for evaluating general communication fear, it has high reliability and validity in measuring interpersonal communication (a >0.90 for the total scale; a >0.75 for the subscale).

Speaker Confidence Self-Rating Scale

The PRCS is usually a measure of speech anxiety or audience anxiety and is used to evaluate emotional and behavioral responses to public speaking. They will be answered in a "yes-no" manner. The higher the score, the higher the anxiety level, and the test-retest reliability coefficient was 0.61. Huang Guangyang, a domestic scholar, reported that the scale has a reliability value of 0.79-0.89 and a validity value of 0.51-0.66.

It is from others, and anticipation of negative evaluations from others. The scale contains 30 items and includes a 5-point Likert scale (5 = strongly agree), with higher scores experiencing higher anxiety and more likely negative evaluations trouble. The Cronbach alpha coefficient of the scale was 0.90, which was moderately correlated with the social avoidance scale and the interaction anxiety scale ($r=0.51$ and 0.32 , respectively). The interaction anxiety scale rates anxieties related to social interactions, such as making a fool of oneself and being shunned. Additionally, the social avoidance scale assesses avoidance, discomfort, fear, and other components of social anxiety. In contrast, the social reluctance scale is applied to the areas of general self-help, dressing and eating alone, as well as self-direction, movement, communication, occupation, and socialization. The Hamilton anxiety scale is a key measure for generalized anxiety disorder and frequently used to assess general anxiety symptoms across conditions; it is the most frequently used instrument to measure anxiety in treatment outcome studies.

Shyness Scale

Cheek and Buss (1981) defined shyness as feeling uncomfortable and inhibited in the presence of others. Therefore, the shyness scale evaluates both social anxiety and behavioral inhibition. It consists of 13 items on a 5-point Likert scale (1=extremely inconsistent or untrue, 5=extremely inconsistent or true). The total score of the scale is obtained by adding the reverse scoring of four reverse scoring items and all other scores. The Cronbach's alpha coefficient of the 13-item scale was 0.90, which was highly correlated with the social avoidance scale, interaction anxiety scale, and social reluctance scale ($r=0.77$, 0.86 , 0.79 , respectively). The internal consistency of a test or scale is measured by the Cronbach's alpha coefficient, which is given as a number between 0 and 1. Cronbach's alpha is a reliability indicator, not a validity indicator.

Self-Assessment Questionnaire for Music System Desensitization

The authors prepared this questionnaire and submitted it to the members of the experimental group after the music system desensitization. The purpose was to test the satisfaction of each member with the music system desensitization therapy.

RESULT ANALYSIS AND DISCUSSION

Verification of the Algorithm for University Music Education

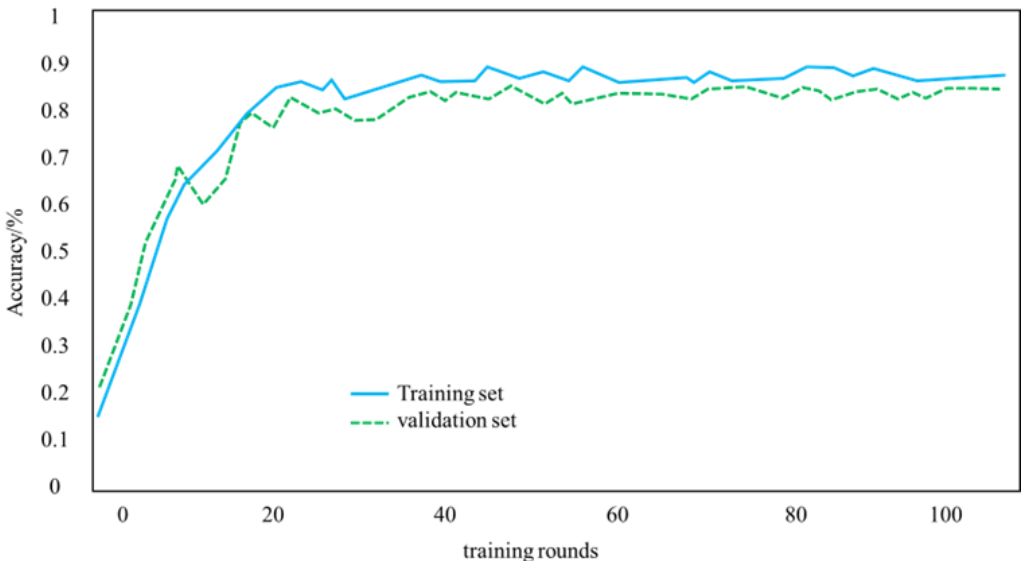
In this study, the authors used the GTZAN database for music classification training. The GTZAN is the most popular publicly available dataset for review in machine listening research for music genre identification. Blues, classical, country, disco, hip-hop, jazz, metal, pop, reggae, and rock are among the genres into which the samples are divided. It consists of 1,000 pieces of music. Each genre consists of 100 segments, often 30 s, with a sampling frequency of 22050 Hz, monophonic. The image resolution is 224×224, the activation function selects ReLU, and the output layer function selects softmax for the final classification and judgment of the genre. Figure 3 illustrates the accuracy changes. The basic convergence is reached in about 40 rounds, and the accuracy of the validation set is close to 90%.

Evaluation of the Effect of Music Education in Colleges and Universities

Taking the university with the music teaching platform as their experimental object, the authors chose to distribute the questionnaire online to the students of the university. The total number of questionnaires they distributed was 15,000, and the number of valid questionnaires was 13,586, of which 9,000 were selected as big data. Using SPSS software to analyze the results of the questionnaire, the reliability coefficient of the questionnaire results was 0.995. The Kaiser-Meyer-Olkin (KMO) value was the questionnaire results have high efficiency and reliability, and can be applied in the teaching effect evaluation results.

This value is medium, and there is still large room for improvement. Good KMO values are those greater than 0.8, which suggests that component or factor analysis will be helpful for these

Figure 3. Accuracy change graph of training set and validation set



variables. KMO values below 0.6 indicate insufficient sampling, and corrective action should be taken. According to the evaluation results, the school should put forward relative improvement measures from indicators with low scores, such as affinity and innovation ability.

Such expert evaluation method allows to determine the effect of music. Making music actively has a good impact on mood-influencing neurotransmitters such as dopamine and serotonin. The following characteristics can be used to assess a piece of music: Tunefulness, harmonic accuracy, timing, dynamic, timbral precision, and performance. Figure 5 shows comparison results. The authors used a big data-driven model to evaluate the effect of computer teaching, and the relative error of the evaluation results is significantly lower than that of other two models. The relative errors of the first-level indicators in colleges and universities by the authors' model are all lower than 0.2%, while the relative errors of the other two models in the evaluation of the effect of music education in colleges and universities are both higher than 0.3%. The evaluation of the effect of music education in colleges and universities is a typical nonlinear problem. There are large differences in the evaluation results of different models. The expert evaluation method has high authority. The authors' model can replace the expert evaluation method and be applied to the effect evaluation, which can effectively save human resources and improve evaluation efficiency.

Statistically, in this study, the authors used their model to evaluate the time required for each first-level index and then compared it with the models in the literature. Figure 5(b) shows the comparison results.

Evaluation of the Effect of Music on College Students' Mental Health

The control group did not have any intervention of music system desensitization. The music system desensitization therapy entails three steps, which are creating a hierarchy of anxiety stimuli, understanding the mechanism(s) of response by using counterconditioning, and linking the stimulus to the incompatible reaction or coping mechanism. First, the experimental group is subjected to music muscle progressive relaxation training. During the training, special MP3 format music files are played; the soothing and

Figure 4. Evaluation results of the proposed model

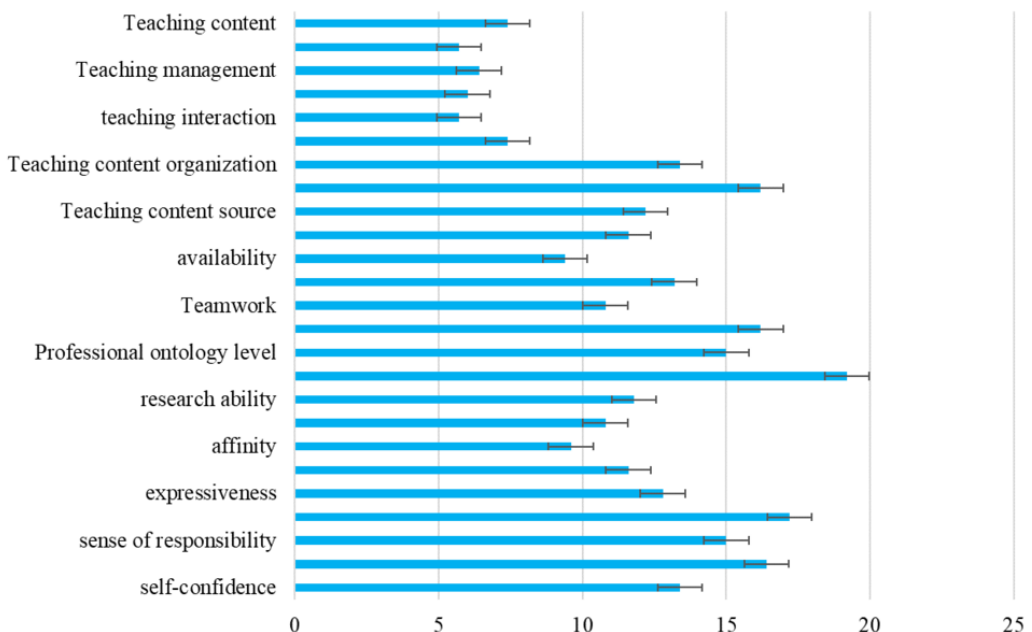
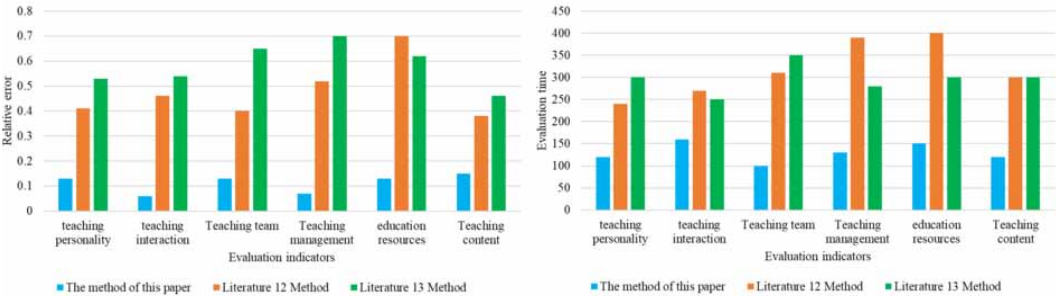


Figure 5. Evaluation accuracy and accuracy comparison of different models



relaxing music is equipped with the instruction of the muscle progressive relaxation trainer. A training session lasts about 30 minutes, and group training takes place five times a week in the spacious multimedia room at 6 pm. In addition, the instructor asked the experimental group members to retrain once a day to enhance the effect, ensured that each experimental group member had an MP3, and helped them download the music relaxation training MP3 file for use during self-training. It will allow to improve the evaluation accuracy of music effect in colleges and universities. The authors devised a big data-driven evaluation model of the effect of college music education, in order to address the gaps of poor accuracy and time-consuming results of extant music education effect evaluations. Firstly, the authors determined the effect of an evaluation system of music learning and the evaluation of this effect. Finally, they carried out a simulation experiment. The literature review evidenced that few domestic research reports considered college students' communication fear. The researchers checked the results after three weeks, and required the members of the experimental group to relax completely within 5-10 minutes. Then, the members of each experimental group established an anxiety scale with the help of their instructors, according to their own anxiety characteristics in communication. Finally, according to each member's anxiety scale, the music system was desensitized from light to severe. Music was present during the progressive muscle relaxation training (for quiet, beautiful, and ordinary classical music, 60 beats per minute), but not when the participants had to imagine anxious situations. Avoiding soothing music may reduce the impact of imaginary situations. Music can help people relax and manage their stress. Soothing thoughts and visuals take the place of unsettling ones, causing an individual's brain to become more at ease. A nervous, anxious or fearful reaction. Instructors required the members of the experimental group to continuously train in real life to consolidate the curative effect.

The data in Figure 6 evidence that there was no significant difference in all the items before the test of the college, indicating that the subjects in the experimental group and the control group were basically at the same level, and the experiment was well controlled. After the experiment, the comparisons of the other scales except the PRCS and the shyness scale showed significant, very significant or extremely significant difference (Figure 6).

The authors compared the differences in PRCA-24, PRCS, FNE, and shyness scale. Figure 7 shows that there are differences on each scale between the changes before and after the experiment in both the experimental group and the control group. More specifically, comparing the results before and after the experiment, differences occur between the experimental group and the control group in the PRCA subgroup and PRCS total scores, and in the PRCA meeting scores, duo scores, public scores, and shyness scale scores. There is a very significant difference in the comparison of the total score of the PRCA and the difference between the before and after of the FNE scale score, and there is an extremely significant difference. This analysis shows that music therapy has a great effect on college students' mental health. Music can ease stress during academic work and may aid memory and processing when performing thinking-intensive tasks. In addition, music lessens pain, anxiety, exhaustion, and sadness.

Figure 6. Comparison of the results of PRCA-24, PRCS, fear of negative evaluation scale (FNE), and shyness scale between the experimental group and the control group before (on the left) and after (on the right) the experiment

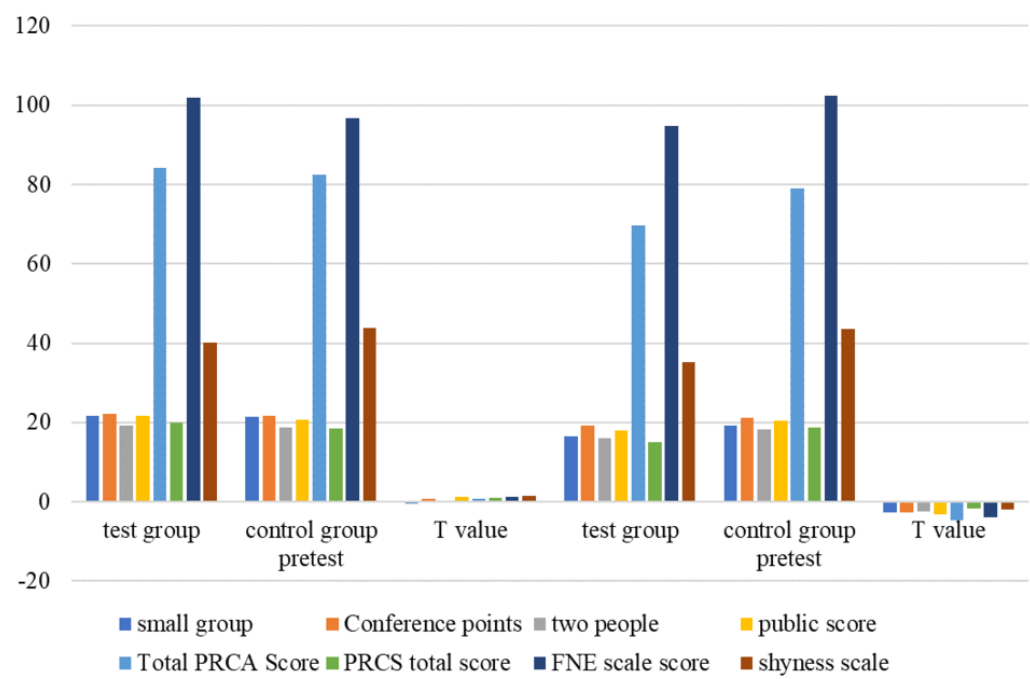
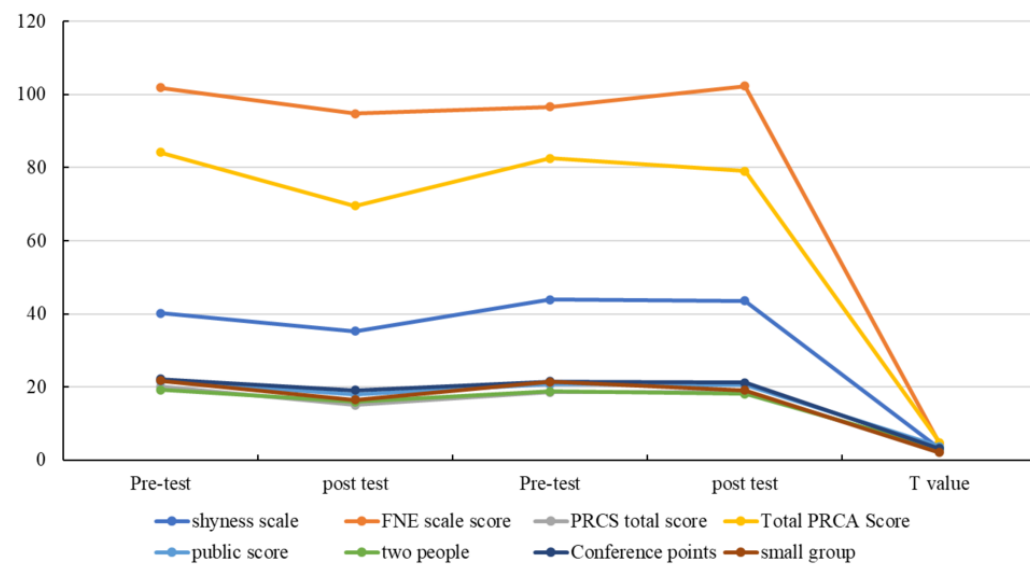


Figure 7. Comparison of the difference between the experimental group and the control group before and after the PRCA-24, PRCS, FNE, and shyness scale experiments



CONCLUSION

The construction and application of a big data analysis platform will allow to improve the evaluation accuracy of music effect in colleges and universities. In this study, the authors devised a big data-driven evaluation model to measure the effect of college music education, aiming at filling the gaps. Firstly, the authors determined the effect of an evaluation system of music learning and the evaluation of this effect. Then, they carried out a simulation experiment. The literature review evidenced that few domestic research reports considered college students' communication fear. Thus, combining the characteristics of current college students' psychological counseling and the theory of communication fear, the authors tried to apply the music system desensitization therapy to address college students' communication fear, from the intervention effect, feasibility, and therapy as a psychological counseling method for college students. The results showed that music system desensitization therapy eliminates college students' fear of communication, reduces speech anxiety, reduces shyness, and improves interpersonal communication skills. Music system desensitization therapy, by teaching people to perform deep muscle relaxation under the influence of music and letting people imagine the situation of participating in communication when they are in a state of deep relaxation, addresses the excessive physiological response of college students in communication situations and is a treatment of fear symptoms such as tension and anxiety. The instructor used the music system to desensitize college students to intervene in fear of communicating and conducted a music therapy attempt. This experience increased the instructor's skills and confidence in using new psychological counseling methods and also enriched the instructor's psychological counseling experience as a whole.

DATA AVAILABILITY

The Figures and Tables used to support the findings of this study are included in the paper.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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