

RESEARCH ARTICLE

Music education curriculum design based on the adjustment of college students' mental health

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ABSTRACT

Music aesthetic education can affect people's emotions through hearing, thereby directly affecting their hearts, sublimating their emotions, and eventually purifying their hearts. Music can enrich college students' imagination and also make them fully relaxed, thereby making their personality livelier and more cheerful and enabling them to better complete their learning tasks. This study proposes a curriculum design of music education based on the research on the regulating effect of music education on college students' mental health (MH). Results indicated that music aesthetic appreciation has evident intervention effect on the overall level of MH and interpersonal sensitivity, anxiety, and terror of the experimental group. Accordingly, the curriculum of music education in colleges and universities runs through the appreciation of classic classics with a vertical line of music historical development. Hence, students are able to appreciate popular songs and also understand the musical styles and aesthetic orientations in certain stages of music development. Therefore, the proposed music education course takes the adjustment of college students' MH as the guiding ideology, emphasizes the main position of students' MH, encourages students to actively construct knowledge, strengthens cooperation and communication, and better completes teaching tasks.

Keywords: college students; mental health; music education

1. Introduction

The development of the times has resulted in profound changes in human ideas, values, and interpersonal relationships^[1]. Consequently, people's mental stress is increasing with the constant change of society. Therefore, how to maintain a good attitude and face an increasingly severe competitive environment with a positive attitude has attracted increasing attention. Moreover, how to solve the mental health (MH) problems of college students has become the focus of university education and is also a brand-new challenge facing university education. In particular, music education plays a key role in dealing with these problems^[2,3]. Music aesthetic education can affect people's emotions through hearing, thereby directly affecting their hearts, sublimating their emotions, and eventually purifying their hearts.

Music education is an educational activity, with music as its means and aesthetics as its goal. It exerts a subtle influence on college students' physical health and MH by using educational means of entertaining and smoothening things silently^[4]. The basic theory of university music education includes the principles and modes of music teaching, music teaching methods and equipment, and music creation teaching and innovation. Music

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can enrich college students' imagination and also make them fully relaxed, thereby making their personalities livelier and more cheerful and enabling them to better complete their learning tasks^[5,6]. This study proposes a curriculum design of music education on the basis of the research on the regulating effect of music education on college students' MH.

2. Literature review

College students are a thinking group, who can see the essence through problems and have a spirit of exploration. Therefore, their music aesthetic activities reflect their unique selectivity and tendency to their aesthetic objects. The aesthetic objects selected by college students are closely related to their cultural level, academic life, personal interests, and social fashion^[7]. Chang et al.^[8] and Di et al.^[9] hold that music can directly affect people's emotional and spiritual world, with strong appeal and penetration, and has a profound and extensive connection with other aspects of culture and arts. Siddiqui et al.^[10] indicate that music education is an education with music aesthetics as the core and pleases the heart and guides the good with emotions. We should emphasize the aesthetic experience of music to cultivate college students' healthy and noble aesthetic taste and positive and optimistic attitude toward life, promote the sound development of their personality, and lay the foundation for adapting to society in the future. According to the Investigation on freshman psychology by Panwar et al.^[11], 8.77% of people often suffer from insomnia, 5.33% are not interested in anything, 26.19% feel they have psychological problems, and only 20.73% believe they have no psychological problems.

At present, universities mostly rely on music education centers to carry out music education for students through course teaching, lectures, tests, consultations, MH knowledge propaganda, crisis intervention, and other methods; moreover, the coverage and benefits of music education are constantly expanding^[12]. The research conducted by Penny R.^[13] has shown that people's emotions are in a state of constant change and development, and the psychological function of communication and expression is improved with the improvement of human cognitive level. The work of Blythe et al.^[14] indicates that music therapy has a good effect on relieving anxiety caused by postgraduate entrance examinations and addressing insomnia of college students. Rickson D.^[15] explains that music therapy can also help college students vent their emotions, thereby addressing their issues. The research on the influence of music on the memory effect of Chinese words^[16] finds that music can consolidate the memory effect of college students.

In addition to exploring the brain mechanism, the influence of music on other physiological indexes has always been the focus of researchers. Meadows et al.^[17] prove that music has a significant influence on human physiological values, including blood pressure, myocardial contraction, respiration, heart rate and other physiological States. In the work of Pérez-Eizaguirre et al.^[18], it is found that music therapy can affect the heart rate and breathing of patients with heart surgery, and can help reduce systolic and diastolic blood pressure, which is beneficial to the rehabilitation of patients. LaGasse et al.^[19] conduct a longitudinal follow-up study, which explores the influence of music prenatal education on the development quotient at the age of two. The results show that there is a significant difference in the development quotient of children with music prenatal education at the age of two compared with children without music prenatal education, which is significantly higher than that of children without music prenatal education. In the study of Crossan et al.^[20], the "brain music" made by patients with depression listening to their scalp EEG was found to have a strong hypnotic effect on themselves, which obviously improved their sleep status.

From the research perspective, music aesthetics and music appreciation often emphasize the moral education function of music aesthetics or focus on improving students' aesthetic ability. From the MH perspective, research has focused on the role of music therapy. However, no study has been conducted on the adjustment and prevention function of college students' MH through music aesthetic appreciation. The current

study uses the program of music aesthetic appreciation as intervention for college students. Moreover, this research discusses the influence of music aesthetic appreciation on college students' MH level and psychological quality development. On this basis, we propose a curriculum design for music education.

3. Research method and process

3.1. Sample selection

Two first-year undergraduate classes of Music majors were selected: one as the experimental group (EG) and the other as the control group (CG). EG had 45 students (9 males and 36 females), aged between 17 and 21 years. CG had 35 students (28 females and 7 males), aged between 17 and 20 years. Before being selected, they all passed the pre-intervention assessment questionnaire of the target population and carried out individual intervention treatment on several consultants.

3.2. Measuring tool

This study selected the SCL-90 scale as the main measuring tool for pre- and post-tests to observe changes in the experimental results^[17,18]. This scale contains 90 questions, and each question is scored by 5 points. Symptoms are rated 1, 2, 3, 4, and 5, from none to severe. The higher the score, the more evident the symptoms and the worse the MH.

The SCL-90 scale is divided into 10 factors: somatization, obsessive–compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, terror, paranoia, psychosis, and others. The validity period of the SCL-90 scale is generally within one week. Moreover, this scale has been widely used in psychological counseling and psychotherapy and has good reliability and validity report.

3.3. Experimental process

In this study, the results of the SCL-90 symptom checklist 90 and college students' psychological quality questionnaire were used as pre-test data. Using the designed operation scheme of music aesthetic appreciation activities, the EG subjects were educated and intervened, but those in CG were not. Educational intervention in EG was mainly carried out in a purposeful, planned, and targeted manner by adopting a series of training courses in accordance with established activity procedures. Some activities will be partially revised and improved, given the problems found in the experiment and the actual situation of the subjects.

Teachers can allow students to spend one hour exchanging emotional diaries about this week. According to the principle of homogeneity in psychology, playing deep and gentle ancient music allows students to further promote emotional communication. After playing the music, the students exchange feelings and discuss for 40 minutes. At this time, the group atmosphere is more relaxed. Thereafter, another pastoral symphony will be played to further create a cheerful and peaceful atmosphere. Accordingly, the group members can fully relax physically and mentally, deepen their understanding of the role of music, and make music therapy reach its climax and expected effect. Lastly, the students exchange feelings after listening to the music and summarize the role of the music for them. This process takes about an hour.

4. Result

4.1. Pre-test comparison of the MH factors between two groups

The SCL-90 symptom checklist includes 90 items with 10 factors. In this study, only the first nine factors are used to reflect the students' MH level. An independent sample *t* test was conducted to investigate the difference in MH level between EG and CG before the experiment. The results are shown in **Table 1**.

Table 1. Comparison of pre-test differences in the SCL-90 factors between the two groups.

Factors	EG	CG	T
Somatization	1.383 ± 0.153	1.313 ± 0.231	-1.216
Anxiety	1.495 ± 0.112	1.459 ± 0.135	-0.727
Force	1.825 ± 0.18	1.858 ± 0.216	-1.683
Sensitive interpersonal relationship	1.761 ± 0.185	1.705 ± 0.236	3.225
Depressed	1.822 ± 0.106	1.861 ± 0.205	-1.557
Stubbornly biased	1.296 ± 0.239	1.267 ± 0.145	4.403***
Terrifying	1.598 ± 0.21	1.521 ± 0.192	1.28
Hostility	1.437 ± 0.113	1.405 ± 0.135	0.765
Psychotic	1.564 ± 0.154	1.555 ± 0.154	0.775

Note: *** $p < 0.01$.

Note that before the intervention of music aesthetic appreciation, there were no significant differences in other factors of MH between EG and CG, except for the sensitive factors of interpersonal relationship ($t = 4.403$, $p < 0.001$) ($p > 0.05$).

4.2. Post-test comparison of the MH factors between the two groups

To investigate the effect of the experiment, we tested the difference of the total score of MH and the scores of each factor between EG and CG after the experiment. The results are shown in **Table 2**.

Table 2. Comparison of post-test differences in the SCL-90 factors between the two groups.

Factors	EG	CG	T
Somatization	1.466 ± 0.235	1.443 ± 0.164	0.385
Anxiety	1.501 ± 0.263	1.439 ± 0.249	2.921**
Force	1.609 ± 0.172	1.639 ± 0.263	2.749
Sensitive interpersonal relationship	1.639 ± 0.126	1.526 ± 0.263	4.937***
Depressed	1.286 ± 0.201	1.255 ± 0.204	1.705
Stubbornly biased	1.888 ± 0.12	1.889 ± 0.17	0.318
Terrifying	1.267 ± 0.249	1.177 ± 0.164	3.64**
Hostility	1.724 ± 0.171	1.738 ± 0.268	1.469
Psychotic	1.215 ± 0.156	1.268 ± 0.15	1.809

Note: ** $p < 0.05$; *** $p < 0.01$.

The results show that after the intervention of music aesthetic education, EG students perform better in psychological problems than CG. Among the MH factors, there are significant differences among “sensitive interpersonal relationship,” “anxiety,” and “terrifying” ($p < 0.01$) but no significant difference in other factors ($p > 0.05$). This result shows that music aesthetic appreciation has evident intervention effect on the overall MH level and interpersonal sensitivity, anxiety, and terror of EG.

5. Discussion

Many studies have proven that music can alleviate depression^[19]. The results of the current study show that music aesthetic appreciation also has a good effect on relieving anxiety, which is consistent with the previous research on music therapy. Interpersonal relationship, which is part of socialization, is a basic type of relationship that cannot be disregarded in social communication. Among college students, interpersonal relationships have become rich and diverse, and their interpersonal skills are also an important part of their

growth because they are in a critical period of their growth and development. Interpersonal relationship is an important factor affecting college students' self-growth, academic achievement, and MH. The survey results show significant differences in MH among the three factors ($p < 0.01$), EG is significantly different from CG, and other factors are not significantly different ($p > 0.05$). Moreover, the results show that music aesthetic appreciation has evident intervention effect on the overall level of MH and the interpersonal sensitivity, anxiety, and terror of EG. That is, the aesthetic appreciation of music can improve inferiority and interpersonal sensitivity, and music as a tool can improve the interpersonal relationship of college students^[20,21].

The design of music aesthetic appreciation activities should be programmed, standardized, targeted, and operable. We should grasp the entire counseling process of music aesthetic appreciation activities from introduction, implementation, to end, which is consistent with the educational concept of step by step. Before the intervention of music aesthetic appreciation, there were no significant differences in other MH factors between EG and CG, except for the sensitive factors of interpersonal relationship ($t = 4.403$, $p < 0.001$) ($p > 0.05$). A comparison of the pre- and post-test results of CG indicates that compared with the pre-test, except for interpersonal sensitivity factors, there is no significant difference in the total score of the MH level and scores of each factor in CG. This result indicates that students in CG have no special and necessary health education and training, and their psychological problems have not been reduced. The experimental results of this study prove that the influence of music aesthetic appreciation activities on college students' MH is effective, especially in five factors: obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, and terror. Music aesthetic appreciation activities have a positive impact on college students' MH.

Music education in universities plays a vital role in improving students' psychological quality. It can improve their aesthetic ability, cultivate their sentiments, and promote the formation of correct values. From the perspective of music aesthetics, music creation is a type of creative labor dominated by aesthetic experience, and the method of this creative labor is to transform the inner experience into the form of sound. In a music appreciation class, different types of music bring different emotional points to learning, beautiful melody and harmonious sound comfort impetuous minds. The objectives are to achieve peace of mind and perceive the world from a new perspective.

6. Music education curriculum design based on the adjustment of college students' MH

According to the above survey and the analysis of the survey results, it can be seen that the orientation of university music education curriculum should be due to its public popularity, which is different from that of music major, shallower, more popular and more interesting and practical. Different settings should be made based on the actual situation of students, so that students can have enough optional space when choosing to adapt to their different choices. The following points should be paid attention to in the setting of college music education courses:

- 1) Starting from students' interests, focusing on improving students' musical literacy, emphasizing the aesthetic and practical experience of music;
- 2) Respecting the individual differences and different choices of students' music level;
- 3) Pay attention to the connection with college music curriculum;
- 4) Choose the course content taking into account the nationality, diversity and development of music culture;
- 5) Combining with the conditions of teachers, equipment and so on, this paper makes a realistic design and pays attention to the current reference significance.

The aforementioned courses must be offered to establish a relatively complete curriculum system. The appreciation of classics runs through a longitudinal line of music history development. Students appreciate

popular songs and also understand the music styles and aesthetic orientations in certain stages of music development, and can also establish a clear knowledge structure of music development history. The university music education curriculum is shown in **Figure 1**.

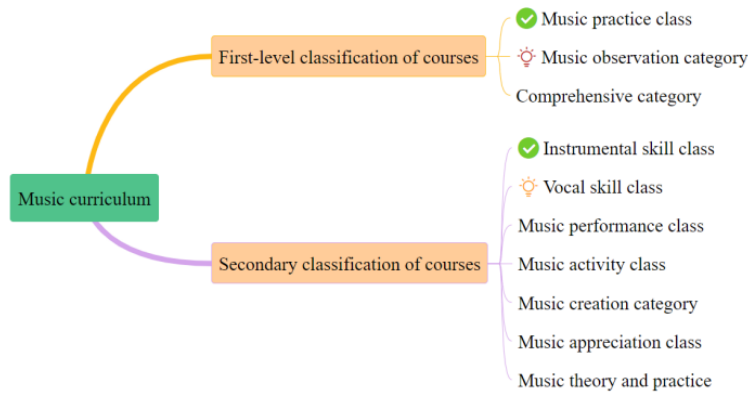


Figure 1. Curriculum design of college music education.

The course design of music education based on the adjustment of college students' MH should follow the rules and characteristics of online course design. In particular, focus should be directed to the advantages and characteristics of interaction, resource sharing, platform openness, collaborative learning, and creative learning and activities in the teaching process. Insufficient curriculum resources, unscientific management form, insufficient curriculum creativity, imperfect evaluation system, and unscientific follow-up management, among others, are the main influencing factors that restrict the effectiveness of teaching. The overall curriculum design of this research is shown in **Figure 2**.

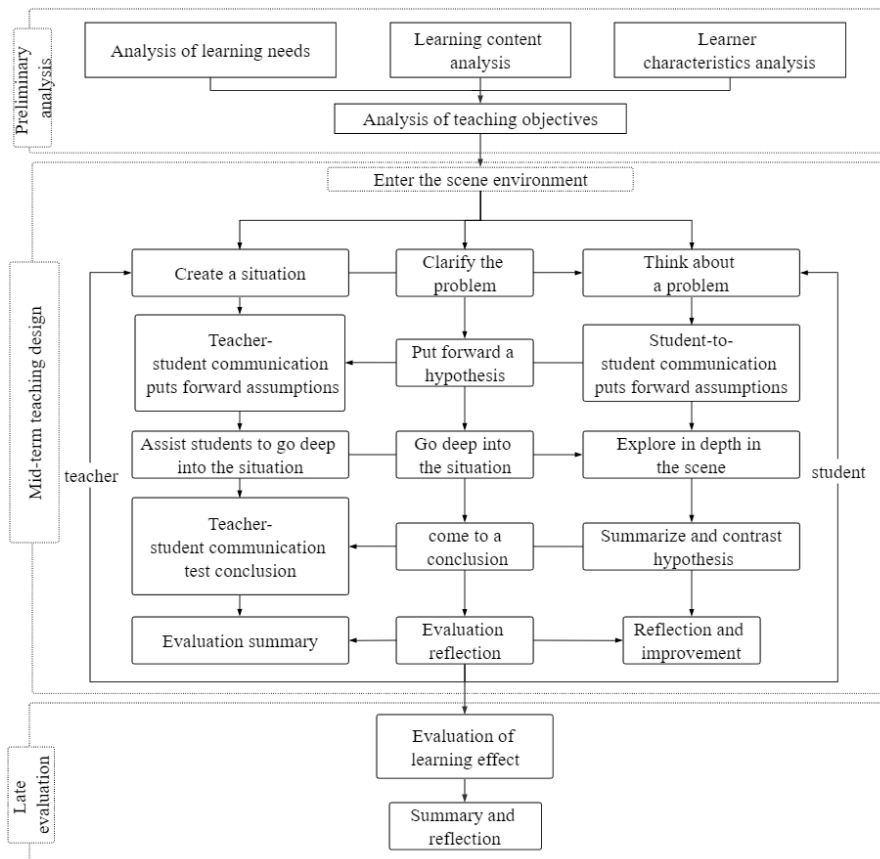


Figure 2. Music education curriculum design based on the adjustment of college students' MH.

The task of college music education is arduous. Carrying out music education will help students to establish good psychological adjustment management, have a sense of when to seek help when encountering practical problems, cultivate strong psychological qualities, and maintain optimistic learning enthusiasm and subjective initiative. Students are also assisted to gradually clarify their career interests and development direction. Moreover, students are aided to master the skills of choosing jobs, improve their ability to choose independently, and learn to take responsibility.

The proposed music education course takes the adjustment of college students' MH as the guiding ideology. By providing students with an open network autonomous learning environment, they can control the learning rhythm according to the course content set by teachers, implement the principle of prioritizing the development of abilities and supplementing knowledge transfer, emphasize the subjective position of students' MH in learning, encourage students to actively construct knowledge, strengthen cooperation and communication, and better complete teaching tasks.

7. Conclusion

This study used the SCL-90 Symptom Checklist 90 and the College Student Psychological Quality Questionnaire as pretest data. The designed music aesthetic activity operation plan was used to educate and intervene EG subjects, while CG subjects did not. According to the principle of homogenization in psychology, playing deep and gentle ancient music can further promote students' emotional communication. After playing the music, the students had a 40-minute exchange and discussion. Afterwards, the students exchanged their feelings after listening to music and summarized the impact of music on them. The results showed that after music and aesthetic education intervention, EG students performed better than CG students in terms of psychological problems. Among MH factors, there is a significant difference ($p < 0.01$) between "sensitive interpersonal relationships", "anxiety", and "terror", while there is no significant difference ($p > 0.05$) among other factors. There were significant differences in MH among the three factors ($p < 0.01$), with significant differences between EG and CG, and no significant differences among other factors ($p > 0.05$). In addition, the results indicate that music aesthetics have a significant intervention effect on the overall level of MH and the interpersonal sensitivity, anxiety, and terror of EG, that is, music aesthetics can improve feelings of inferiority and interpersonal sensitivity, and music as a tool can improve interpersonal relationships among college students.

On this basis, a curriculum design for music education was proposed. The results indicate that music aesthetics have a significant intervention effect on the overall level of MH and EG's interpersonal sensitivity, anxiety, and terror. By providing students with an open online autonomous learning environment, the learning pace can be controlled according to the curriculum content set by the teacher, emphasizing the dominant position of students' MH, promoting students to actively construct knowledge, strengthening cooperation and communication, and better completing teaching tasks.

Author contributions

Conceptualization, JM and TPH; methodology, JM; software, JM; validation, JM and TPH; formal analysis, JM; investigation, JM; resources, JM; data curation, JM; writing—original draft preparation, JM; writing—review and editing, JM; visualization, JM; supervision, TPH; project administration, JM; funding acquisition, JM. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

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