

Exploring the Interdisciplinary Teaching Models of Music in Primary and Secondary Schools

—Based on the Synthesis of Relevant Studies in China and International Studies

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Abstract: Interdisciplinary teaching plays an important role in enhancing classroom content innovation and broadening students' knowledge, and it will be even more meaningful for educators to continue to explore this topic in depth in the context of the continuing interest in interdisciplinary teaching and learning and the increasing abundance of research findings. Interdisciplinary researchers have actively built a theoretical foundation, and teachers have applied interdisciplinary teaching in the classroom, integrating, recombining, and innovating the knowledge of various disciplines into new models. The research object of this paper is the music interdisciplinary classroom in primary and secondary schools in China and abroad, through understanding, analyzing, and finally integrating the interdisciplinary content of the classroom interdisciplinary music teaching theory and classroom practice, the research purpose is based on analyzing and integrating interdisciplinary theories and classroom practice in this kind of mode, and exploring a set of interdisciplinary music teaching mode in line with the concept of popular education.

Keywords: interdisciplinary, music, teaching mode.

1. Introduction

Interdisciplinarity pays a high degree of attention to global education and curriculum design. The innovative application of interdisciplinary teaching mode will improve students' absorption of knowledge content in music classes to a certain extent, enhance students' sense of participation in the classroom, and provide an important force for realizing the artistic value of music in education.

Interdisciplinary teaching is not a rejection of the discipline but rather provides a certain corrective to the dominance of disciplinary ways of knowing and specialization. In interdisciplinary teaching, students, and faculty explore and analyze what different disciplinary approaches to an issue have to say and work toward integration in a new and more comprehensive view than any single field perspective can provide [1].

Interdisciplinarity in music education considers the interconnections between musical and non-musical ways of thinking through various scholarly and creative works, not just pedagogical methods

[2]. The practice of interdisciplinary teaching in the music classroom, can not only coordinate and integrate related art disciplines, but also connect music with other disciplines outside the arts, and use interdisciplinary and cross-teaching methods to consciously cultivate students' multi-dimensional perspectives, which can also make the comprehensive quality of music teachers get better exercise. Some music teachers may think that they are wasting their teaching time while serving other subjects. If music teachers understand the cognitive connections and shared information between subjects, they have the opportunity to strengthen music learning correctly and authentically [3].

At present, the teaching mode of music classrooms in primary and secondary schools in China adopts the traditional mode of teaching as a whole, and teachers teach a single knowledge point in the school, only for skill learning, and lack of multi-link participation such as pre-class guidance, in-class combination and extracurricular knowledge development. Due to the monotonous and repetitive content of the textbook, it is easy to reduce the sense of participation in learning, resulting in students being unable to absorb the course content substantively and better integrate into the learning atmosphere, which will directly affect the classroom objectives of the teacher.

The author will tabulate data from domestic and international research on teaching in an interdisciplinary manner in elementary and middle school music classrooms from the beginning of the 21st century to the present. The purpose of the research is to classify and summarize the existing relevant reliable research data, and to explore a set of feasible, sustainable, and in-depth interdisciplinary teaching models for primary and secondary school music, which not only has certain enlightenment and improvement of traditional teaching methods in China but also enhances the original learning value of music courses. It also provides a more objective reference experience for teachers who are interested in interdisciplinary integration outside of music disciplines.

2. Data collection and research status

2.1. Research data

The data sources of this paper are mainly based on the China National Knowledge Infrastructure (CNKI) database and the Web of Science database, the former searches Chinese literature, the latter searches foreign literature, first searches with the keywords "music interdisciplinary teaching", "junior high school music interdisciplinary teaching" and "primary school music interdisciplinary teaching", and further screens the literature publication time from 2000 to 2023 in the search results, and finally adopts the core, downloads, citations, Four items of topic relevance are the criteria. The search results of relevant literature in junior high school and primary school are taken as the main research object, and the search results of "music interdisciplinary teaching" are used as the reference of the text.

More than 200 Chinese pieces of literature on "music interdisciplinary teaching", more than 30 Chinese pieces of literature on "junior high school music interdisciplinary teaching" and more than 50 pieces of Chinese literature on "primary school music interdisciplinary teaching" were retrieved from the CNKI database.

In the Web of Science database, the foreign language literature was used as the keyword "Interdisciplinary teaching of music", and the related subject words such as "primary school", "secondary school", and "middle school" were continuously integrated and searched, and the literature published in the period from 2000 to 2023 was further screened in the search results. More than 140 foreign literature articles have been obtained.

After searching the above keywords in Chinese and foreign literature, combined with the relevance of the topic, after preprocessing, the most high-quality part of the literature was selected, and the trend chart of the number of publications was made by using the matplotlib tool (Figure. 1 and Figure. 2), and the important analysis results such as the teaching characteristics of interdisciplinary music in

primary and secondary schools, the collocation methods between disciplines, and the design characteristics of the curriculum were summarized through literature analysis, case study, content integration, and other methods, and finally the interdisciplinary teaching mode of music in primary and secondary schools was obtained.

2.2. Research status

Figure 1 is based on the CNKI database and Web of Science database, taking "music interdisciplinary education" as the subject term for retrieval, and selecting the trend chart of the number of papers published in the period from 2000 to 2023.

Since the retrieved global data excluding China is too large to be compared with the number of publications in China alone, this figure only takes Britain and the United States as reference objects to observe the trend of the number of publications in China.

From the figure, it can be found that in the 10 years from 2012 to 2022, the overall number of domestic literature publications was the same as that of Britain and the United States and showed slow and continuous growth, until the number of publications suddenly surged in 2023 to reach dozens of articles per year, greatly widening the distance with Britain and the United States, which shows that the theme research in the direction of music interdisciplinary teaching has been valued and reached a very large attention in 2023.

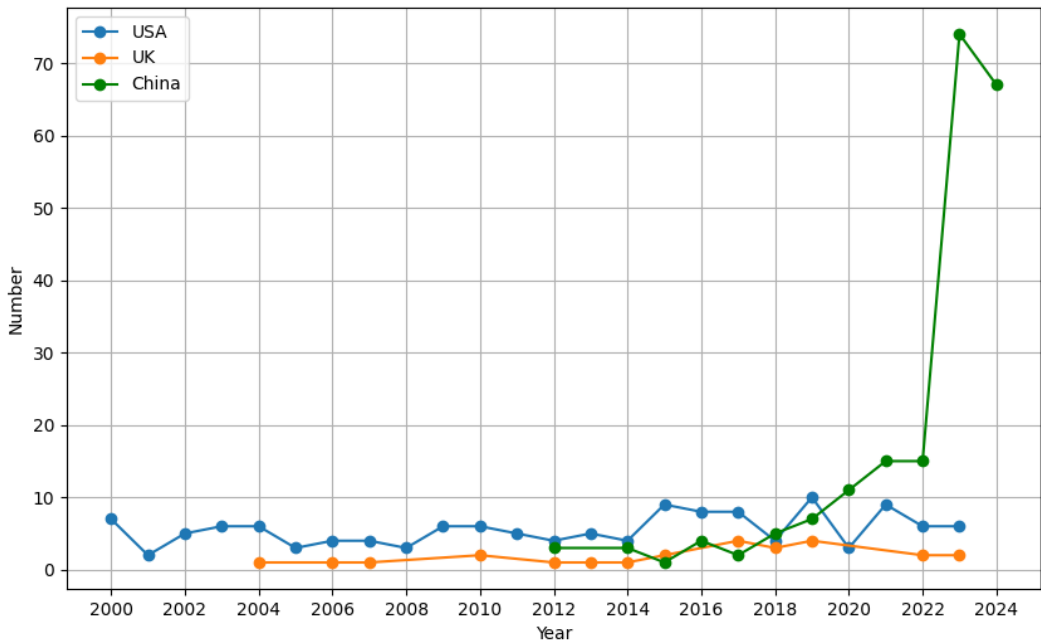


Figure 1: From 2000 to 2023, "Music Interdisciplinary Teaching" in China, Britain, and the United States related papers publication trend

Figure 2 is a trend chart obtained by further searching the interdisciplinary teaching of music from 2000 to 2023 by further searching for primary and secondary schools based on the retrieval data in Figure 1 and comparing the number of papers published between China and countries excluding China. From the figure, we can find that from 2012 to 2022, China's average annual publication volume remained stable in single digits, and by 2023, it grew rapidly and reached the peak of the entire period.

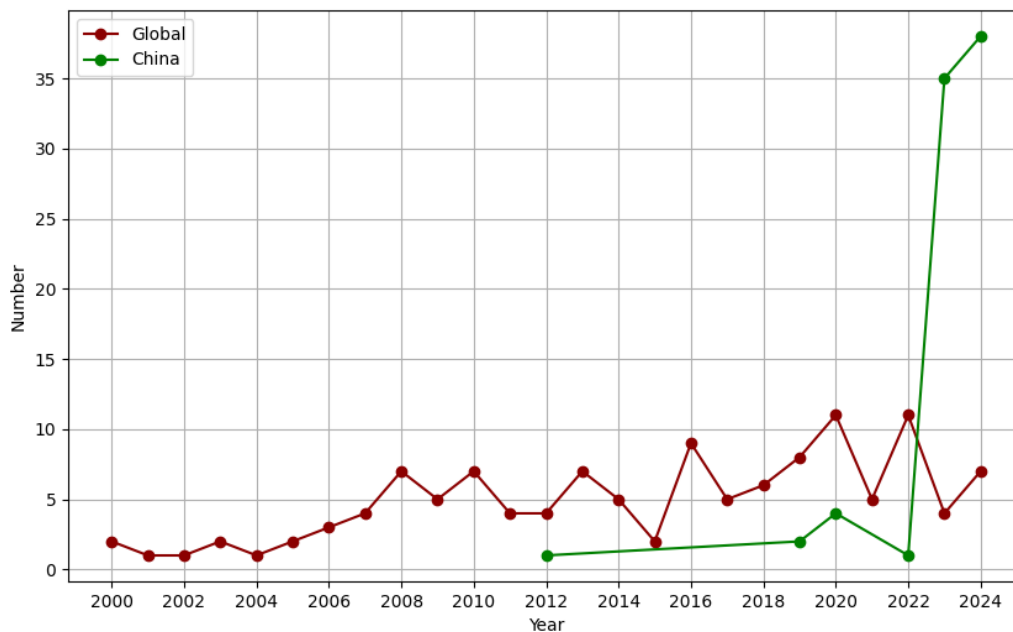


Figure 2: From 2000 to 2023, the publication trend of Chinese and foreign-related papers on "Interdisciplinary Teaching of Music in Primary and Secondary Schools".

As of 2023, compared with the British and United States, China's overall academic development in the field of interdisciplinary music teaching is relatively late, and compared with the global publication of interdisciplinary music education for primary and secondary schools, China's average annual publication volume is not much different. At the beginning of research in China, there was foreign literature showing that researchers spent a lot of time and effort evaluating the research basis of interdisciplinary educational practices and collecting evidence to demonstrate the effectiveness of interdisciplinarity [4].

An analysis of the two trend charts shows that there are some interesting years in the publication of domestic literature in China, which are closely related to the documents related to the music curriculum released by the Chinese Ministry of Education. As early as the 2011 edition of the Compulsory Education Music Curriculum Standards, the basic concept of the curriculum mentioned that "in teaching, subject synthesis should highlight the characteristics of music and art, build organic connections with other art categories and other disciplines through specific music materials, and compare the expressions of different art categories in the synthesis process, expand students' artistic horizons, and deepen students' understanding of music and art". By 2015, *Opinions on Comprehensively Strengthening and Improving School Aesthetic Education* mentioned that "teachers should be supported to cooperate in the development and development of aesthetic education courses and advocate interdisciplinary cooperation", clearly proposing interdisciplinary links and supporting teachers to actively try. By 2022 the Ministry of Education published the newly revised *Compulsory Education Curriculum Program (2022 Edition)*, which began to emphasize, "the establishment of interdisciplinary thematic learning activities to strengthen the interconnectedness of disciplines, drive the integrated implementation of the curriculum, and strengthen the practical requirements," and in the section of the curriculum standards, it is clearly stated that "Each course devotes no less than 10% of class time to designing interdisciplinary thematic learning."

It can be seen that the release of relevant educational documents in each period directly or indirectly affects the attention of educators to a topic, and the analysis of the important educational documents of each time can be found layer by layer, from proposing the effective relationship

between music materials and other different disciplines in the subject synthesis, to vigorously supporting teachers to carry out interdisciplinary teaching, and finally clearly pointing out the proportion of interdisciplinarity in curriculum design, and implementing the visual requirements in practice.

3. Discussion

3.1. Interdisciplinary collocation

3.1.1. Music disciplines and related art categories

Dance, according to the theme of the song, with some dance movements arranged into the song, to echo the ups and downs of the music melody and the swaying of the rhythm, so that students can have a deeper understanding of the emotional expression and rhythmic characteristics of music in the body rhythm [5].

Stage, performing arts forms, of course, can produce effective for students to learn musical content of visual and auditory stimuli, teachers will also learn how to incorporate the creative teaching method in the whole course and share their research project based on art, their art form for open the performing arts(music, dance, A course in dramatic(visual)representation [6].

The combination of art, music, and art adopts the practice of drawing while listening, drawing with music or music picture book. For example, the length of the value of notes can be drawn on the white paper with lines, or after listening to a piece of theme music, students can draw their understanding of the song by drawing pictures to increase the distance between them and the song [7]. Everyone has a different understanding of the same piece of music. Students draw pictures while listening to the music, draw the pictures in their minds and explain them with language, which can quickly show each student's personalized interpretation of the music they hear [8].

3.2. Music and other disciplines

Technology, which introduces middle school students to computer literacy in the Choral Program, uses engaging music to help students who would not normally be willing to learn technology to program choral music under STEM (Science, Technology, Engineering, and Math) [9]. Technology makes the abstraction of music visualized, and the traditional music classroom guides students to develop their imagination through singing and listening, and the participation of science and technology makes the imagination range diverse, which increases the interest in classroom teaching.

Mathematically, the literature suggests that by understanding the guitar and thus exploring the learning of the law of averages, for example, by adding a geometric component, it is possible to understand the proportional segmentation of the guitar neck [10]. There is also a collaboration between music and mathematics, such as selecting different containers to hold different volumes of water, using the sound produced by containers of different volumes to create instruments of different pitches, and calculating the volume of water in each container based on the difference in sound effects played. This allows students to understand music, experience music, and create music from different perspectives [11].

Literature, China is rich in ethnic music, which is the crystallization of history and culture and represents the characteristics of cultural expression of a place and a group. When teachers tell students about a certain ethnic music, they can properly introduce the cultural background of the song and the origin of composition and creation, so that students can better understand the charm of music [12]. When primary school students read articles in Chinese books, they have a limited understanding of the meaning of the words, and through listening to the performance or singing of music with relevant themes, they will get deeper emotions and experience sensing the connotation of the words [13]. The

combination of words and music is a common teaching method in music class or culture class, and many of them are used in reciting ancient poetry and other occasions. Music is explained through words, and words are expressed through music. The combination of the two can effectively improve students' understanding of knowledge points.

English, for example, when learning the song "If You're Happy, Clap Your Hands", use the song "You're Happy" as an introduction and design a music scenario: when teaching the song, the teacher guides students to feel the rhythm of the music and tells them to clap their hands when singing "happy", effectively improving students' grasp of the rhythm. This not only consolidates the words learned, but also stimulates students' interest in learning, improves listening and speaking abilities[14].

3.3. Value and advantages

(1) Multi-disciplinary integration of various disciplines broadens learning perspectives. Under the background of cultural blending, the general idea of music interdisciplinary teaching is to establish the idea of mutual benefit, introduce the knowledge of other disciplines into music teaching, and make full use of the advantages of music education in the teaching of other disciplines [15]. To achieve the teaching assistance effect of multi-disciplinary collaboration, teachers establish connections between different disciplines, integrate various teaching methods such as literature, art and technology, and guide students to experience music emotion, understand music content and master music knowledge more deeply and diversified, to broaden students' learning methods and learning perspectives [16].

(2) Guiding students to active learning. The interdisciplinary approach links different disciplines, and learning becomes more lively and interesting, which in turn stimulates students' interest in learning, increases students' desire to explore and curiosity in the classroom, and thus improves learning efficiency. Students will be actively involved and participate in the curriculum designed by the teacher, so that students with the curiosity of how to generate interdisciplinary links actively into the sea of knowledge, improve classroom participation and knowledge absorption.

(3) Improve the comprehensive ability of students. The interdisciplinary approach to learning enables students to grasp subject knowledge from multiple perspectives and ways and flexibly understand the learning content, which can effectively trigger students' responsiveness and imagination. In addition, the interdisciplinary classroom can be combined with other disciplines for practice, such as painting, dancing, robotics and other content, students will learn how to apply theory to practical situations, enhance manual operation ability, and have a new understanding of other disciplines through interdisciplinary learning, and improve the knowledge reserve of the corresponding disciplines.

3.4. Innovation and difficulties

The research content of this paper is to investigate the application model of music interdisciplinary teaching in primary and secondary school classrooms after the 21st century, and through collecting the following findings:

At the teaching level, while China's domestic education system has made strides in incorporating interdisciplinary teaching methodologies, the innovations implemented thus far have been primarily confined to the classroom setting. These initiatives, while demonstrating a degree of inventiveness, often fall short of fostering communication and collaboration beyond the immediate teaching environment. The current model, despite its merits, remains limited in scope, underscoring the need for a broader approach to interdisciplinary education that transcends the boundaries of the traditional classroom and encourages more extensive engagement with diverse perspectives and domains of knowledge. At the same time, the domestic interdisciplinary approach is mostly designed by teachers

according to the needs of the curriculum content of the classroom content of the specialty, and the lack of theoretical support from professional researchers in external disciplines. Teachers are not clear enough about the concept of interdisciplinary music teaching, and most music teachers focus on their teaching field, and their teaching methods are somewhat isolated. Moreover, teachers lack rich practice platforms and communication platforms outside the classroom to update their understanding of the dynamics of other disciplines, resulting in insufficient opportunities to collide with other disciplines, an inability to produce effective links between the disciplines, and ultimately failure to get the correct feedback on the use of teaching.

Finally, the need for teachers to choose interdisciplinary subjects with a certain scope means that interdisciplinary attempts can only be made with subjects that find relevance to the subject of music. Making these disciplines serve the teaching of music in a way that combines naturally is the first choice for interdisciplinary selection, otherwise it will be recognized as being outside the interdisciplinary boundaries [17].

At the school level, the importance and popularity of interdisciplinary music teaching is unevenly distributed across the country. In some developed provinces or cities, the popularity is higher, and some schools have already emphasized and promoted interdisciplinary teaching by teachers of various subjects, which can comprehensively improve students' learning ability and expand their knowledge. However, there is a lack of, but also a shortage of, backward areas where the importance of updating music lessons is easily overlooked due to the inadequacy of the teaching facilities provided by the schools, or an over-emphasis on the improvement of the performance of cultural subjects.

Most music disciplines, including music education, have been exploring other disciplines as well, which means that each field has interdisciplinary thinking as a starting point for research, and it should be possible to create multiple platforms for cross-disciplinary dialog and reflection [18].

Therefore, to better utilize the advantages of interdisciplinary teaching, the school level can actively set up interdisciplinary research groups, provide interdisciplinary exchange platforms, provide interdisciplinary training for teachers, strengthen the cultivation of research-oriented teachers, expand the existing knowledge system of teachers, and strengthen cooperation and exchange among teachers [19]. Music education related lecturers also need to further improve the interdisciplinary content of the reserve and application of knowledge, improve the degree of understanding of other contact disciplines, expanding the knowledge of the content of the knowledge involved in the classroom, students in the classroom can also learn more in-depth knowledge, which will help teachers to effectively utilize the advantages of cross-disciplinary teaching and learning, and carry out the subsequent process of music teaching more efficiently.

4. Conclusion

After searching the literature on the direction of interdisciplinary teaching of music in primary and secondary schools in China and abroad, this study found that there has been a significant increase in the attention to music education in interdisciplinary research and the number of publications in recent years, but after reading it, it was found that the degree of innovation and richness of the literature in China is less than that in foreign countries. The scope of attention is mostly on the level of some insights of teachers and staff on the process of curriculum, but the theory and practical operation are still ambiguous, and there is no integration of a teaching model that is recognized by the industry as worthy of promotion and operation.

In the author's opinion, interdisciplinarity is a theme that can be continuously updated, expanded, and enriched in the teaching mode. To better reflect the advantages of interdisciplinarity in teaching and learning, music teachers should take the initiative to try interdisciplinarity in teaching and learning, actively communicate between disciplines to promote the construction of an exchange

platform, strengthen the understanding of the pedagogical advantages of the disciplines, flexibly integrate the knowledge of the disciplines related to the music classroom, and by drawing on the latest international experience, explore the integration of the concept of interdisciplinarity in the new education. By drawing on the latest international experience, we are exploring the integration of the concept of interdisciplinary education into the practice of the new round of basic music education reform. The statistical results of this paper hope to provide a certain reference value for enthusiasts who want to understand the interdisciplinary teaching mode of music in primary and secondary schools and also serve as a theoretical basis for interdisciplinary researchers.

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