

# **Discipline without Boundary, Thinking without Boundary: Music Teaching Practice Based on Interdisciplinary Curriculum in Middle School**

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**Abstract:** This paper initially put forward the importance of interdisciplinary thinking to students, elaborated that middle school students are endowed with the intellectual basis of interdisciplinary thinking and that the conditions to develop interdisciplinary curriculum by the author in the school. Through literature review, the current status of interdisciplinary research in middle schools was generalized as music discipline often plays as a supplementary role in interdisciplinary curriculum and lack of interdisciplinary teaching practice between music and multi-subject. With this as a starting point, two interdisciplinary courses (without boundaries) have been developed as firstly music (main) and mathematics (auxiliary), and secondly music and Chinese, fine arts and dance. Finally, a reflection on these two classes and the prospect for further research were proposed as students will develop their thinking ability with in-depth and breadth, and the class will unfold the boundless learning realm of discipline and thinking.

## **1 The Necessity and Feasibility of Interdisciplinary Education**

The phenomena and problems encountered by people in life are often complex, and it usually requires multidisciplinary literacy to explain the phenomena or deal with the problems [2].

Interdisciplinary integration enables people to have a more comprehensive understanding of things; the cultivation of interdisciplinary integrated thinking is of great significance to the lifelong development of students: Ultimately, education is to cultivate people who are useful to society and who can solve problems in the real world [4].

The concept of interdisciplinary education is highly abstract and dialectical, and it is a highly inductive generalization of the commonality of scientific knowledge. Talent training should start from basic education. Junior high school is a very critical period for basic education, which is the golden period of intellectual development of young people, and students have good plasticity[5], and abstract logical thinking began to develop its dominant position. Such thinking characteristics provided the possibility for them to carry out interdisciplinary study [3].

I am engaged in a public junior high school, which features the interdisciplinary curriculum. The school has already set up a "boundless thinking workshop", which has gathered outstanding young teachers of various disciplines, who are active in thinking and forge ahead. As the core member of thinking workshop with the background of music discipline, the author and many other teachers developed more interdisciplinary "borderless" lessons [1] that were designed to help students analyze and integrate knowledge, and guide them to use the knowledge to solve practical problems so that the students will those with solid scientific literacy, advanced thinking mode and innovative capability.

## **2 Thinking and Understanding of the Interdisciplinary Teaching for Music Discipline in Middle School**

Interdisciplinary teaching is made with the aim to establish the connection and integration of knowledge and ability of various subjects in the integration and cross-teaching of multi-disciplines, so as to promote the all-round development of students [6]. Under the background of the reform in new curriculum [8], the subject of music in middle schools has become a necessary course for cultivating high-quality students in middle schools with all-round development.

However, it is difficult for students to acquire complete related knowledge in the limited single-subject based teaching, which is hard to meet the needs of all-round development. With the integration of other subjects, other subjects can be used as tools to assist the perceptual music learning, enrich the way of music learning and improve the effectiveness of music classroom. It can break the barriers between disciplines, absorb the nutrients of other disciplines, integrate disciplinary knowledge, and meet the needs of students to feel the complete art and cultural knowledge. The mode and way of thinking of music cross-subject learning can also cause influence on students imperceptibly and help them to open the limited way of thinking of single subject to break the boundaries in knowledge and thinking.

The author found that a lot of front line teachers in music have been trying with efforts in integrated teaching between music and other disciplines [7]. Besides, the integrated and completed teaching cases were embodied in the integration of music and other disciplines. However, the music is regarded as auxiliary discipline, and there are few researches on interdisciplinary teaching between other disciplines and music as the major course. And most of them are cross-disciplinary practices of two disciplines, and there is no attempt of multi-disciplinary cross-disciplinary practices. In addition, music is a humanities subject, and most of the materials are cross-disciplinary teaching related to humanities. However, fortunately, the concept, matters that need to be noticed in teaching practice in interdisciplinary teaching in junior high school developed for other discipline can be used as the reference for interdisciplinary teaching of music in middle school. The author made attempts to develop the interdisciplinary teaching, interdisciplinary teaching with music as the main course, cross-discipline teaching between music and non-humanity course so as to explore the depth and breadth of music in interdisciplinary teaching. What matters most is that it will benefit students and is conducive for the all-round development of students.

### **3 Cross-disciplinary Teaching for Music in Middle School and "No Boundary" Based Lesson**

#### **3.1 Across the Subject Gap, Mathematics Serves as Assistance in Music Learning**

##### **3.1.1. Lesson Introduction**

In the "Varied lines" developed by the author and the math teachers, students are required to draw the melody line on mathematics coordinate axes, realizing the visualization of music. Through the observation and comparison of melody line, students will more intuitively feel and understand music, which will enable students to express the perception of music in a easier manner. This course combines perceptual music with rational mathematics, and mathematics is used as an instrumental subject to assist music learning, breaking the boundary and gap between disciplines, expanding the way of music learning and digging the depth of music learning.

##### **3.1.2. Critical Step**

First of all, single subject based teaching paves the way for interdisciplinary teaching in single subject knowledge and perceptual cognition. The music teacher will lead the students to get familiar with the main melody of the music "Anitra Dance" and draw the melody line with gestures. Then the math teacher teaches how to determine the position of a point in an axis based on its coordinates.

The second is interdisciplinary teaching, figuring out how to use mathematical axes to draw musical melodic lines. The music teacher gives knowledge in the following aspects: ① Marking the pitch of the note on the vertical axis of the coordinate axis of the mathematics plane: 1 unit of length on the vertical axis of the mathematics represents a semitone of the music, and so on. ② The horizontal axis of the coordinate axis of the mathematical plane indicates the sound value of the note: 1 unit of length on the horizontal axis of the mathematical plane represents the half beat of the music, and so on. Based on this, each sound of the main melody is regarded as a map points on mathematics coordinate axes, and to map each sound line based on the duration of each sound length, the midpoint in of the lines will be connected and a melody line can be obtained, and then to choose suitable colors to describe melody line on the basis of music mood. According to perceptual

cognition such as previous listening and gestures activities and observation and rational analysis of the melody line, complete the learning form.

### 3.1.3. Learning Outcomes

**Table 1.** A form filled out by students

Music	Melody line	Rhythm	Emotion	Performance
Anitra's Dance	Frequent ups and downs	Dense	Pleasant	Anitra was charming and active

## 3.2 Multidisciplinary and Cross-Disciplinary Teaching, Music, Art, Chinese and Dance

### 3.2.1. Lesson Introduction

In the "Boundless" course "Emotion of Music, Painting, Poetry and Dance in south of the Yangtze River" jointly developed by the author and teachers from four disciplines of art, Chinese and dance, the four teachers guided the students to appreciate, read, sing and dance according to the cognitive law of the Yuefu in Han Dynasty "Jiangnan", and felt the scenes depicted in ancient poems from different dimensions. Students also experience life in the four forms of creation and display in order to understand things from a wider and more diversified perspective.

"Jiangnan":

Lotus can be picked in the south of the Yangtze River,  
 Lotus leaves are growing in luxuriance,  
 Fish playing among lotus leaves  
 Fish playing among lotus leaves in east side,  
 Fish playing among lotus leaves in west side,  
 Fish playing among lotus leaves in south side,  
 Fish playing among lotus leaves in north side.

### 3.2.2 Critical Steps

Art: the intuitive feeling in appreciation and thinking. Appreciating famous works, intuitively and perceptually feel the lush lotus leaves, the vivid scene of the fish play. Thinking about the use of different lines to show the delicate and graceful lotus. The "one appreciation and one thought" in the art part is not only a preliminary feeling but also a foundation for the subsequent students' creation.

Chinese: Intensive reading deepens understanding. Through the "three-level reading" in turn, gradually feel the creation background, meaning and recitation style of the poem. And how to express the music and the recurring cheerful atmosphere of the recitation by means of broken sentences and drawl. Intensive reading of Chinese helps students to further understand ancient poetry and its phonology, which lays a foundation for the subsequent learning of singing and recitation.

Music: Singing songs to express feelings. Students are encouraged to follow the melody played by the author by ocarina to preliminary learning songs. I will excavate the rest and grace notes in the music which show the vivid feeling of the lush lotus leaves and fish play. Students can sing the song with emotion in order to feel the dance.

Dance: Chant song, I do not know the hand of the dance, the feet of the dance also. The teacher explained and demonstrated the lotus leaf, lotus picking, fish play and other specific actions, students imitate and learn to jump, from a new dimension to understand the music, ancient poetry of the interest.

### 3.2.3. Learning Outcomes

Group learning and comprehensive display: The art group drew the lotus pond, trying to express the scene through the choice of lines, the Chinese group felt the vivid situation of ancient poetry and the joy of lotus gathering in the reciting, the music group expressed the understanding and love of the artistic conception of ancient poetry by singing, the dance group danced "fish play between the

lotus leaves", and experienced the passion for life in the movement.

#### 4 Reflection after Class and Outlook

After observation, the author found that the students were very interested in the course of "Varied line", and there was no discipline problem to be dealt with in the whole course. Students with ordinary music foundation can express their understanding of music more easily by observing the melody line, and describe it with more appropriate words with the help of the visual melody line, which improves the learning effect of music class. In group learning, students can basically define their own learning roles in the group according to their own abilities and specialties, actively participate, seek help or guide others according to their degrees, form a good classroom atmosphere, and reflect the ability to find and solve problems and EQ.

Students are very fond of the course "music, painting, poetry, dance and rhyme in south of the Yangtze River". This class content is very rich, but is built around a content of teaching, students in junior high school are capable of understanding the course, and can better complete subject in learning. In the group learning, right option can be made according to their own interest and the ability, which means that after "general education" in the previous teaching, they join the learning activity that is more suitable for them in own learning. At the end of the integrated display of song, dance, poetry, painting, they finished learning task successfully and expressed their understanding of ancient Chinese poetry in a multidimensional manner.

The author dare not say that each student in the class is cultivated with the a deeper and more dimensional thinking capability. The teaching without boundary for disciplines will not witness immediate feedback in a short period of time, but, I believe that this way of education will certainly have a subtle influence on them. Their ability to think will be endowed with more depth and breadth after enough accumulation. Discipline enjoys no boundary, so does the thinking.

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