Analysis of Music Teaching Mode Innovation based on Intelligent Classroom and Multimedia System

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Abstract
The rapid development of digital multimedia technology has brought us a new educational model, as computer aided multimedia learning. In this paper, the author analyse music teaching mode innovation based on intelligent classroom and multimedia system. Multimedia technology has given full play to the vivid and real-time of information technology, using music software to produce, modify, and output music in electronic form. Through the video, audio, picture display, multimedia music teaching can make students feel more intuitive music, increase the initiative of students learning. The multimedia music system has changed the traditional music teaching mode, expanded the teaching content, let the music teaching become more real, more close to the students' study and life.

Key words: Multimedia system, Intelligent classroom, Music teaching, Mode innovation

1. INTRODUCTION
The development of digital multimedia technology and gradually applied in the field of music education, bring us a new education idea and education mode at the same time, will also put forward higher requirements for music educators (Bao, 2011). Compared with the traditional music education mode and teaching method, the multimedia music teaching system has many advantages, such as enriching the content of music teaching, reducing the burden of teachers' work, making the teaching process more vivid and interesting (Du, 2013). The traditional music teaching mode is teacher centered, it is the teacher to impart knowledge as the main purpose. Since 1990s, in the constructivist learning environment, the status of teachers and students has undergone great changes, and the traditional music teaching mode already cannot adapt to the modern teaching environment, use the multimedia music teaching system, it can solve the traditional music teaching mode and teaching methods of the limitations and deficiencies, and to use the teaching theory of Constructivism in the teaching of music (Halim, 2014). The use of multimedia music teaching system can not only carry out the teaching of specialized courses, but also can make the teaching of professional composition and music creation.

With the development of information technology and network technology, it has greatly enriched the means and modes of modern teaching. In the application of modern educational technology, multimedia teaching is one of the most important parts (Finelli, 2008; Long, 2013). The introduction of modern teaching technology in music teaching can provide a necessary supplement and improvement for the traditional teaching mode, which can greatly enrich the theory of music teaching and improve the construction of the subject. This paper discusses the application of multimedia technology in music teaching, in order to further improve the effectiveness of multimedia technology in music teaching (Tang, 2011). In the traditional music teaching, the backward teaching equipment and the method, the heavy knowledge light skill and the heavy result light process teaching pattern, is not easy to stimulate student's interest in music study. Some computer music software is easy to operate, audio-visual and other advantages in the application of teaching, to deepen the teaching reform, the development of students' music plays an important role.

2. MULTIMEDIA MUSIC TEACHING
2.1 Multimedia teaching
Because of the multimedia technology and give full play to the vivid and real-time information technology, therefore, with the help of software and hardware and network, teachers can adopt various forms of information, including voice, image and other elements, notes. This integrated model can avoid the students' sense of boredom and monotony, strengthen students' music cognition, and achieve better learning effect. For example, explain in music, music can be scanned into the system in advance, teaching through the projector displayed on the screen, and synchronized playback of video and music, make students see clear music at the same time, to obtain vivid visual experience, so as to better understand the transverse structure music and the vertical structure, the introduction of multimedia in music teaching mode, teachers can provide a variety of teaching methods for students to use information technology, such as the fan singing and accompaniment, play audio playback screen, and dynamic music, so that students in the intuitive access to aesthetic experience and
perceptual knowledge, to feel the colourful in order to improve the rational understanding of music image, paving the way.

![Multimedia technology](image1)

**Figure 1** Multimedia technology

Good interaction between teachers and students is the premise of enhancing teaching effect. Due to the use of the system software / hardware technology, multimedia technology can be the leading role of the students' initiative and teachers together, students can receive teacher feedback timely and accurately. For example, in the teaching process of two voices, can use feedback information system in a timely manner, to provide convenience for the teachers and students between the local imitation and practice, thereby greatly increasing the frequency of interaction between teachers and students. In the multimedia technology, the teaching content can be presented to students in a variety of ways, such as maps, text, sound, image, spectrum, to arouse the students' perception plays a good role, and to improve the efficiency of learning. For example, in the musical knowledge explained, can use multimedia stereo image of each instrument will be presented on the big screen, and add a hyperlink in the musical instrument image next to the teacher when operating the mouse cursor to the instrument, it will bring up notation and range form, help the students of knowledge grasp firmly.

![Multimedia teaching](image2)

**Figure 2** Multimedia teaching

### 2.2 Network teaching platform

As the world's largest provider of network teaching platform, network teaching platform is a set of voice, image and text in one, a kind of teaching mode teaching platform is committed to strengthening the virtual learning environment, classroom teaching and network teaching platform, network teaching platform and interactive. In the process of resource management, centralized online exchange BB platform, assessment and management, system management function module, breaking the traditional teaching in time and space, and the optimization of curriculum resources, more fully reflects the effective communication and interaction between
In the teaching mode, the teacher is no longer the spread of knowledge; it is the organizer and participant of the teaching process. Under the guidance of teachers and organizations, students to explore, cooperation and communication as the main form, get a lot of knowledge, so as to establish a set of lifelong development of the learning system.

And the core function of BB platform is very powerful, so that teachers can create content, curriculum management, effectively generate work, strengthen cooperation and exchange and evaluation, to help enterprises achieve important objectives related to teaching. Since 2003, more than and 200 universities and educational institutions select the “BB” platform. We buy the use of the BB network teaching platform in 2007 began to go to school. At present, there are 187 English listening courses. 2008 create a formal network course. Based on the traditional teaching method, based on the BB platform, set up the network curriculum, curriculum information, curriculum documents, external links, operation, mainly for discussion, classroom teaching and extracurricular learning organically, make learning easier to learn, enrich the forms of learning, the effect is more prominent, can greatly stimulate students’ learning motivation. At the same time, the opening of the network courses to a large extent make up for the traditional teaching of small defects in the teaching of science and information, so that students from the classroom to the outside of the classroom, in order to ensure adequate language input. As the teaching content, teaching platform BB traditional operation and communication network test, to obtain new features, expanding teaching methods (especially the feedback information, real-time, personalized teachers) teaching, adjust teaching methods, fully mobilize the enthusiasm of students is very favorable.

### Table 1 Network teaching platform framework

<table>
<thead>
<tr>
<th>Function of curriculum design</th>
<th>Communication cooperation function</th>
<th>management function</th>
<th>Administrative function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional design tools</td>
<td>BBS discussion area</td>
<td>Course unit management</td>
<td>Secure login</td>
</tr>
<tr>
<td>Curriculum design template</td>
<td>Internal e-mail</td>
<td>Self testing management</td>
<td>Technical support</td>
</tr>
<tr>
<td>Course website</td>
<td>chat online</td>
<td>Job score management</td>
<td></td>
</tr>
<tr>
<td>search engine</td>
<td>Audio visual conference</td>
<td>Student online activity tracking</td>
<td></td>
</tr>
<tr>
<td>Student web page</td>
<td>File sharing</td>
<td>cod</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Working group</td>
<td>Student achievement management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic whiteboard</td>
<td>Online submission</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>digital library</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective course</td>
<td></td>
</tr>
</tbody>
</table>
2.3 Computer music teaching mode

The use of computer music software combined with computer multimedia technology for music teaching, is conducive to stimulate students' interest in learning and the role of cognitive subject. Teachers in the use of music software at the same time, but also pay attention to their own charm and perception of music to infect students. Reasonable application of computer music software to the classroom teaching, we can enhance the performance of teaching content, enrich our teaching methods, improve teaching methods. Through the research and analysis of this topic, we find the conjunction point between computer music software teaching and traditional music teaching. Provide the basic knowledge of computer music software and basic skills for music teachers, so as to enhance the quality of classroom teaching, to promote the mastery of knowledge of music and music skills improve, the inner experience into real sound effects, improve students' music quality and ability.

MIDI is a language for exchanging information between electronic musical instruments by means of transmitting the information of musical instruments. The MIDI file is not a recorded voice, but in the process of recording music sound information, including the treble, rhythm, timbre, intensity, pitch, notes, notes began to play the notes of the instrument, the volume of notes and time instruction. Compared to the MIDI file and the music waveform file, the main advantage lies in: one is the information is easy to modify, change the pitch of a voice, it only need a mouse click to complete. Print and track configuration or staff notation is also quite easy. Two is to produce a small amount of data to facilitate storage and network transmission. The disadvantage is that MIDI music is difficult to reproduce the true nature of the musical instrument sound. MIDI technology in addition to the application of music, in the stage audio, lighting and other digital devices are widely used.

Figure 4 Computer music software

Figure 5 Musical Instrument Digital Interface
2.4. Music production

In the daily teaching work of music teachers, we always have a lot of music scores. It is not convenient to carry, find and read the paper music data. The use of computer music software for music production, modification and output of music in the form of electronic, can carry the transmission is convenient, quick and long-term search and save, and to share and reuse of resources. It is not only to improve the quality of teaching plan and courseware, but also to ensure the teaching quality.

![Musical notation software](image)

**Figure 6** Musical notation software

3. EVALUATING THE EFFECTIVE OF THE PLATFORM

The function module design of BB platform is the main line, communication and evaluation. It can support different types of learning models, such as autonomous learning, cooperative learning and interactive learning platform. BB learning is to strengthen and supplement the traditional classroom teaching, the virtual learning environment provides a better, can maximize the sharing of teaching resources and interactive opportunities.

3.1. Enrich the teaching content

With the development of computer science and technology, the further development of network and multimedia technology is more and more colorful. In the Taishan plain BB can upload learning materials, a series of text and background, the author's writing background and problems, so you can watch the video and audio data and other written materials are complete, through the network platform. Students can also upload a platform to share with teachers and other students, help to accumulate more information, in the teaching process of teachers' teaching process and students' information of one-way transmission of information.

![BB Network teaching content](image)

**Figure 7** BB Network teaching content

3.2 Broaden the knowledge channel
Library, information room and network is a huge information base. In the face of such a wealth of information resources, how to access and use valuable information becomes a learning ability. According to different teaching content and research topics, we encourage students to use a variety of resources to find relevant information, after screening, to complete the data uploaded to the BB platform for all teachers and students to share. In the multitude of information resources, the students will be exposed to the process of transcendence, combined with some information; collecting all kinds of information and effective screening, can not only stimulate students' knowledge, enrich their knowledge structure, but also can learn and exercise logical thinking ability and comprehensive ability. Lay the foundation for the cultivation of students' graduation thesis.

**Figure 8** Online learning way

### 3.3 Autonomous Learning Ability

In the teaching mode, teachers from the traditional "knowledge" to the leadership, the coordinator and the answer to the transition, the main task is to help and guide students to find the key and research topics. Students are no longer passive acceptance of knowledge, only waiting for the teacher to feed, but the initiative to search for relevant information, and in the BB platform to communicate with teachers and other students. Every student has the responsibility and obligation to contribute their ideas and opinions in the communication with others. According to their actual needs, the use of a variety of resources to tap the knowledge of the process, is the process of self construction of students, this is a cycle of reflection, interaction process. This kind of active participation process further stimulates the student's study initiative, has played an important role in the teaching. Improving autonomous learning ability is helpful to the cultivation of students' autonomous learning and lifelong learning habits and attitudes.

**Figure 9** Autonomous Learning Ability
### Table 2 Student achievement comparison

<table>
<thead>
<tr>
<th>class</th>
<th>Mean</th>
<th>Std.Deviation</th>
<th>Std.error</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental class</td>
<td>62.45</td>
<td>5.3987</td>
<td>0.4563</td>
<td>1.678</td>
<td>132</td>
<td>0.789</td>
</tr>
<tr>
<td>Control class</td>
<td>64.01</td>
<td>6.4655</td>
<td>0.9678</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.4 Cultivating students' thinking ability

Influenced by the Chinese culture and the traditional teaching mode, few students have a critical understanding of knowledge, and there is no doubt about the authority of teachers. Most teachers in the actual teaching process is also used to maintain their authority image, do not take the initiative to encourage students to criticize the teaching content of the point of view. If things go on like this, students are gradually losing their ability to think independently, not more.

Have the spirit of exploration, take the initiative to find the problem, solve the problem. In the BB platform, teachers encourage students to comment on the subject and text content, as well as the author's point of view. In this process of interaction, students will hear different opinions, will be on their own point of view, it will take the initiative to find more information to support their views or refute the views of others. In this cognitive conflict, students will think of their own knowledge, and then added, and then set up. Lively discussion of students, not only exercise their ability to use the language flexibly, but also cultivate their own logical thinking ability and independent thinking ability. These abilities will help students to learn other professional courses, but also help them to enter the community after the independent study and work.

### Table 3 Student achievement comparison

<table>
<thead>
<tr>
<th>class</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Experimental class</td>
<td>78.45</td>
<td>8.3789</td>
<td>0.8790</td>
<td>2.678</td>
<td>132</td>
<td>0.000</td>
</tr>
<tr>
<td>Control class</td>
<td>68.65</td>
<td>10.4625</td>
<td>1.4364</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.5 Construction of evaluation system

In the operation of the BB platform, testing and statistical system, can reflect the work completed and participate in student activities platform. In the teaching mode, we try to assess the knowledge of the traditional evaluation system is the core of formative evaluation, the evaluation system of examination ability, is focused on the evaluation of students' autonomous learning ability and consciousness is to improve and solve problems, improve the ability of independent thinking and no improvement. By tracking the performance of students in the BB platform, teachers can clearly see the indicators of these potential factors instead of the traditional teaching process that can be quantified. This new dynamic evaluation system has changed the traditional examination way more stringent, make students pay more attention to their learning process, and actively participate in the teaching process, more and more shows the main function, teaching evaluation, and often form a virtuous cycle.

### Figure 10 Online course test

4. THE INFLUENCE OF MULTIMEDIA TECHNOLOGY ON MUSIC EDUCATION
4.1 Musical composition

Before the advent of computer music, music production is likely to go through some of these steps. Composer according to their own experience and creative requirements to complete the creation of the works, that is to write a variety of musical instruments. Then to please the relevant bands, such as electro acoustic band, orchestra or band of people to orchestration, rehearsal and recording. According to the effect of the performance, the composer may also have to work on a number of changes and improvements, in the end we can enjoy a complete music works. It takes a few months or even a few years to complete a work, but also consume a lot of manpower and financial resources, so the production cost of large music works will be high. Now, the use of computer music software for music production, completely changed the previous production methods. Only one person, a system can complete the whole process of creating a work. In addition to professional composers, we ordinary people as long as the master some basic knowledge of music and audio related knowledge, and then with the help of a plug-in with timbre music production software can make music and music. One side of the idea, while writing spectrum, can immediately hear the effect in order to modify. No need to ask the band to spend a lot of time doing it. Thus greatly saving the cost of production, for the popularity of music plays a role in promoting.

4.2 Music Teaching

Operating in the Microsoft WINDOWS operating system, the software can be applied in the field of music, can be called computer music software. These types of software, a wide variety of technical and functional aspects of the focus. In my opinion, the degree of difficulty and function of software operation can be roughly divided into two categories: one is simple and easy to operate. The basic functions of these software can meet the needs of our daily teaching and learning. Another is a more professional software, the operation is relatively complex, professional staff with professional hardware and equipment. But this kind of function is strong, can be competent for the advanced task of music production.

1) Practicality: Computer music software generally has the function of audio-visual integration, which fully embodies the characteristics of sound is the nature of music, make up the history of written or printed paper music without sound. Computer music software to run fast and convenient, you can play...
over and over again with a variety of sound playing a variety of music. In the process of repeated practice, students grasp the basic knowledge of music. The basic quality of music, music professional skills have been improved.

2) **Comprehensiveness:** Through the computer music software into the teaching, depending on the performance of the overall performance of the students, listen to, sing the music. Open the human body to communicate with the outside world of multiple channels of information. In this way, we can cultivate students' sentiment, enrich their imagination and improve their appreciation of music. Ear Master software also has intelligent solfeggio, and learners interact, objective and fair evaluation in assisting students literacy training at the same time.

3) **Flexibility:** The first is the time and place for students to study flexibly. Students in their own computer to install Music software, can be arranged according to their own time to learn and practice, the teacher taught in the classroom to review the contents of consolidation. Followed by learning content and flexible way. Students can be arranged according to their personal learning content and focus, for the unknown, difficult to grasp the software can be repeated learning.

![Music Education Software](image)

**Figure 12 Music Education Software**

5. **COMPUTER AIDED MUSIC TEACHING MODEL INNOVATION**

5.1 **Music appreciation teaching mode**

In China, the main form of music education is classroom teaching. Combined with multimedia and network technology, according to the specific teaching content, you can choose the appropriate teaching methods. According to their own practical experience, the introduction of multimedia technology in the teaching of music appreciation, music theory, to build a distinctive teaching model. Music appreciation course is different from other music courses, teachers should pay attention to the guidance of students. Only fully mobilize the students' senses, so that students take the initiative to explore, to experience and feel the music, in order to receive the desired results. It can be seen that the music appreciation course focuses on the students' cognition and feeling of the music material, and is concerned with the achievement of the students' emotional goals. Therefore, teachers can use multimedia technology to prevent and guide students. First of all, the use of video clips, to provide students with the background information of music materials, such as the composer's life experience, the work of the book, the background of the work, the industry's evaluation, etc.. Through multimedia technology, video, image display. After the students of music material have a general understanding of the creation and use of multimedia technology in the teaching situation, through a variety of media, including video, audio, animation, music resources for students, so that students in the context of blending situation gets personally on the scene artistic feelings, causing the emotional resonance, meet the course the teaching effect.

In the teaching of music appreciation, the combination of multimedia technology and Internet technology can give full play to the advantages of multimedia teaching. In the pre - and post class, students can search through the network to find the historical and cultural background and other information that needs to be remembered, which will increase the initiative of students' learning. In addition, the creation of relevant forums, to encourage students to actively participate in the discussion of art appreciation course, the development of thinking, and to their own cognitive perspective and to free evaluation of music works, help students improve the ability of appreciation. Thus, the application of multimedia technology in music appreciation teaching and
provide a broader space, the use of multimedia technology to graphic audio-visual, a variety of sensory stimulation and mobilize the students in the interactive network, through timely, timely feedback, can significantly improve the teaching efficiency.

5.2 Music theory teaching mode

The traditional theory of music teaching is monotonous and boring, in support of multimedia technology, there are two ways of teaching music theory, a way is, according to the characteristics of vivid multimedia, make the students a variety of senses have been mobilized, the theoretical knowledge of activation, from the abstract into concrete, active in the atmosphere of the classroom at the same time, making it easy for students to get knowledge. For example, in the music theory of "size discrimination" in the teaching, teachers can make use of multimedia, the music and sound together, to demonstrate to the students, can significantly reduce this part of the difficulty of teaching. Another way is to use the graphics and graphics functions of multimedia technology to compare, through the visualization of the demonstration to facilitate student knowledge classification, consolidate the memory of students. Teaching music theory, theory of knowledge need auxiliary materials for many cases, but the multimedia teaching information capacity, graphic combination and correlation can easily demonstrate knowledge content, convenient for students to form the correct cognition.

For example, in harmony teaching, explaining the four part harmony, and harmony as the teacher piano level four parts range limit, the actual sound effect is often difficult to show students the four part harmony and the. The use of multimedia music teaching system, teachers can use the corresponding music software, such as CUBASE, SONAR and so on, before class made all classes need any difficulty. In the classroom, according to the needs of the classroom, with the click of a mouse, you can see the students can hear the music and sound, can also according to need to repeatedly listen to any music or listen to any one or several. This not only reduces the teachers in the classroom. Copy time, reduce the difficulty of explaining the boring music, but also stimulate students' interest in learning, improve the learning effect.

6. CONCLUSION

Computer music software technology has become a powerful means of modern music teaching, the application of music education in all types of schools at all levels will be very broad prospects. The music education in China from electronic music to music software into the classroom, that experience, computer music software used in teaching, change the traditional music teaching and thinking, expand the teaching content, let the music teaching become more real, more close to the students' learning and life. At the same time, it also provides a new way for students and other music lovers to learn music.

Music teachers must through continuous learning, thinking and research, to find a meeting point of computer music software teaching and traditional music teaching. Computer music software as an auxiliary tool to enhance the teaching content of the form of expression, enrich our teaching methods, improve teaching methods, improve the quality of classroom teaching. At the same time in a reasonable and appropriate use of music software, but also through their own singing, playing and other musical charm to infect students. Promote students' knowledge of music and improve their musical skills, improve students' creative ability.

REFERENCES