Multimedia and Network Technique applied in the Piano Teaching and Playing

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Abstract: Nowadays, with the rapid development of digital information, our classroom becomes an information studying environment day by day. Multimedia and network technique are used in every learning area. Piano teaching music education in college is becoming a strong profession. Multimedia and network technology are applied to piano teaching and musical performance that represent a new teaching idea and practice styles. The diversification trend of music teaching and greatly promoted students' absorbing ability have increased the extensive use of multimedia-assisted instruction in music teaching. Conclusions have been drawn from the research that multimedia-assisted instruction can improve the absorbing ability of students' music learning, that teaching courseware of informative and interesting content may enhance students' interest in learning, that effective interaction between teachers and students can improve the effectiveness of multimedia music instruction, and that students accepting more multimedia-assisted music instruction turn to have better absorbing ability.

1. Introduction

With the constant development of science and technology today, computer network multimedia technology and network technology has a huge impact on music research. Network multimedia technology comes into being with the continuous development of computer hardware and software technology and mature. It refers to graphic audio-visual information in the form of synthesis. Here can be interpreted on the computer platform for information carrier, including graphic images, audio, video, text collection, processing, processing and reproduction, the more comprehensive information expression and expressive force. Network multimedia technology research has become the needs of the development of a new era and the needs of the development of music study, make teenagers sensibility, imagination, expression and creativity, comprehensive ability to overall improve, has played an important role in the study, the shifting patterns of research on traditional music and adolescents made great contribution to the improvement of quality. In music research, focus of teenagers and biased towards the MIDI music, voice, text, images, animation, film, video and other multimedia network dynamic comprehensive information technology [1]. Music teachers master the modern information technology, using the Internet to the super encyclopedia, let teenagers to learn how to use information technology to get music discipline knowledge, improve their music aesthetic ability and cooperation ability has the trend of the times. So not only improve the quality of the teenagers, and greatly improve the study effect. During the study, the teacher wants to teach knowledge related to works of music, use of modern means of science and technology than traditional dictation research can enlighten teenagers more imagination thinking, to help teenagers to understand works, more image expression of the content.

Multimedia and network technology are applied to piano teaching and musical performance that represent a new teaching idea and practice styles. Piano teaching in multimedia technology as the carrier of constantly improve and develop. Network multimedia technology research is just part of a study to piano teaching, like a piece of chalk, a blackboard, paper, pen, etc, as auxiliary means, emphasize how to play the principal role of teenagers, if too much emphasis on the role of network multimedia technology into the erroneous zone. Multimedia technology can not only help teachers better analyze and explain vocal music's synthesis and decomposition, but reduce the interaction

between teachers and students in vocal music practice course, leading to teaching misunderstandings like lack of communication between teachers and students.

2. Multimedia and network technology plays an important role in teaching piano

Multimedia-assisted music teaching mode's appearance brought earth-shaking changes to the way and form of music teaching. The advantages of multimedia-assisted music teaching mainly lie in the following areas:

Multimedia-assisted teaching strengthens the pluralism and intuitiveness of vocal music skills teaching means. Multimedia teaching enhances the interpretation of music skills practice teaching by demonstrating sound synthesis and decomposition. In music teaching, multimedia teaching, as the open auxiliary teaching model, breaks the traditional boring teaching methods. An electronic courseware can show students a variety of musical instruments' sounds at the same time, and show the diversity of sounds by adjusting sound frequency [2]. Teachers' application of multimedia equipment can mobilize students' learning enthusiasm through a variety of forms of sensory stimulation and significantly promote music skills' teaching quality. The main advantage of multimedia teaching, therefore, is to overcome the problems of traditional teaching's single method, stiff teaching contents and so on. So, in leaping the boundaries of time and space, students may fully exert their imagination and creativity.

Multimedia-assisted music teaching can not only improve teaching efficiency by reducing the unnecessary time of teachers' teaching process, but simplify the teaching content. The teaching contents in multimedia-assisted music teaching are more simple and specific, which improves the efficiency of students' vocal music skills training. Multi-media music teaching process can still synthesize and discompose sounds by making music courseware of detailed software synthesis, elaborately show the comparison of a variety of different music styles, present the contents of electronic courseware from easy to difficult, and highlight the important content by applying volume change or other methods to deepen the students' memory. An electronic courseware may usually contain a large number of teaching contents, can cross the boundaries of time and space, perform transverse comparison, and strengthen the connection and communication among knowledge.

3. The development of Internet makes multimedia technology application in piano teaching

Use of network multimedia technology in piano teaching research, will implement the modern research mode in use in the study of music. Broke the traditional research model, bring unprecedented opportunities for the reform of music study. In research in exam-oriented education to quality education transformation and continuous development of today, our piano teaching is always carry on research to the traditional research model, how to meet the test of music research? How to synchronize with the new curriculum reform? How to use the opportunity of change the mode of previous research? The popularization of computer and the rapid development of network multimedia technology, as music is given priority to with audio-visual research is faced with huge reform. As early as the 20th century the early 70 s America founded the association for the study of computer music, network multimedia technology in the 1990 s music production has developed rapidly in our country, but slow to develop network multimedia technology used in the study of music, each area of the application of network multimedia technology and the study of music cognition, attention, practice is far from enough [3]. This phenomenon seriously restricts the development of our music research career and progress. In the long term, our music study career will be the serious lag. As a music educator will network multimedia technology is widely used in the study of music was forced by the situation, the trend of The Times.

In the piano teaching, multimedia and network technology can combine with teaching and playing organic. For example: I'm in the study of the "Croatian Rhapsody", first of all, with the slide release the photographs and introduction, about a child standing under the setting sun in the ruins of the despair after war trauma, the students after a visual impact, and to enjoy the "Croatian Rhapsody", the work expresses the feelings to give an accurate and deep understanding. As the saying goes: seeing is

believing. How to get to enjoy the best effect? Are the only means of teachers' use of network multimedia technology will be at different times, different regions and different types of audio and video data into research software, then according to the teachers' design of the study reasonable procedure calls, teenagers can learn not only the performance characteristics of each instrument, you can also put the band when the size of the team, the singer's clothing props, performing at the time of the singing style of expression, command gestures, such as music emotion image to see clearly, hear clearly. Lead the students to appreciate the process of "Croatian Rhapsody", the teacher will each movement reached by Musical Instruments, ethnic style, style characteristics, with pictures and music complement explanation, and by playing the piano concerto "Croatian Rhapsody". So, in appreciation at the same time, also learned that is associated with the more and more knowledge, up to twice the result with half the effort.

Here is a piano tutor software application in piano teaching. The Piano Tutor is a computer-based system for teaching beginners how to play the piano. The goal of the system is to supplement traditional piano teaching with an intelligent computer-based teaching system. The Piano Tutor helps the student to practice correctly and make progress on new material between lessons with his or her regular teacher. This is accomplished though an automated system that is always available to the student and is capable of a high level of interactive instruction [4]. One major part of the Piano Tutor is an expert system that embodies knowledge about teaching the piano. In a typical interaction with the Piano Tutor, the student is given some instructions covering new material and is asked to demonstrate mastery of the material by performing an exercise at the keyboard. Based on the student's performance, the Piano Tutor will either point out mistakes, present remedial instruction, ask the students to try again, or select a new lesson for the student.
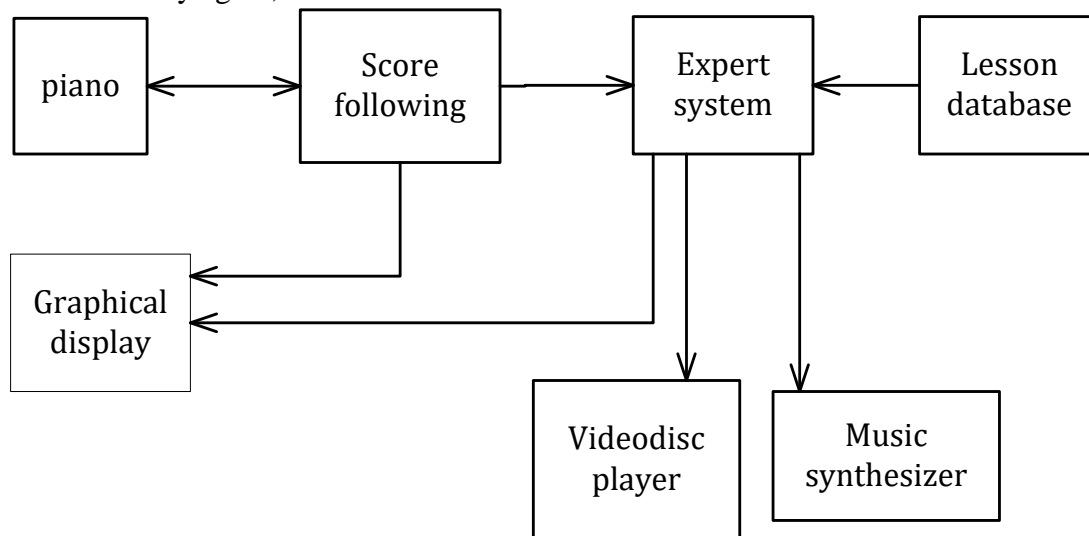

Fig.1 Block diagram of the Piano Tutor's principle components

The Piano Tutor is innovative along several dimensions. First, the system uses state-of-the-art music recognition software to follow student performances. This allows the Piano Tutor to perform many kinds of analyses of student performances and select appropriate remedial actions. A second innovation is that the system uses a variety of input and output devices to enhance interactivity and student interest. A third innovation is our integration of instructional design techniques, formal methods of analysis, production systems and frame-based knowledge representation, and multi-media presentations. To a large degree, this diversity within the project reflects the diversity of the authors and project team: two music professors with expertise in piano instruction, two computer scientists specializing in artificial intelligence, a computer scientist specializing in programming systems, and an instructional designer.

4. The piano teaching and playing reform and innovate under the multimedia and network technology.

With the development of multimedia technology as the medium of the piano education teaching, its goals tend to be hierarchical, stage, and visualization. Currently many schools set a fixed piano teaching goal, the target unable to adapt to different students' learning requirements. It also can't stimulate students' initiative and creativity. In order to change this target teaching mode, a specific personalized mode is put forward which can get more music knowledge from the music team and the network. Each student takes part in multimedia as a carrier of the piano teaching, which can better play the role of motivation and learning objectives guiding [5]. In the process of the exploration of the new piano teaching mode, Teachers can use piano teaching resource instead of teaching materials, teaching reference, the formation of curriculum and teaching material of new ideas based on network database. On the other hand, students can summarize their learning experience and study habits on piano lessons. By using the new method and new learning skills to improve learning efficiency and learning ability. Teachers should take full advantage of multimedia and network which create a virtual environment, and continuously improve student learning piano autonomy and creativity. The students put the knowledge and ability learned from the piano lesson in the multimedia-based music creative and practice, so that the multimedia technology innovation and progress can provide a broader space for piano teaching. Let the multimedia and network technology provide more abundant resources for everybody, bringing vitality to piano teaching reform and improving the quality of talent training.

5. Conclusions

Diversified development trend of contemporary music and the demand of professional students for professional knowledge have exceeded. With rapid development of science and technology, the wide application of multimedia technology can promote more music forms and music culture. The professional piano teaching needs to deepen reform. The traditional solfeggio and ear training teaching mode has the need for appropriate technology updates. Multimedia-assisted teaching has become the indispensable auxiliary teaching way for new century education [6]. Colleges and universities should think deeply about music attainments' cultivation mode and avoid blind worship of the multimedia teaching mode or computer teaching one-sidedly in the use of multimedia-assisted music teaching. Under the present circumstances, colleges and universities should further study how piano education teaching itself may meet the demand of the new knowledge era, and provide broader learning platform for students by breaking through cultural restrictions. This is the real meaning of applying multimedia-assisted instruction in teaching. We should seize the opportunity, broaden our horizons and update the piano education concept.

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