Research on the Application of CAI in Music Education

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Abstract

With the continuous development of social economy and information technology, our country has put forward new requirements for talents. Therefore, it is an urgent issue for the educational field to cultivate comprehensive talents with innovative spirits and high qualities. Music education is an important way to cultivate students’ artistic accomplishment and comprehensive ability, so we should attach great importance to cultivating students’ musical accomplishment and skills. The combination of CAI (Computer-aided Instruction) and music education can help to improve the quality and efficiency of music teaching, and motivate students’ enthusiasm and subjective initiative for learning so as to cultivate students on all sorts of different levels.

Keywords: Computer, Aided Instruction, Music Education, Application Research.

1 RESEARCH REVIEW

1.1 Research background

As the times of knowledge economy is approaching, modern educational concepts and technologies are constantly innovating, developing and breaking through. CAI is widely used in many fields of disciplines, including music education. In normal colleges and universities, music education belongs to the subject of special education, and lags far behind when comparing with other modern educational means and methods. However, the discipline construction in unbalanced development trend makes the contradictions of music major more obvious in education field, and these contradictions will severely affect the development of high-quality education in modern society. In order to solve these contradictions, we must change our concepts first, make full use of modern educational concepts and methods, and accept new changes brought by modern educational theories through the change of concepts.

1.2 Literature review

Networking is an important way for the development of CAI. No computer, no internet. This has become a real situation of computer usage at the present stage. Since computer networking has greatly enhanced the sharing and utilization of computer information, modern teaching has also achieved remarkable results in the field of music education consequently and will continue to promote further reform of education and teaching (Wang, 2014). The application of information technology in teaching not only possesses the most cutting-edge teaching knowledge and resources from early childhood education to higher education, but also make the public discussion between teachers and students possible on computer screens through the information provided by internet. Students, teachers and related researchers can obtain more resources in their teaching and researching, and can share more information through information technology and network platform so as to obtain better services. The global network from all quarters makes it possible to share information resources in real time, and this extremely rapid transmission speed successfully shortens the distance between teaching and learning (Chen and Chen, 2017). In China, students can obtain guidance of teachers from MIT and professors from the University of Oxford through the internet, breaking the limits of time and space.

2. NECESSITIES OF APPLYING CAI IN MUSIC EDUCATION

2.1 Needs of music teaching

With the continuous development of information technology and social economy, new requirements for talents are put forward. Therefore, reforming music education in our country becomes an inevitable trend for its
development. Music education in our country mainly has problems from three aspects: the inconsistent education concepts against modern music education, the outdated educational mode and students’ low enthusiasm for learning (Huang and Zhang, 2016). First of all, in traditional music education, teachers pay more attention to the students’ academic performance and the completion of their own teaching tasks, and pay little attention to students’ actual ability of acting and mastery of music. Second, the present educational mode is excessively outdated, and the teacher-centered way of education fails to learn music together with students. Therefore, students should play the subjective role in learning, and teachers should play the leading role to guide and direct the students. In the end, the boredom of educational concepts and methods lead to students’ low interest and enthusiasm in learning music. Therefore, new educational concepts and methods need to be introduced into music education so as to stimulate student’ enthusiasm for learning (Zhang, 2016).

2.2 The advantages of CAI

At the present stage, the reform and development of our education has dived into the deep end and new technologies are needed to help inject vitality into the reform of education. The application of CAI in education field is very prospective and important, so it is an inevitable trend to introduce CAI into the field of education. Network information technology will also promote the development of education in remote areas and play a very important role. A variety of computer networks at the present stage are also widely established and applied in each subject. Each secondary school has its own local area network or network linked to other schools, which is very convenient for teachers to use. Through using network information technology, even students and teachers from other regions and schools can exchange their teaching ideas or conduct practice across regions and schools (Jin, 2016). Since CAI is a very complex systematic engineering, it is necessary to establish and adhere to strict unified standards in the process of designing and developing, so as to guarantee it is safely and systematically extensive. Then national standards for CAI data coding and norms need to be established, and the developing procedures of teaching application software need to be set up and rules of construction need to be defined, so as to make sure the development and construction of teaching application software system is normative and standard, guarantee the organic composition of the application and promote the development of education (Zhang, 2016).

3. RESEARCH ON THE APPLICATION OF CAI IN MUSIC EDUCATION

3.1 Research aim

Under the background of educational informationization, music teachers should master basic teaching skills. Based on this circumstance, this thesis researches on the application of CAI in the reform and development of music education, deeply analyzes the application of information technology in teaching in this process, digs deeply into the value of the application of CAI in music education, and studies the application of information technology in music education to improve music educating staffs’ ability to apply information technology (Dong et al., 2013). At the same time, it is expected to provide teaching ideas and suggestions for front-line teachers through this research.

3.2 Research methods

This research firstly adopts the literature review method, which means to collect and sort out related materials such as books, periodicals and thesis, and summarize experience and relevant conclusions. The survey method means to know the current situation how information technology is applied in music education at school in the form of questionnaires, know and clear up the application of CAI in the form of questionnaires and interview to find problems existing in music education and solutions (Yao, 2013). The exemplification method is to demonstrate the effective application of CAI in music education through a series of examples of the application of CAI in music education. The action research method is to test the application of CAI in music education so as to confirm the accuracy and efficiency of the research results.

3.3 Research process

After the research theories and methods are confirmed, research can be started. First is to study relevant literature: refer to teaching materials on CAI and music in the provincial library, study them to sufficiently understand their definitions and connotations, and compare them to find the differences between the two. Then is to know the situation how CAI is applied and points for attention in music education from periodical and paper materials (Mi, 2013). Last is to obtain relevant research information about the application of CAI in music education, an in-depth
understanding about this situation and its applying areas.

The questionnaire survey method can help to know the attitude of students and teachers and their opinions for improvement. Prepare questionnaires with questions related to the application of CAI in music education and release them to teachers and students, and the questions should include whether they know about CAI, what the problems are in present music teaching and learning as well as the solutions, whether they agree to apply CAI in music education, if not, whether they have any better solutions. Therefore, the questionnaire survey method can help to know the true feelings of teachers and students and widely absorb their opinions and suggestions so as to support the improvement and innovation of music education (Tian, 2013).

The exemplification method refers to organizing the collected materials and finding out problems of the research object. Through literature review and survey, we can know the problems existing in music education, obtain some information about the application of CAI in music education in China, opinions and points for attention when applying CAI in music education (Chen, 2012).

Last is to verify the conclusions through the action research method. Apply CAI in music education in a high school. First, keep a record of students’ status in class, performance and ability of music before applying CAI in music education so as to compare the items after the research. Then keep a record of students’ status in class and their comprehension of music after applying CAI, and compare the items with the previous ones to find out the results (Cao, 2012). However, it should be noted that it is not persuasive to experiment with only a part of the students. Therefore, more examples should be taken into the research to make the results more reasonable and scientific.

![Schematic Diagram of The Procedures in The Research Process](image)

**Figure 1.** A Schematic Diagram of The Procedures in The Research Process

### 3.4 Research conclusions

Through the research of CAI in music education, we can find that applying this information technology in music education has a great effect on the transformation of teaching methods. First, it can stimulate student’s interest and subjective initiative in music class and help students have a deep understanding of music and its abstraction simultaneously (Fu, 2015). Second, the combination of CAI and music education can contribute to teachers’ vivid teaching and enrich the means and ways of music education. Finally, it is an important means and way to reform and develop China’s education by applying information technology into teaching. Therefore, CAI should be applied to music education to improve its efficiency and quality. The application of CAI in music education can not only broaden the content of music teaching but also enrich the teaching methods and resources; meanwhile, attention should be attached to students’ understanding, feeling and performance of music. When applying information technology to music education, teachers need to focus on two perspectives: one is to analyze students’ thinking level and cognitive ability of music; the other is to know how teachers can help students understand and proficiently use what they learn while teaching music knowledge and whether this teaching mode can stimulate students’ strong interest in learning.

### 4. CONCLUSION

With the continuous development of social economy and information technology, people’s demands for life have shifted from material satisfactions to spiritual needs, and people begin to attach importance to the cultivation of students’ music accomplishment. However, the fact is that our country’s music education starts relatively late, the
concepts and methods of music education lag far behind the developed countries, and our country’s music education is still in ineffective and inefficient state. Therefore, reforming the concepts of music education and teaching methods is an urgent issue to be solved in music education at the present stage (Hou, 2014). The application of CAI in music education can contribute to the change of the mode of music education and the enrichment of its content; help students master the ability of performing vocal and instrumental music, improve their appreciation and recognition ability for music, get familiar with the methods to analyze musical works, and cultivate their ability of music creation and modification. Through CAI, students will be cultivated into music performing talents with comparatively professional knowledge, basic theories and performing ability, and advanced application-oriented music talents with basic teaching knowledge and skills as well as the ability of artistic practice (Liu, 2014). The music majors will develop toward the direction of comprehensive and professional music teachers. By cultivating students’ musical ability and improving their music accomplishment, the education quality and pattern in our country will be enhanced and innovative and comprehensive talents will be provided for the development and construction of our society.

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