Application of Computer Music Technology in College Music Teaching

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Abstract. With the development of economy and science and technology, computer has become an indispensable tool for people to live and work. Entering a new development period, the rapid development of information technology makes the application of computer more and more extensive. Applying computer technology to music teaching in schools has important practical significance for solving the problem that traditional teaching is too theoretical and improving the effect of music teaching. The combination of music teaching and computer music technology in Colleges and universities and the practical application and operation reform of music theory is a qualitative change improvement to the shortcomings of the traditional music teaching mode. At the same time, it can effectively stimulate college students' interest in learning music and improve the teaching quality. This paper discusses how to apply computer music technology to music teaching in Colleges and universities, aiming to further improve students' interest in learning and explore more convenient and effective teaching methods and ways for music classroom teaching.

Keywords: Music Teaching, Colleges and Universities, Computer

1. Introduction

Computer music production technology is a new subject formed by the combination of computer technology and music theory. With the continuous progress and development of computer technology, computer music, as a new generation of art, has gradually taken shape and is widely used in music creation, film and television, education and entertainment [1]. In the field of music education, our traditional education and teaching mode has long been established into a system, but under the impact of the rapid development of computer music technology, it has also been affected to varying degrees [2]. Entering a new development period, the rapid development of information technology makes the field of computer application more and more extensive, and the application of computer technology in

school music teaching has important practical significance for solving the problem that traditional teaching is too theoretical and improving the effect of music teaching [3]. Computers have powerful information processing capabilities, especially in digital information processing, which has incomparable advantages over analog signal processing. In the process of teaching practice, the improvement of the processing ability of music digital interface is realized through note control. Music teaching combined with computer technology has brought great help to our daily classroom teaching, which not only innovates the way of class, but also enriches the resources and content of learning [4]. The subject of computer music has its own particularity in the process of teaching and learning, so the learner is required to have both professional music technology theory, and more complete computer and music recording knowledge [5].

The computer's convenient use, strong operability, and wide range of applications have gradually become one of the main teaching methods for learning modern music teaching. In the past, colleges and universities used traditional teaching methods to teach music courses very inefficiently. It severely stifled the interest and enthusiasm of college students for music courses. Especially for students majoring in music arrangement, it is undoubtedly a kind of creative imagination. Obliterated [6]. The human-computer interaction form of computer music enriches the teaching content, and presents the previously difficult to explain abstract content in a concrete form, and the form of expression becomes vivid and attractive. Thanks to the boring preaching form [7]. With the development and progress of science and technology, computer technology has been widely used in more and more knowledge fields. Computer music technology, which embodies the crystallization of science and art, has caused qualitative changes in music creation, performance, and communication. The integration of computer music technology into the modern music teaching model is very helpful to stimulate students' creativity and enthusiasm for music, and improve students' understanding, memory and judgment of music theory knowledge, sight singing and notation [8]. The article explores the combined application of the multimedia computer music teaching system and university harmony teaching courses, and proves the superiority of computer music technology in the reform of university music teaching mode.

2. Necessity of applying computer music technology in music teaching in colleges and universities

With the development of information technology, computer music production technology has gradually been introduced into teaching. However, due to the limitation of teaching conditions, many teachers still do not break away from the limitations of traditional teaching equipment such as blackboards and musical instruments. In practice, this teaching method lacks concrete guidance, which makes it difficult for students to associate and comprehend different phonograms, thus affecting their learning interest and knowledge acceptance. From the analysis of the current situation of music theory teaching in colleges and universities, there is a close relationship between computer music production technology and music teaching, and they are interdependent [9]. In college music teaching, the proportion of music theory knowledge has increased. By introducing computer music production technology, students' enthusiasm for participating in learning can be aroused, students can experience the charm of music in intuitive and vivid cases, enrich the content of music knowledge, broaden the scope of music curriculum knowledge, and let students master music theory knowledge in a more expressive teaching environment.

Computer music production technology, as a new teaching method, can improve the teaching efficiency of music theory courses, instrumental music singing courses and computer practical application courses when applied to traditional music teaching. The most important significance of computer music lies in highlighting the function of computer-assisted instruction and guiding students to master the method of music creation by using modern production technology, so as to achieve the optimization of teaching and learning. In the existing music teaching, students want to master computer music production technology, first of all, they need to have certain music theory knowledge to create and produce music [10]. Traditional music teaching contains the theoretical and technical skills of music majors, which are diverse and complex, and only through long-term study and research will certain achievements be made. At the early stage of the development of computer music, the price of many hardware devices was very expensive, which discouraged ordinary people. Nowadays, the price of computers is declining and the performance is improving, and more updated and powerful music software is being introduced.

In music teaching, the application of computer music production technology can obviously improve the teaching effect. When computer information technology is not applied in the theoretical teaching of music majors, the traditional teaching modes and methods such as blackboard writing only present professional teaching knowledge and music scores, which can't make students really feel specific sound effects. Computer music production no longer needs the traditional professional equipment piled up in mountains. For ordinary users, a computer plus some software plus some basic multimedia equipment is enough. For the establishment of computer music production classroom in colleges and universities, the capital investment required does not exceed its affordability. The use of computer music production technology in music teaching in colleges and universities can enrich and improve the shortcomings and defects in traditional music teaching, which not only stimulates students' enthusiasm for learning, but also effectively improves the teaching quality.

3. Application strategy of computer music technology in College Music Teaching

3.1. Application in harmony teaching

In the process of learning harmony music knowledge, students can only master the effect of harmony by rote. Therefore, the application of computer music production technology in harmony music teaching can transform the knowledge composition, principles and definitions that are difficult to understand in teaching into audible effects that can be touched and felt. At the same time, it can also arouse students' enthusiasm and interest in music learning, so as to improve the quality of harmony teaching and achieve the desired results. Teachers can apply computer technology to the teaching of harmony course in college music teaching, and make good use of online scoring software to make the materials needed for harmony course. Put the produced music score on the screen through the projector, and play it through audio and other equipment. This can not only solve the problem that the display of music score and audio-visual can not be completely synchronized, but also make the timbre of different instruments be combined and used, so that the teaching content is richer and closer to the practical effect [11]. In music theory teaching, how to apply computer music production technology to harmony teaching is the realistic need of the course. Because, computer music production technology can give full play to the advantages of computer technology, enhance the vividness of harmony

teaching in music theory course, and then make up for and improve the deficiencies in traditional music theory course teaching.

On the whole, the relationship between the three dimensions of the teaching process and the relationship between the three dimensions and the learning effect is assumed to be consistent with the observed data. Fig. 1 is a path analysis model of building dimensions of music effective classroom environment and learning effect.

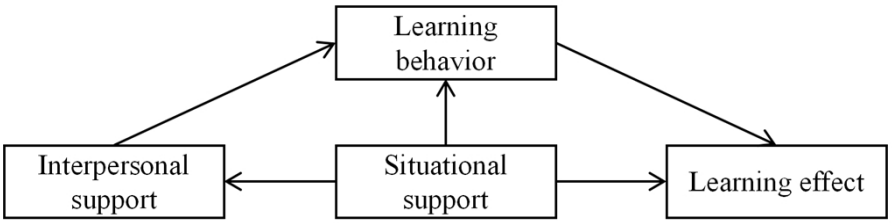

Figure 1. Path analysis model

Harmony music teaching in colleges and universities is divided into two courses in the traditional mode, namely, tonic harmony and polyphonic harmony. In the traditional teaching mode, both of them have some drawbacks, and using multimedia computer music teaching system to teach can play a certain role in improving. Multimedia courseware is prepared by teachers before class, showing the key points and difficulties involved in theoretical courses, which can directly reach the teaching purpose and optimize the classroom structure. It is the most basic form of multimedia computer music teaching system in harmony teaching. In the daily teaching process, it is difficult to learn quartered harmony. Because this is limited by the teacher's piano level and the range control of the four parts of harmony, it makes it difficult for teachers to show the four parts to each student exactly, and students can only remember the effects of these parts by memory, but can't really feel the actual range effect. Teachers can use multimedia audio and video to play every spectrum example they compress and edit. This multimedia teaching method can make students pay more attention to listening than traditional methods [12]. If teachers can master computer technology and use it in music teaching. In class, teachers only need to click the software lightly, and students can see the music score and hear the music effect. And teachers can play a piece of music repeatedly according to the actual learning effect of students until the learning effect is achieved.

3.2. Applied to musical instrument score teaching

Students' relationship between learning theory and auditory vision is not well established, so it is difficult for students to learn and understand music score. The introduction of computer music teaching system can reduce the difficulty of teaching, create a relaxed and pleasant learning environment, and provide a brand-new teaching mode. In this teaching mode, students' interest and enthusiasm in learning are stimulated. In the whole process of using the new type of teaching, applying the advantages of computer technology properly can bring new experiences to students' learning. Professional teaching activities through professional software is the most common teaching form adopted by various disciplines in the current computer age, that is, the contents of each teaching unit are edited into courseware through teaching software. In the aspect of imparting knowledge points, it changed the linear chain mode of the traditional teaching mode and expanded into a net link

structure. This structure is close to the structural characteristics of information link in human brain, which is more conducive to students' knowledge system construction and improving learning efficiency.

In the teaching of musical instrument score, teachers use computer music production technology to input a piece of music and process it, so that students can learn to listen, appreciate and analyze music, and master the method of composing music. No matter whether the notes go down or up, as long as a series of notes with the same direction appear continuously, an upward or downward melody line can be generated, which means that the evaluation value is higher. The assignment of melody weights is shown in Table 1. The relationship between melody weight and melody trend is shown in Figure 2.

Table 1. Melody weight data

Same trend degree of melody	Melody weight
8	0.95
10	0.85
12	0.75
14	0.65
16	0.55
Greater than 16	0.45

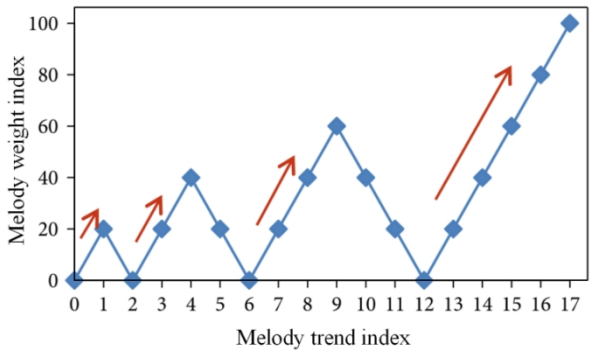

Figure 2. Relationship between melody weight and melody trend

In traditional music teaching, teachers are affected and limited by teaching equipment, so students can only feel some sound effects in music works, and it is difficult to feel music comprehensively and concretely. The study of musical instruments has always been a very important content in music class. Because of the great limitations and too many constraints in learning musical instruments in music teaching class, students' understanding of musical instruments can only be learned by the knowledge of words and pictures in books. If computer technology is integrated into the classroom of musical instrument teaching, teachers can show students various musical instruments from ancient times to the

present by using various multimedia technologies, and show students the sound, music and video of each musical instrument, so that students can experience the use of each musical instrument practically and bring direct teaching effect to students.

3.3. Applied to solfeggio class

In the teaching of basic theory of music, solfeggio is a comprehensive course for teaching and training students' intonation and rhythm. At present, most colleges and universities still use traditional teaching methods in listening to students' music lessons, and only use teachers to play piano music for teaching. Such a single way may make students feel that learning in class is monotonous, and they must rely on teachers to complete it. If teachers make mistakes in performance, students will also be affected. In the training of students, teachers can apply computer music production technology according to the needs of courses, and write melodies and rhythms with different difficulties, speeds and lengths [13]. The task of computer music creation is not just to hand over a few pages of score paper like traditional music creation, but to complete the final music sound. The application of computer music production technology is convenient for teachers to compile teaching content, reduce work difficulty, improve students' ear practice level, improve teaching efficiency, and effectively improve the shortcomings in traditional music theory teaching.

4. Conclusion

With its infinite ability to change, expand and combine, computer music has brought new essentials and ways of thinking to traditional composition teaching and music creation, and opened up a brand-new way for learners to actively and creatively create music. Adding computer technology to music teaching in colleges and universities can not only change the disadvantages of traditional music teaching, but also show students the infinite charm of music and stimulate students' interest in learning music. In traditional music teaching, teachers are constrained by teaching conditions, which makes the teaching content too single and rigid. With the help of music production software, teachers not only enrich the teaching content, but also make the abstract music theory become real, emotional and lively. In the field of music teaching, computer music technology shows its powerful processing ability and display ability, and the process of applying it to music education must be accelerated. Computer music technology can not only improve students' music skills, but also cultivate students' music quality, at the same time help them to shape sound music character and acquire valuable creative thinking in the field of music education. However, no matter how advanced and innovative the technology is, its essence lies in deepening the concept of music teaching in colleges and universities, improving teaching efficiency and students' initiative and creativity in music learning.

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