Application of Computer Music Production Technology and Computer Multimedia System in College Sight-singing and Ear Training

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Abstract. Although sight singing and ear training have been widely used in teaching, there are still many problems in the actual implementation process and only by solving these problems can teachers’ teaching goals be better achieved and music teaching in education can be achieved. Better results. In the process of practice, teachers need to use computer technology to teach students according to their aptitude, pay attention to the dominant position of students, actively create a good learning environment for students, enhance students' self-awareness in learning and make vocal training and ear training in education majors. It has been continuously developed, so that the trained talents can better adapt to the needs of social development.

Keywords: Computer Technology, Music Production, Sight Singing and Ear Training

1. Introduction

In order to continue to improve the teaching model of sight singing and ear training and to significantly improve the quality and efficiency of classroom teaching, it is necessary to pay attention to the application of information technology in teaching, which will have a positive impact on classroom teaching. With the continuous development of science and technology and the implementation of curriculum reform, the important role of multimedia in teaching has become increasingly prominent. Therefore, in actual teaching, multimedia can be used in sight-reading and ear training, videos of different musical instruments can be brought into the classroom and music theory can be compared. The boring content is displayed in a vivid way, creating a good teaching situation for the students and then making the students feel immersive. In actual learning, the students can clearly distinguish the different scales. The use of this method has brought convenience to both teacher teaching and student learning, teacher preparation time has been greatly shortened and the learning speed of students has also been significantly improved, effectively improving the actual teaching
effect in the classroom. When using multimedia, it is necessary to pay attention to the correct use of multimedia to make it maximize its role, rather than make the teaching flow form, understand the multimedia usage guidelines and closely combine the use of multimedia with the actual teaching situation and in When using multimedia to find the materials needed for the teaching content, it is necessary to be targeted and not to rely too much on multimedia, so that the actual classroom teaching effect can be significantly improved.

2. **Computer music production technology**

2.1. **Audio editing module**

Audio editing is based on the existing audio materials. According to the actual needs, the operation of editing and splicing into a new music is performed. Because no composition technology is involved, zero-based students can master this skill. Therefore, this The module is also the most basic and simple to operate and can be used as the introductory content of the "Computer Music" course. Supplementing multimedia soundtracks as practical examples in teaching allows students to dub a video or game through audio clips. This not only eliminates the tediousness of students' learning software operations, but also further enhances students' interest in learning. The computer audio editor is shown below (Figure 1).

![Figure 1. Computer audio editor](image)

2.2. **Audio processing module**

After learning simple audio editing, you can enter the audio processing teaching module. Although it also does not involve composition technology\(^1\), the operation of audio processing technology is obviously difficult to edit. These audio processing technologies include audio speed synchronization, audio stretching and bending processing, audio Slicing, pitch processing, etc. Taking DJ Remix as an example, students can exercise their ability to unify the speed of binding music materials to the total speed of the project, so that students can master the technique of remixing a tender song with rhythm into slow-shaking style music. The computer audio processing is shown below (Figure 2).

![](image)
2.3. Recording module

The teaching of the recording module can be independent, or can be edited and processed by audio as the previous content. It mainly teaches students how to choose a good recording environment, correctly master various recording methods and post-recording processing, etc., compared with the first two. The teaching module and the recording module are comprehensive, including the operations of audio editing and audio processing[2]. In this module, cover is used as an example and a student’s actual recording is used to cover a certain popular song. The preparations before recording and the various processing such as rhythm and pitch adjustment after recording are demonstrated in detail. The magic of recording technology can also obtain the satisfaction of self-singing.

3. Application of computer multimedia system technology in music

After we have determined the timbre, if the preset timbre does not meet the performance requirements, we can use some computer technology to modulate it. The first step is to envelop the sound. The envelope of timbre is the process of attack, sustain, decay, sustain and release. First of all, it is necessary to adjust according to the hardness of the sound head. By adjusting the parameters of other processes, the point where the sound occurs can be changed. The concept of sound field is the environment in which sound exists[3]. In the real world, sound exists in each specific natural environment. In the early recording scene, people recorded and saved the live sound. But the sound of the scene exists in many murmurs, which are too real. With the development of science and technology, people began to use virtual field modulation; with the development of recording technology, people can create beautiful sounds that cannot be achieved by traditional methods through modulation. The pan modulation of computer music can ignore the live pan. But to achieve the unity of the sound field. Because in the current system, there is no sound image preset or only a small amount of pan. Therefore, in actual creation, the modulation of pan and sound is very important. In actual operation, the pan position of different tone samples will also be different. Therefore, it is reasonable to unify the timbre and phase of the sound source, which can make the virtual sound field of the timbre more humanized. The superiority of computer timbre can be achieved by traditional
methods without panning effect. In life, if we expect a sound to appear, then it will urge us to listen in hearing. Based on this habitual characteristic, people make panning modulation more humane. Therefore, when a timbre becomes the lead voice during performance, its phase should also be transferred to the middle.

4. Analysis of the application of sight-seeking and ear-training in universities

To enrich the teaching aids of sight singing and ear training, teachers should use information media resources scientifically, organize students to participate in community organizations and carry out various forms of learning and training activities to form a new motivation for sight singing and ear training.

4.1. Information means

The extensive use of information means has provided more support for the teaching of sight-singing and ear training[^4]. The smartphone application of students has reached 100% and the network information has also been fully covered. Teachers design and use flipped classroom teaching for students, which can fully activate students' information application consciousness and use computer technology to allow students to carry out music visual singing training and learning and training anytime and anywhere, which is not only possible but also feasible. The mature teaching methods of micro-teaching and flipping classrooms provide students with a wealth of learning opportunities, which is an important help to improve the quality of visual singing and ear learning. Cultivating students' sharp music judgment is an important goal of sight-singing and ear training. Teachers should not only use multiple teaching methods to mark the students' pitch and interval, but also provide more training opportunities for students by means of various information methods. For example, in the song "The Sea, Hometown", the teacher first sings for the students, using computer technology to gradually familiarize the students with the melody of the song and requires the students to use the network information search platform to collect different versions of the song and to compare the sight singing training, experience Its unique personality. Students have a strong ability to use the network information platform and soon they will find a lot of learning materials. Through audio-visual and singing, they will gradually master the characteristics of the song melody and form a new learning cognition. The teacher assigns an information collection task to the students to mobilize the students' learning initiative.

4.2. Deduction training

Students' singing and ear training requires a gradual process. Teachers need to be innovative, arrange deductive activities for students and use computer technology to enable students to shape their singing and singing skills in deductive operations[^5]. Class performances, publicity performances, evening performances and recorded singing and singing are all deduction training opportunities. Teachers should provide students with more public singing and singing opportunities and use computer technology to enable students to improve the overall quality of music in continuous practice. The enthusiasm of students to participate in the interpretation is very high, which has an important role in promoting students' ability to sing. Like "Jasmine", this is a folk song. Teachers arrange deductive tasks for students when they learn to sing: first listen carefully to multimedia audio materials, figure out the characteristics of the song, start the sing-song training and start class singing activities in
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5. Conclusion

At the same time, in order to enhance the students' sight-singing initiative, teachers arranged simulated internship scenes for students, some students played children and students took turns in sight-singing activities. Teachers, as judges, always give evaluation and guidance to students' performance of sight-singing. Because it is a simulated internship scenario, it puts a certain pressure on students and this training effect is more prominent.

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