Research on the Application of Computer Music Software in Piano Rhythm Teaching

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Abstract. Computer music software plays a more and more important auxiliary function in the teaching process, and has been more and more widely used. However, the current computer software still has a large space for optimization. Based on this, this paper first analyses the difficulties of piano rhythm teaching, then studies the common computer software and hardware and its utilization process in piano rhythm teaching, and finally gives the utilization process of computer music software in piano rhythm teaching.

Keywords: Computer Music Software, Piano Rhythm Teaching, Application

1. Introduction

With the iterative progress and maturity of computer tech, it has been widely and deeply studied in many fields, especially in the field of music. For example, the music software developed based on computer has achieved outstanding utilization results in the teaching of musical instruments. At present, the information tech and digital tech represented by computer music software has been deeply popularized in the music art field as shown in Figure 1. With the gradual introduction of piano art into public life, more and more people begin to study in the field of piano. This creates new development and utilization opportunities for the utilization of computer music software in the field of piano rhythm.

Figure 1. Utilization fields of computer music software.

At present, the utilization of computer music software in piano assisted teaching has gradually risen, including Piano rhythm teaching involving computer software tech and Piano theory teaching based on...
computer multimedia tech [1]. At present, the utilization of computer tech in piano teaching mainly focuses on the diversification of teaching forms and teaching means. In order to further strengthen the cultivation and training of piano rhythm learners' learning interest; it is necessary to further enhance the functionality and interest of computer music software, so as to further improve the overall level of piano rhythm teaching.

At present, the functionality and friendly interface of computer music software have been greatly improved. The humanized interface management mode of music software has become an important support for improving piano rhythm teaching, and plays an increasingly important auxiliary function in the teaching process [2]. However, the current computer software still has a large space for optimization; especially the ability of information interaction and data analysis of computer music software system needs to be further improved.

The organic combination of computer music piano teaching software tech and music tech can not only enrich piano rhythm teaching in content and form, but also optimize the learning process of piano beginners. In addition, using the electronic monitoring function of computer hardware, multimedia tech can be integrated into the network system, so as to realize the comprehensive and integrated piano rhythm teaching. The use of computer software platform can further break through the piano rhythm teaching space-time constraints, so that piano rhythm teaching is no longer limited to a specific space-time environment. Therefore, the research of piano rhythm teaching based on computer music software has important time value.

2. Difficulties and emphases of piano rhythm teaching

2.1. Differences and individualized characteristics of learners

The piano rhythm performance pays attention to the perfect unity of generality and individuality, so as to show the performance skills and emotional expression. In the teaching of piano rhythm, players are required to have a harmonious and unified interpretation of rhythm, and highlight their own personality and unique music processing and expression [3]. Due to the piano learners will have a personalized understanding of the existence of music in the process of learning piano, so how to effectively deal with the differences in piano rhythm teaching has become a problem that must be seriously faced and dealt with in the process of piano rhythm teaching. This requires that in the piano rhythm teaching must seriously face the differences of students, carry out targeted individualized teaching, so that learners can obtain effective promotion.

2.2. Key points of piano rhythm teaching

The difficulty and emphasis of piano rhythm training are mainly reflected in the training of learners' rhythm, strength and timbre. Among them, in the aspect of rhythm training, regular rhythm is the premise of piano performance. For beginners, the difficulty of teaching lies in teaching the rhythm and rhythm characteristics of piano works, especially for rhythmic works with style, it is necessary to strengthen the training of students. Secondly, at the level of intensity training, the performance strength of piano players needs to be adjusted according to the emotional changes of music works, which makes the performance of works more hierarchical. Piano music is rich in emotional expression, so it is necessary to integrate strength with music rhythm, breath and music language to achieve precise control of strength, so as to play piano music with rhythm beauty.

In addition, in the timbre level of piano rhythm training, in order to enable beginners to perform more hierarchical and rhythmic piano works, it is necessary to strengthen the training of piano timbre edge and color level. The training of piano timbre is mainly based on the changes in several aspects as shown in Figure 2 below, so as to achieve different voice parts for different timbre, so as to optimize the performance effect.
Melody
Harmony
Vocal part
Tonality

Figure 2. The important basis of piano timbre training.

3. Common computer software and hardware and their utilization in piano rhythm teaching

3.1. Advantages of computer music software and hardware system in piano rhythm teaching
The powerful software and hardware of the system can improve the quality of piano teaching. In particular, the utilization of diversified computer music software can change the imitation teaching in the traditional manual teaching process; realize the synchronization of audio-visual in the teaching process, and the comprehensive perception of phonemes [4]. Among them, music software can solve the technical problems of beginners, cultivate beginners’ deep understanding of the emotion of works, strengthen the training of rhythm sense, and give full play to the advantages of computer music software.

3.2. Common computer software and hardware and their utilization in piano rhythm teaching
The software and hardware platform system of piano rhythm teaching mainly consists of integrated control hardware system, utilization and teaching implementation of related software and hardware of piano rhythm training teaching system, auxiliary teaching of digital piano with its own functions, other auxiliary functions of digital piano and computer system, as well as teaching video and audio-visual system. Among them, in the level of integrated control hardware system, the computer hardware system is mainly used to effectively record and monitor the rhythm of beginners in the process of learning piano rhythm, so as to realize the effective and accurate calibration of beginners' training and performance.

Secondly, in the piano rhythm training teaching system related software and hardware utilization and teaching implementation level, mainly with the help of the system to achieve the organic assistance of rhythm teaching process [5]. For example, through the computer music production software will piano demonstration music into the computer system, and production of audio track. Through the demonstration and explanation of the teacher, the process of rhythm teaching is taught step by step. Especially for the difficulties in the performance process, it is helpful for students to carry out repeated training and strengthen their perceptual cognition and rational understanding. The introduction of the music software can effectively improve students' cognition and understanding of the style and rhythm of new piano works, and help to improve the interactivity in the teaching process and the play of students' dominant position.

In addition, some of the current piano teaching auxiliary functions, through the internal implantation of certain teaching software and hardware, to achieve a variety of ensemble and multi instrument automatic accompaniment function, some computer digital piano built-in music software also has the ability to make order, can temporarily record students' playing practice, convenient for teachers to analyze and process the training process of students, so as to carry out individualized teaching, further improve the efficiency of teaching. The introduction of teaching video and teaching digital system can play a similar effect and function. Through the organic training auxiliary system
composed of these components and computer system, it can effectively grasp the weakness and deficiency of students in the learning process, and realize the correct rhythm performance.

4. Utilization of computer music software in piano rhythm teaching

4.1. Piano training rhythm control based on computer music software

The utilization of computer music software in piano rhythm control training mainly includes two aspects: music score analysis and piano rhythm design. Among them, in the level of music score analysis, the use of computer software to achieve the piano music works in the form of melody rhythm processing ah. Secondly, computer software can accurately record the details of every rhythm in music works, such as rhythm, pause, breath and beat [6]. In this context, beginners can more easily grasp the typical characteristics of the rhythm of music works, rhythm, so that beginners for the understanding of the rhythm of the work more accurate, which helps to show the music rhythm in a more three-dimensional, intuitive effect and form.

In addition, in the piano rhythm design level, mainly with the help of computer music software to effectively edit the piano shutter window, so as to further enhance the rhythm of piano notes, help beginners more accurate grasp of rhythm remake. Due to the concealment of rhythm in paper music score, it is necessary to realize the organic design of rhythm and rhythm of diversified works with the help of computer sequence software, so that beginners can better grasp the evolution process and laws of rhythm of works, so as to perform correctly.

4.2. Visual analysis of piano performance by sequence software

With the help of computer software and hardware system, the effective analysis of piano playing process and the realization of visual and quantifiable visual piano rhythm training analysis and teaching are realized. In the teaching process, the students' performance process is recorded by using the tone sequence equipment. After the completion, the piano volume of the software is applied to realize the playback of the students' performance record. Through the software, students' performance can be visually displayed and quantified. In this process, students and teachers can intuitively grasp the position of the beat dislocation and rhythm dislocation in the performance process.

In the specific piano practice teaching process, some students are always difficult to effectively control the melody and accompaniment strength of the piano. With the help of computer music software, it can record and modify the strength of the notes played by beginners, so that students can intuitively feel the rhythm changes before and after editing, so as to help students better understand and improve.

4.3. Tapping the potential of computer music software

In the practice of piano rhythm teaching, the potential of applying computer piano teaching software focuses on promoting students' autonomous learning, establishing demonstration music library, and promoting students' independent and open piano learning. Secondly, a variety of computer music software can further assist the piano rhythm teaching mode and broaden students' music vision. In addition, at the level of computer human-computer interactive piano performance auxiliary evaluation, the iterative progress of computer audio recognition tech has already possessed the ability to accurately identify pitch, rhythm, rhythm and other elements, as shown in Figure 3 below. In a word, using computer music software to simulate the process of human cognitive analysis of music and analyze the process of music performance can effectively assist the teaching process of piano rhythm training.
5. Conclusion
In summary, the humanized interface management of music software has become an important support to improve the piano rhythm teaching, and plays an increasingly important auxiliary function in the teaching process. Through the analysis of the difficulties in piano rhythm teaching, this paper studies the key points and difficulties of piano rhythm teaching. Through the research of common computer software and hardware and its utilization in piano rhythm teaching, this paper analyzes the advantages of computer music software and hardware system in piano rhythm teaching. Based on the analysis of the utilization of computer music software in piano rhythm teaching, this paper studies the piano training rhythm control of computer music software and the visual piano performance analysis of music sequence software.

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