Research on the Application of Computer Music Making Technology in New Media Environment

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Abstract: The rapid development of science and technology makes the use of new media technology more and more common. In the 21st century, the communication mode of new media is becoming more and more diversified, and its convenient and efficient communication mode can meet the needs of people's modern office and life. Digital audio has a variety of production technology, and the production accuracy and controllability are very high, so it occupies the main position in the information composition of new media. As a sensory media, sound is mainly manifested in voice and music in daily life. At the same time, computer music production technology mainly includes digital processing technology and MIDI production technology. It can be seen that computer music production technology has become the core technology of sound editing, production and processing under the background of new media.

This paper takes the application of computer music production technology as the research object, analyzes the internal relationship between new media and music production technology, the application and development of music production technology and so on, so as to provide the development direction for computer music production technology.

1. Introduction

Under the background of digital technology, computer music production technology can complete the rapid dissemination of all kinds of sound content. It can be seen that digitization not only brings about the reform of new media, but also accelerates the development of computer music production technology. Because the demand of the new media for the sensory media of sound is very high and the requirements are also increasing, it can be seen that the new media and music production technology itself should be related and promote each other. With the rapid development of information technology, only by combining new media and computer music production technology to realize the complementary advantages between the two, can the two sides achieve better development prospects.

2. Connotation of New Media and Computer Music Production Technology

2.1. New Media Concept

The new media is put forward on the basis of the concept of the old media. It is based on the old media by adding new forms and contents, constantly improving and innovating, and finally deriving new media forms. In addition to traditional radio, newspapers, television and outdoor media, other forms of media can be called new media. But with the development of science and information technology, new media will gradually become old media, so the connotation of new media is not unchanged[1].

New media has an obvious feature, that is, there is no news center. Everyone can become the producer and communicator of news. In the process of news dissemination, the receiver can be both
the communicator and the receiver, so the interaction of news is very strong. Individuals can answer any questions in new media communication, but also choose different media expressions according to their own interests and needs. Because the communication mode of new media is becoming smaller and more efficient, the communication range and efficiency of new media in some aspects are far more than that of traditional media. For example, in the field of music, the cycle of traditional tape replication is longer and the cost is higher. After the digital audio is copied, it can be transmitted by CD, flash disk and so on. No matter how many copies will not affect the quality of audio and the cost is low.

2.2. Concept of computer music production technology
Traditional music production is mainly done by analog signals, while computer music production uses a large number of digital technology and processing means to make the production and expression of music more rich and diversified. In real life, most of the audio information that people come into contact with is processed by computer, which includes music, sound effect and explanation material. From a professional point of view, computer music production technology includes MIDI production and digital audio processing.

- MIDI production technology: it refers to an interface for digital processing of musical instruments, which is essentially a standard or protocol and does not exist in physical form. The early MIDI production system is divided into input device and output device, in which the input device is responsible for transmitting the MIDI signal to the processing device, and when the MIDI signal processing is completed, it will be transmitted to the output device. The sound corresponding to the information is found and triggered by the output device. With the development of MIDI technology and the effective integration of computer, MIDI production technology has greatly improved in efficiency and function[2].

- Digital audio processing technology: as a new sound processing technology, digital audio can achieve sound recording, editing, storage, playback and compression and other functions. Because the computer uses binary method to process the information, the digital audio also needs to digitize the information first, so that it can be transformed into binary data for computer recognition. For example, digital recording, digital audio will first use hardware devices such as sound cards to convert the sound picked up by the microphone into computer identifiable binary code, and then the computer will edit, store and other forms of processing.

2.3. The Relationship between New Media and Computer Music Making Technology
In modern life, people have been inseparable from the influence and infection of music, and new media play an important role in the dissemination of music information. As mentioned earlier, new media not only spread music information, but also have certain requirements for the quality of music. First of all, the audio information in the new media communication must be digitized, because only the digitized information can be transmitted in the network and satellite. Secondly, the quality of audio communication in the new media environment should be much higher than that of tradition, but the smaller the amount of information, the better. In order to solve the above problems, computer music production technology came into being. The music under this technology exists in the form of digital audio and can be transmitted through CD, hard disk, flash disk and so on. Different from the traditional tape, the music information after digital audio processing can be called at any time, without demagnetization and weakening due to the passage of time. In addition, because digital audio uses binary code, audio files have good compatibility with computers, no matter which computer can play smoothly. Thus, computer music production technology is essential in the processing and dissemination of new media music information. On the contrary, most of the audio information processed by computer music technology is also spread through new media, such as network red songs, color bells and so on. The existence of digital music in the new media environment mainly includes the following five forms:
Table 1. The Existence of Digital Music in New Media Environment.

| Form          | Characteristic                              |
|---------------|---------------------------------------------|
| CD Form       | Good audio quality and effect; Large amount of data, not easy to spread and copy. |
| MID and RMI Form | The amount of information occupied is less; Easy to edit and modify |
| WAV Form      | High compatibility, easy compression Low storage |
| MP3 Form      | High sound quality, small storage space      |
| ASF and WMA Form | High fidelity, suitable for network transmission |

3. Application and Development of Computer Music Making Technology

3.1. Application of MIDI Production Technology

MIDI technology has been developed for about 30 years. During this period, its digital working mode has been effectively consolidated and innovated, which makes the music more suitable for new media communication[3].

- MIDI technology can be used to edit and play music: During the process of music production, the creator can input music information by using MIDI keyboard and percussion pad, which not only ensures the high simulation degree of music, but also does not affect the overall feeling of the audience to music. Such as the performance of small military drums, the traditional way of playing makes the length and strength of each percussion note are inconsistent, and the performance of the MIDI strike pad will convert the length, strength and rhythm of the playing notes into MIDI signals, which can be processed by the software in the audio workstation. The final performance effect can be as. The audience can not only experience more happy music, but also visit back at any time to taste the feelings of the creators in the music. Besides the small army drum, the MIDI percussion pad can also play the timbre of any other percussion instrument, which can not be realized by traditional music.

- MIDI technology to assist music creation: MIDI technology has great auxiliary advantages in music creation. With the development of MIDI simulation technology, users can call virtual instruments in the software of MIDI workstations. Unlike traditional hardware instruments, virtual instruments have low cost, good simulation effect and simple application. Since virtual instruments do not maintain a high degree of simulation for all timbre, samplers are particularly important. As an operating platform, the sampler can collect and process the real audio information, and then the MIDI signal can send out the corresponding information by triggering the information. Meanwhile, creators can choose MIDI timbre according to their own preferences, so that they can be MIDI edited into music. As soon as the creator has mastered the operation technology of the computer, the above MIDI production can be completed independently, which is much simpler than the traditional writing spectrum, melody creation and later recording. But this does not mean that MIDI creation is simply inputting the notes into the workstation software, which also makes the music without personality and soul, and the audience sounds very mechanical and stiff. MIDI controller and effector can deal with this problem well. MIDI controller can comprehensively adjust the main parameters such as volume, breath, sound image, timbre and so on, so that the music expression is more in line with people's aesthetic and auditory habits. After the above processing of music with a beautiful sound source, you can make out the music[4].

3.2. Application of Digital Audio Technology

Whether traditional media or new media, digital audio technology plays an important role in the processing of audio information. For example, traditional radio programs have adopted a large number
of digital audio processing techniques in the recording of anchor voice and the broadcast of programs. With the popularization of this technology, people also feel the technical advantage of digital audio in their daily life. Such as the QQ chat platform, whose audio calls use D/A and A/D technology, people's voices are transmitted to the computer through pickups, which are processed into computer recognizable binary code. The code is then converted into analog signals to complete the sound propagation.

- Binary code: the computer expresses audio information as binary numbers in the form of digital conversion. Unlike decimal numbers, binary numbers have a lower error rate.
- Signal processing: during the processing of analog signals, when the input level of individual signals is less than the lowest value of the system, the number will be distorted. In order to avoid the above situation, digital audio will load low level noise in the process of signal input, that is, jitter processing.

In order to ensure the broadcast effect of the program, the singer will record the music program in advance, and then sing silently through listening to the headphones. This is due to the digital audio processing of music in the quality of a more perfect display, some recording or live singing defects can be modified by this technology. For example, the singer's voice modification, some singers because the sound and singing level is not so high, so in the live singing is easy to be affected by the physical condition, the scene environment and other factors in the breath, sound and other aspects of defects or defects, while digital audio technology can avoid the above situation[5].

In addition, with the development of mobile communication technology, mobile phone has been transformed from traditional communication tools to information dissemination tools, which plays an indispensable role in people's lives. In real life, mobile phone broadcasting, newspapers, television and various dating platforms have become the main channels for people to obtain information[6]. APP some sound games in mobile phones are to use digital audio technology to digitize the collected audio, and finally realize a series of functions such as sound simulation, editing, copying and so on.

### 3.3. Development of Computer Music Production Technology

With the development of computer and digital technology, computer music production has been popularized and applied in more and more fields. From traditional synthesis to today's sampling, more and more real sounds are collected and applied to MIDI music production. Through continuous research and development and technological innovation, the creators make the music made by computer have high advantages in simulation and quality. With the listing of i7 processors and windows7 systems, computers have implemented 64-bit system upgrades, and their memory has shown an exponential growth trend. The upgrade of computer processing and computing ability also makes computer music production show several times or even dozens of times in the number of sound source sampling[7].

### 4. Conclusion

Computer music production technology makes the expression of music more diversified, and its modern elements also make the music content more abundant. Under the background of new media, computer music production technology can not only produce satisfactory music, but also meet the needs of new media products, that is, digital music. It can be seen that new media and computer music production should complement each other, and creators should skillfully use the relationship between them to further promote the cooperation between new media and computer music production technology, so as to create more and better music works.

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