The Transformation of Education Paradigm from the Perspective of Music Teachers: The Impact and Application of ICT

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Abstract: With the continuous development of information technology, music education is also undergoing profound changes. ICT is widely used in music education, including music creation and production, music teaching and music performance. The application of ICT can improve the quality and effect of teaching, enrich teaching means and methods, and promote students' autonomous learning and cooperative learning. However, it also faces some challenges and problems, such as the input and use of technical equipment, the training and improvement of teachers' information literacy. In the future, music education will pay more attention to students' independent learning and cooperative learning, and pay more attention to the deep integration of information technology and music education. In order to better promote the innovation and development of music education, it is necessary to strengthen the investment and use of technical equipment, improve the cultivation and improvement of teachers' information literacy, and pay attention to the problems and countermeasures of students in the process of using information technology.

1. The importance of music education

Music education plays an important role in personal and social development. It can not only improve students' musical literacy and skills, but also cultivate students' aesthetic ability, emotional expression and creativity. In addition, music education also helps students develop social skills such as teamwork and self-confidence. In today's society, music has become an important bridge for cultural exchange and cross-cultural understanding, so music education also has the value of cultural inheritance and international exchange.

1.1. Background of educational paradigm transformation

The background of education paradigm transformation is mainly due to the rapid development of society and technology. With the popularization of information technology, people's learning and teaching methods are constantly changing. The traditional education model has been unable to meet

the needs of modern society, so it is necessary to transform the education paradigm. In addition, the prominence of social contradictions and the enhancement of the government's ability to absorb financial resources also provide important support and promotion for the transformation of education paradigm. At the same time, the outbreak of COVID-19 has accelerated the process of digitization of education, forcing countries to accelerate digital transformation and improve the resilience of education systems[1]. In short, the transformation of education paradigm is an inevitable trend of The Times and an important way to adapt to the digital age and improve the quality of education.

1.2. The meaning of ICT education

ICT education, or Information and Communication Technology education, is a form of education using modern information and communication technologies. It is a multimedia educational means for teaching and learning through mobile phones, tablets, computers and other devices. In ICT education, information and communication technology is not only used as a tool and means, but also as an educational content and learning method to help students get in touch with the latest communication technology earlier, improve learning efficiency, and increase learning interest and interaction[2]. At the same time, ICT education can also manage the learning progress more scientifically and optimize the teaching effect. Therefore, the application and promotion of ICT education in the field of education is of great significance for improving the quality and efficiency of education and cultivating students' innovative ability and information literacy.

1.3. The role and influence of ICT in education

The role and influence of ICT in education are increasingly significant. First of all, ICT provides rich teaching resources and tools for education, such as online courses, virtual laboratories, interactive teaching software, etc., making learning more convenient and efficient. Secondly, ICT helps to cultivate students' self-directed and cooperative learning ability. Through online learning and collaborative projects, students can actively explore knowledge and improve their problem-solving ability[3]. In addition, ICT can promote equity in education, so that students in more areas and schools can enjoy quality education resources. However, the widespread use of ICT in education has also brought some challenges. On the one hand, it is necessary to improve teachers' information literacy to adapt to the new teaching mode; On the other hand, it is necessary to pay attention to students' problems in the process of using information technology, such as Internet addiction and information security. In general, the role and impact of ICT in education are two-sided, with both positive promotion and challenges that need to be addressed. We should make full use of the advantages of ICT to promote innovation and development of education.

2. Traditional music education paradigm and modern music education paradigm

2.1. The characteristics of traditional music education paradigm

The traditional music education paradigm is mainly based on face-to-face classroom teaching, which is teacher-centered and emphasizes the teaching of teachers' skills and knowledge. The curriculum and teaching methods are relatively fixed, emphasizing student compliance and repetition. The content of the textbook is mainly classical music and folk music, and the learning materials are relatively simple[4].

2.2. The paradigm shift of modern music education and the influence of ICT

With the development of ICT, the paradigm of modern music education has changed. First of all, the focus of music education has shifted from teachers to students, paying more attention to students' interests and individual needs. Secondly, teaching methods are diversified, including online learning, adaptive learning, collaborative learning, etc. ICT provides a variety of learning tools and platforms. In addition, the scope of music education has also expanded to include diversified music genres such as pop music and electronic music.

ICT has had a positive impact on the paradigm shift of modern music education. On the one hand, ICT provides rich music resources and efficient learning tools, and students can learn and create music anytime and anywhere. On the other hand, ICT promotes the equity of music education and enables more students to receive high-quality music education resources[5]. In addition, ICT provides music teachers with more teaching resources and tools to help them improve the quality and efficiency of their teaching.

2.3. How do music teachers adapt to this shift

Facing the change of modern music education paradigm, music teachers need to adapt to the new teaching mode and method. First of all, music teachers need to improve their information literacy and master the use of ICT tools and platforms. Secondly, music teachers need to change their teaching philosophy from teacher-centered to student-centered, focusing on students' interests and needs. In addition, music teachers need to constantly learn and explore new teaching methods and strategies to adapt to diverse learning styles and needs. Finally, music teachers need to collaborate with professionals in other fields to drive innovation and development in music education. The application of ICT in music education.

3. Multi-scene application of information technology in music course

3.1. Application of information technology in music creation and production

(1) The use of digital audio workstations
Digital Audio Workstation (DAW) is the core tool for music creation and production. It provides powerful audio editing, mixing, effects processing and other functions, making music creation and production more efficient and convenient. Through digital audio workstations, music teachers can guide students to understand the process of audio collection, editing, mixing, etc., and help students master the skills of music production[6].

(2) Introduction and use of music production software
Music production software is another important tool for music creation and production. Common music production software is Logic Pro X, Ableton Live, etc. These software have powerful audio editing, mixing, effect processing and other functions, while providing a wealth of plug-ins and material libraries, making music creation more colorful[7]. Through the introduction and use of music production software, students can deeply understand the music creation process and improve their own music production ability.

3.2. The application of information technology in music teaching

(1) Production and use of multimedia courseware
Multimedia courseware is an important tool in music teaching. Through multimedia courseware, teachers can display music works, explain music knowledge and demonstrate music skills[8]. At the

same time, multimedia courseware can also provide rich audio, video, pictures and other materials, making the teaching content more lively and interesting. By making and using multimedia courseware, teachers can improve teaching quality and efficiency and stimulate students' learning interest and motivation.

(2) Learning and practice of online music courses

Online music course is one of the applications of information technology in music teaching. Through online courses, students can learn about music at anytime, anywhere. At the same time, online courses can also provide real-time interaction, online assessment and other functions, making learning more personalized and efficient. Through the study and practice of online courses, students can broaden their learning channels and improve their learning results.

3.3. Application of information technology in music performance

(1) Introduction and use of virtual Musical Instruments and virtual concert halls

Virtual instrument and virtual concert hall is one of the applications of information technology in music performance. Through virtual Musical Instruments and virtual concert halls, students can simulate the real musical instrument sound and playing environment on the computer, and perform music creation and performance. At the same time, virtual instruments and virtual concert halls can also provide rich sound effects and effect processing functions, making music performance more colorful. Through the introduction and use of virtual Musical Instruments and virtual concert halls, students can broaden the way of performance and improve the performance effect.

(2) Digital AIDS for music performance

Digital AIDS are one of the applications of information technology in music performance. Common digital AIDS include metronomes, tuners and so on. These tools can help students maintain the accuracy of rhythm and intonation during performance, and improve the quality and effect of performance[9]. At the same time, digital AIDS can also provide real-time feedback and adjustment functions, making the performance more flexible and personalized. Through the use of digital AIDS, students can better master the performance skills and improve the performance level.

4. The advantages and challenges of ICT in music education

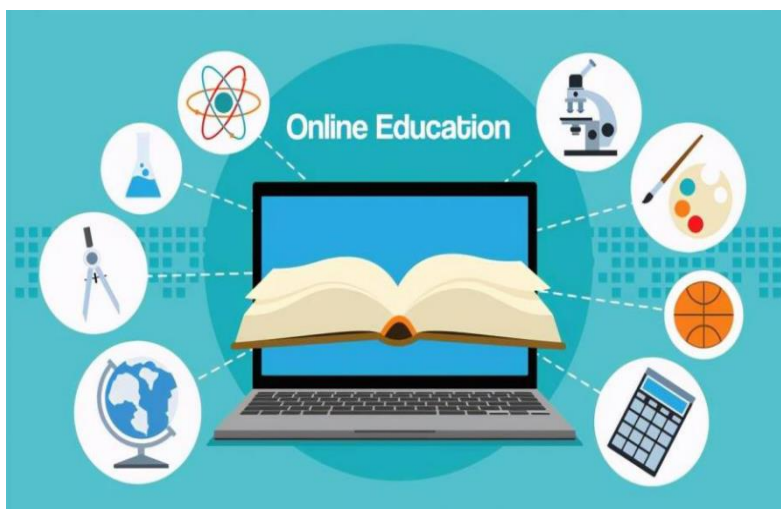## 4.1. The advantages of ICT in music education

Figure 1: Online learning model

(1) Improve teaching quality and effect

The application of ICT in music education makes the teaching content more rich, vivid and interesting. Through digital audio workstation, music production software and other tools, teachers can better display music works, explain music knowledge, demonstrate music skills, so as to improve the quality and effect of teaching. At the same time, students can also learn anytime and anywhere through online courses, multimedia courseware and other learning methods to improve the learning effect (Figure 1).

(2) Enrich teaching means and methods

ICT provides a variety of teaching means and methods for music education. For example, through virtual Musical Instruments and virtual concert halls, students can simulate the real musical instrument sound and playing environment on the computer, and perform music creation and performance. This digital aid not only enriches teaching methods, but also makes learning more personalized and efficient. In addition, teachers can also use online courses, collaborative learning and other ways to guide students to conduct independent learning and cooperative learning to improve students' learning ability and cooperation ability.

(3) To promote students' independent and cooperative learning

ICT provides students with more opportunities for independent and collaborative learning. Students can choose their own learning content and learning methods through online courses and learning websites. At the same time, students can also learn and communicate with classmates through collaborative learning, group discussion and other ways to improve the learning effect and cooperation ability[10]. This approach of independent and cooperative learning helps to cultivate students' innovative ability and awareness of lifelong learning.

4.2. Challenges and problems facing ICT in music education

(1) The input and use of technical equipment

Although ICT has many advantages in music education, the investment and use of technical equipment has always been an important factor restricting its development[11]. Some schools may lack the necessary technical equipment and financial support, resulting in the application of ICT in music education is limited. In addition, some teachers may lack the necessary technical skills and knowledge to effectively use ICT for music teaching.

(2) Training and improvement of teachers' information literacy

The information literacy of teachers is one of the key factors affecting the application of ICT in music education. Some teachers may lack the necessary information literacy and skills to effectively use ICT for music teaching. Therefore, it is necessary to strengthen the training of teachers and improve their information literacy, so that they can better use ICT for music teaching.

(3) Students' problems and countermeasures in the process of using information technology

Students may also encounter some problems in the use of information technology. For example, some students may be addicted to online games or social media, which leads to a decline in learning effect. In addition, some students may lack the necessary information literacy and skills to effectively use ICT for learning. Therefore, it is necessary to strengthen the guidance and education of students to improve their information literacy and skills. At the same time, it is also necessary to strengthen the supervision and management of students to prevent them from being addicted to online games or social media (Table 1).

Table 1: Students' problems and countermeasures in the process of using information technology

Problem	Counterplan
Be addicted to online games	1.Strengthen students' self-management ability and arrange study and recreation time reasonably.
	2.Schools and families work together to limit students' Internet time.
	3.Provide beneficial online activities, such as online learning, music creation, etc.
Social media addiction	1.Educate students on the proper use of social media and clarify its functions and uses.
	2.Guide students to establish good social habits and avoid over-reliance on social media.
	3.Schools and families pay attention to students' social media use and provide timely guidance and help.
Insufficient information literacy	1.Strengthen students' information literacy education and improve their understanding and mastery of information technology.
	2.Provide a wealth of learning resources and learning opportunities to help students improve information literacy.
	3.Encourage students to exercise information literacy in practice, such as participating in computer competitions, online courses and so on.

5. The prospect and suggestion of future music education

5.1. The future trend and development direction of music education

With the continuous development of science and technology, music education will show the following trends and development directions in the future:

(1) Personalized teaching: With the help of big data, artificial intelligence and other technologies, music education will be more personalized, able to provide customized teaching content and methods according to students' interests, abilities and needs.

(2) Interdisciplinary integration: The integration of music and other disciplines will become an important direction of music education in the future, such as music and technology, music and art, which will provide students with a broader learning space.

(3) Blended teaching: Online and offline blended teaching will become the mainstream, students can learn basic knowledge online, offline practice and creation.

(4) Social learning: Social media will play a greater role in music education, and students can communicate, share and collaborate with others through social media to improve learning results.

5.2. How to make better use of ICT to promote innovation and development of music education

Figure 2: Online music library

In order to make better use of ICT to promote the innovation and development of music education, the following suggestions are worth referring to: Firstly, we should strive to strengthen the research and development of music education related technologies, such as developing more advanced

intelligent teaching systems and creating more realistic virtual instruments, in order to provide a more solid technical support for the field of music education. Secondly, we need to increase the technical training for music teachers to enhance their information literacy and professional skills, ensuring that they can proficiently use information and communication technology to optimize music teaching. Thirdly, a rich library of music teaching resources, including digital audio, music production software, online courses, etc. (Figure 2), should be established to provide teachers and students with rich learning resources[12].

5.3. Suggestions and requirements for music teachers

As a future music teacher, they need to actively embrace new technologies, constantly learn and master new teaching methods and tools to adapt to the development of music education in the future. At the same time, we should strengthen the cultivation and improvement of our own information literacy, and be able to skillfully use various ICT tools and platforms for music teaching. In addition, it is more student-centered, paying attention to the interests and needs of students, and providing personalized teaching content and methods. It is best to actively cooperate with teachers from other disciplines to promote innovation and development of music education.

6. Conclusion

ICT has had a profound impact on the paradigm transformation of music education. It has promoted the transformation of music education from traditional classroom teaching to modern and diversified direction. ICT provides a wealth of music resources and efficient learning tools, making music education more personalized, interactive and innovative. At the same time, ICT also promotes the equity of music education, so that students in more regions and schools can enjoy high-quality music education resources. Therefore, ICT plays an important role in music education, injecting new vitality into the innovation and development of music education.

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