THE IMPLICATION OF VR INTO THE VOCAL MUSIC TEACHING

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Abstract

With the rapid development of digital technology, the society has entered a new economic form now, that is digital economy form. At present, human beings have entered a new production stage, and data has become the main means of production, affecting the development level of the whole economy. Under the background of comprehensive social and economic development, on the basis of digital technology of computer technology, network technology, virtual reality technology (VR), augmented reality (AR), artificial intelligence, the innovative development of the fifth generation of mobile communication technology (5G) and other emerging information technologies and the empowerment of the superposition effect, is accelerating to the society, mainly including: digital industrialization, digital, digital public service, etc., in the field of digital integration and innovation and development, promote the whole society to the new social form. This article presented (1) virtual reality (VR) technology; (2) connection between virtual reality technology and music education; (3) The implication of VR into the vocal music teaching.

Keywords: VR Technology; Implication; Vocal Music Teaching

Introduction

In the process of the whole society to digital transformation, education is impossible to be immune, therefore, the transformation of education to digital is an inevitable trend. With the development of information technology, the use of virtual simulation technology for music performance teaching is the reform of traditional teaching means, promote the urgent need of talent training mode innovation, and strengthen the teaching and learning, training integration of education teaching activities, effectively make up for students' art practice, into, higher cost of art teaching problem.

In order to carry out stage practice according to the knowledge they have learned, students need to have a stage scene for students of multiple classes to use at the same time. Obviously, most non-art schools do not have such teaching conditions, and have encountered teaching pain points and difficulties of high investment, high loss, difficult to observe, difficult to implement and difficult to reproduce.

At the same time, in the process of music teaching in secondary vocational schools, we also found that many students often show tension and anxiety in music practice and music performance, the main reason is that the stage practice experience caused by the lack of confidence, skills is not skilled enough, concentration is not high. To learn music, which it is quite special more than other subjects, teacher should not only pay attention to the teaching of theoretical knowledge, but also pay attention to the practice of skills. Without the repeated music performance stage practice, they will lack of rich stage experience, on the stage is easy to be nervous, produce performance anxiety.

People often have a sense of spontaneous during a state of flow, effortless performance and total immersion and focus on the activity to the exclusion of other environmental or internal stimuli. But if, on the other hand, this state is the culmination of discipline, dedicated practice, concentration, and perseverance: they will occur when the challenges are matched with the necessary underlying skills and the honing of those skills to achieve mastery (Kenny, 2010).

Virtual reality (VR) is a hot technology that has emerged rapidly in recent years. As a sub-field of the VR field, immersive VR can enable users to actually participate in the virtual world created by computers, and allow people to experience the immersive effect by using interactive devices. The application of virtual reality technology can create an immersive performance environment for students in the music class, such as singing, dancing, drama performance, etc. Enhance the experience，so that students can get sufficient stage performance training in the class and reduce anxiety before music performance.

Virtual Reality (VR) Technology

A common definition of VR is “A technology that convinces the participant that he or she is actually in another place by substituting the primary sensory input with data received produced by a computer”. One of the key elements to VR is a virtual world, it is an imaginary space or a simulated environment. It is an illusion to illustrate a collection of objects in an environment that fulfil the imagination of the creator. Together with the virtual world there is the immersion of VR, the perception of being in an alternate world such as an imaginary world or another point of view of our world. VR uses the computer and a variety of accessories to create simulations of the human experience. Its purpose is to improve communication in all forms between humans, machines and other beings. VR is a way that you can have a real environment without having to be on the scene, and can interact with the virtual environment “intuitive operating environment”, this is both true and unreal situation beyond people's usual perception Real-world experience (Hedberg & Alexander, 1994).

Based on the concepts of presence, interactivity, and immersion, VR may be understood as follows: VR leverages immersive technologies to simulate interactive virtual environments or virtual worlds with which users become subjectively involved and in which they feel physically present (Wohlgenannt et al., 2020).

With the development of virtual reality technology (VR), VR technology is widely used in military, science and technology, teaching, medicine and other fields with its 3I characteristics: Immersion (immersive), Interaction (interactive) and Imagination (conceptual). VR glasses are the use of head-mounted display devices to close people's vision and hearing to the outside world, guiding users to produce a feeling of being in a virtual environment. The principle is that the double eye screen displays the images of the left and right eyes respectively, and the human eye obtains this different information to produce a three-dimensional feeling in the mind.

Virtual reality (VR) technology refers to computer-generated environments that simulate physical presence in real or imagined worlds. Users can interact with and experience these immersive environments through specialized hardware such as headsets and controllers. Virtual reality technology aims to create a sense of presence and immersion, allowing users to feel as though they are actually present in the virtual environment. This technology can be used for various applications, including entertainment, education, training, therapy, and simulation.

The Connection Between Virtual Reality Technology and Music Education

VR offers many unique benefits when used in education. First and foremost, by adapting VR into modern day education, it offers a new tool for educators and provides a new way of reaching out to more students. The goal of VR is to enhance, motivate and stimulate students of certain events and at the same time also allows for students to experience hands on learning (Bell & Fogler, 2004). One of the primary advantages of implementing VR in education is that it provides a more immersive and engaging learning experience. VR can transport learners difficult to-access places, such as historical monuments, outer space or even within the human body. Students are able to better understand the subject and engage with the learning material when they are given a unique perspective. Furthermore, VR in education can enhance collaborative learning. Learners can interact with their peers and the virtual environment, making the experience more active. It can additionally offer students a personalized learning experience by allowing them to explore the virtual world at their own pace and

in the way they prefer. Students can improve their comprehension of the subject matter by using VR technology to deliver personalized feedback (Marougkas et al., 2023).

The virtual world can be programmed to provide various types of guidance to students. Students can explore and return to the same place repeatedly, building an increasingly sophisticated understanding of concepts and procedures. Learners can experiment with a situation exploring each option and revisiting the same space until a complete knowledge of the underlying concepts is obtained. In this way, some of the attributes of the 'game' strategy are automatically built into the learning context.

School music teachers should be advised to anticipate the potential for students to experience anxiety while performing in front of an audience, and to help prepare students for that experience in a way that reduces student anxiety. Using VR to create a virtual stage with an audience meets this demand is a way to learn from.

VR has a notable benefit in education as it offers a cost-effective solution. The use of VR in education has the capability to revolutionize the learning experience for students through immersive and captivating encounters that can enhance their comprehension of the subject. Providing an interactive VR experience has the potential to connect theoretical concepts with practical applications, thereby equipping students with the confidence to face future challenges. With the continuous advancement of technology, it is highly probable that VR will become an essential component of the education system, offering students a potent means to amplify their learning (Wohlgenannt et al., 2020).

The application of virtual simulation technology in music education can bring about numerous innovations and conveniences. Here are some examples:

Instrument Simulation: Students can use virtual simulation technology to simulate the playing of various instruments. Through specialized virtual instrument software, students can practice piano, guitar, violin, and other instruments without the need for actual instruments. This makes the learning process more flexible and accessible anytime, anywhere.

Music Theory Teaching: Virtual simulation technology can be used to present concepts of music theory such as scales, rhythms, chord structures, etc. Through interactive virtual environments, students can more intuitively understand these abstract concepts, thereby improving learning efficiency.

Performance Technique Training: Virtual simulation technology can provide personalized performance technique training. By analyzing students' performances, virtual systems can provide immediate feedback and suggestions to help students improve their performance skills and enhance their performance levels.

Music Composition and Arrangement: Students can utilize virtual simulation technology for music composition and arrangement. Using virtual music workstation software, they can use various instrument sounds, rhythm patterns, and effects to create their own musical compositions, thereby nurturing creativity and musical expression.

Music History and Culture: Virtual simulation technology can help students better understand the history and cultural background of music. Through virtual reality technology, they can immerse themselves in music performances from different periods and regions, deepening their understanding of music history and culture.

Virtual reality technology offers numerous advantages in the field of education.

Enhanced Learning Experience: Virtual reality provides immersive and interactive learning experiences that engage students and enhance their understanding of complex concepts.

Safe Learning Environment: Virtual reality allows students to practice and experiment in a risk-free environment, reducing the potential for accidents or mistakes.

Accessibility: Virtual reality can be accessed remotely, enabling students to participate in educational activities from anywhere with an internet connection.

Cost-Effective: Virtual reality can reduce the need for expensive physical equipment and resources, making education more affordable and accessible to a wider audience.

Personalized Learning: Virtual reality can be customized to meet the individual learning needs of students, allowing for personalized instruction and feedback.

Real-World Application: Virtual reality can simulate real-world scenarios and environments, providing students with practical, hands-on experience in various fields of study.

Collaboration and Communication: Virtual reality facilitate collaboration among students and educators, allowing for interactive learning experiences and knowledge sharing.

Overall, virtual reality technology offers a versatile and effective tool for enhancing the educational experience and improving learning outcomes across various disciplines. Virtual reality technology brings many innovations and conveniences to music education, improving students' learning efficiency and performance levels while enriching the content and format of music education (Tang et al., 2009).

The Implication of VR into the Vocal Music Teaching

In the realm of vocal music teaching, numerous challenges exist that impact both students and educators on a daily basis. Novice singers, in particular, often find themselves grappling with a lack of foundational skills, which can lead to inefficiencies in their learning process and a subsequent decrease in motivation. The technical aspects of singing, such as mastering breath control and pitch accuracy, require immense patience and consistent practice to achieve proficiency. Teachers play a crucial role in not only imparting these skills but also in cultivating students' appreciation for music and encouraging them to express themselves emotionally through their voices (Sherman & Craig, 2002).

One of the most prevalent challenges faced by vocal music students is performance anxiety. This common hurdle can have a significant impact on students' confidence levels and their ability to sing expressively. Performance anxiety often manifests in physical symptoms such as tension in the body, issues

with intonation, and a decrease in vocal quality. These manifestations of anxiety can hinder students' progress and overall well-being, making it essential for educators to implement strategies to help students manage and overcome these challenges (Taborsky, 2007).

Performance anxiety is a common hurdle faced by students, affecting their confidence and ability to sing expressively. This anxiety can manifest in physical tension, intonation issues, and a decrease in vocal quality. It can hinder students' progress and overall well-being, necessitating strategies to manage and overcome it.

There are various factors that contribute to performance anxiety among vocal music students. High self-expectations, fear of judgment from others, a lack of confidence in their abilities, and feeling inadequately prepared are just a few of the reasons why students may experience anxiety before performances. To alleviate these feelings of anxiety, students can engage in regular practice, visualize successful performances, utilize relaxation techniques, and seek support from their teachers and peers.

Incorporating performance opportunities into the curriculum can help students gradually build confidence and resilience in facing performance anxiety. By providing regular performance opportunities, students can become more comfortable with the pressure and expectations of performing in front of others. Educators can also offer constructive feedback and encouragement to help students grow and improve their performance skills (Bissonnette et al., 2016).

New Knowledges

In recent years, virtual reality technology has emerged as a potential game-changer in the field of vocal music teaching. By providing students with immersive and interactive experiences, virtual reality has the capacity to revolutionize the way students learn and perform music. Virtual reality can aid in visualizing complex musical concepts, facilitate virtual field trips to iconic performance venues, and create realistic simulations of live performances. Virtual stages, in particular, offer students a unique and immersive experience

that can enhance their learning and performance skills in ways that traditional teaching methods cannot.

With the advent of virtual reality technology, educators now have a powerful tool at their disposal to help students overcome these challenges. By creating immersive and interactive learning experiences, virtual reality has the potential to transform the way students learn and perform music. Through thoughtful implementation and assessment of virtual reality technology, educators can empower students to reach their full potential as singers and performers.

Virtual reality technology has the potential to revolutionize vocal music teaching by providing immersive and interactive experiences. It can aid in visualizing complex concepts, facilitating virtual field trips, and creating realistic performance simulations. Virtual stages offer students an immersive experience, enhancing their learning and performance skills.

Using virtual reality technology can effectively reduce student's anxiety about music performances. Through virtual reality technology, Students can simulate the scene of music performances in a virtual environment, helping them better prepare and cope with real music performances. Research shows that using virtual reality technology for music performance training can increase student's confidence and performance level, reduce their nervousness and anxiety. Virtual reality technology not only provides a safe environment for practicing music performances but also helps people better understand and master the skills and requirements of music performances. Therefore, virtual reality technology is an effective tool that can help people overcome anxiety in music performances, improve their performance level, and enjoy the pleasure of music performances.

Conclusions

Overall, virtual reality technology holds promise in reducing performance anxiety by offering a safe space for students to practice and gain confidence. By embracing innovative teaching tools and addressing students' psychological well-being, educators can enhance the vocal music learning experience and empower students to reach their full potential as singers.

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