Virtual Reality Technology and Contemporary Aesthetic Thinking: Redefining the Space and Time of Digital Art

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Abstract: This paper explores how virtual reality technology redefines the space and time of digital art in contemporary aesthetic thinking. Firstly, the development and application of virtual reality technology are introduced, including its definition, characteristics and application in the field of art. Then, from the perspective of contemporary aesthetic thinking and digital art, this paper discusses the concept and characteristics of digital art, as well as the status and role of digital art in contemporary aesthetic thinking. Then, it focuses on the redefinition of virtual reality technology to digital art space, including the expansion and reconstruction of art space, new possibilities for art creation and the impact on audience experience. Then, the paper discusses the redefinition of digital art time by virtual reality technology, including the manipulation and reshaping of art time, the innovation and challenge of art narrative, and the impact on the audience's time perception. Finally, the main conclusions of the study are summarized, and the future research direction is prospected.

Keywords: Virtual Reality Technology; Contemporary Aesthetic Thinking; Digital Art; Space Redefinition; Time Redefinition

1. INTRODUCTION

Virtual Reality (VR), as an emerging technology, is gradually penetrating into various fields, including the field of art. Virtual reality technology has redefined the space and time of digital art by simulating the real world or creating fictional worlds to provide audiences with immersive experiences. This thesis aims to explore the relationship of virtual reality technology to contemporary aesthetic thinking and its implications for the spatial and temporal redefinition of digital art.

1.1 Development and Application of Virtual Reality Technology

This chapter will introduce the definition and characteristics of virtual reality technology, review its historical development, and explore its application in the field of art. By understanding the basic concepts and evolution of virtual reality technology, we can better understand its application and impact in digital art.

1.2 Contemporary Aesthetic Thinking and Digital Art

This chapter will explore the evolution and development of contemporary aesthetic trends, and analyze the concept and characteristics of digital art. As an important form of contemporary art, digital art has a unique way of creation and expression. We will explore the place and role of digital art in contemporary aesthetic thinking.

1.3 Virtual Reality Technology Redefines the Space of Digital Art

This chapter will focus on virtual reality technology to redefine the digital art space. Through the application of virtual reality technology, the art space is no longer limited to the physical space, and the audience can enter the virtual space created by the art work through the virtual reality equipment, and get a more immersive experience. We will explore the new possibilities of virtual reality technology for art creation and its impact on the audience experience.

1.4 Virtual Reality Technology Redefines the Time of Digital Art

This chapter will explore how virtual reality technology redefines digital art time. Through virtual reality technology, artists can manipulate and reshape the time dimension of art works, creating non-linear and multi-dimensional time narratives. The audience's perception of time in the virtual reality environment will also change, and experience a richer and more diversified time experience. Through the discussion of the relationship between virtual reality technology and contemporary aesthetic thinking, and the analysis of virtual reality technology's redefinition of digital art space and time, this paper aims to provide new thinking and inspiration for digital art creation and viewing. It is hoped that this research can promote the further application and development of virtual reality technology in the field of art, and promote the innovation of digital art and the improvement of artistic experience. Virtual reality technology is an advanced technology that develops rapidly in recent years, it creates a virtual environment by simulating human senses, and users can interact with the virtual environment. The emergence and application of virtual reality technology has brought great changes to various fields, including the field of art. As an emerging art form, digital art uses digital technology to create unique works of art. Virtual reality technology brings a new dimension of space and time to digital art, and redefines the way of creation and viewing experience of digital art. Over the past few decades, the art world has been constantly exploring and innovating, from traditional

painting and sculpture to photography and video art, artists are constantly seeking new ways of expression and art forms. However, with the progress of science and technology and the emergence of virtual reality technology, artists have found that virtual reality technology has brought unprecedented creative space and time dimension to art. Through virtual reality technology, artists can create a virtual art space, so that the audience can feel the art works. At the same time, virtual reality technology can also change the time perception of art works, so that art works become more dynamic and interactive. This thesis aims to explore the relationship between virtual reality technology and contemporary aesthetic thinking, and focuses on how virtual reality technology redefines space and time in digital art. Through the analysis and research of the relevant theories of virtual reality technology and digital art, as well as the empirical study of relevant cases, this paper aims to reveal the impact and challenge of virtual reality technology on digital art, and provide new ideas and methods for the development of digital art. The significance of this paper is as follows:

1. In-depth discussion of the relationship between virtual reality technology and digital art to provide a new theoretical basis and practical guidance for the development of digital art. 2. Analyze the redefinition of virtual reality technology to the space and time of digital art, and reveal the innovation potential and application prospect of virtual reality technology in digital art. 3. Provide research results and practical experience on virtual reality technology and digital art to artists, designers and art lovers, and promote the creation and promotion of digital art. Through the research of this paper, we can better understand the relationship between virtual reality technology and digital art, and provide new ideas and methods for the innovation and development of digital art. At the same time, this study is also helpful to promote the application and development of virtual reality technology in the field of art, promote the integration of art and technology, and promote artistic innovation and cultural inheritance.

2. CHAPTER ONE IS THE DEVELOPMENT AND APPLICATION OF VIRTUAL REALITY TECHNOLOGY

2.1 Definition and Characteristics of Virtual Reality Technology
2.1.1 Definition and Features of Virtual Reality Technology (ZHAO, 2023).

Virtual Reality (VR) is a computer-generated simulation environment that interacts with users through sensing devices and interactive devices,

enabling users to experience the virtual world. Virtual reality technology provides a new perceptual experience by simulating the real world or creating a fictional world, allowing users to enter the virtual space outside the real world. Virtual reality technology has the following characteristics:

1. Immersive experience: Virtual reality technology fully immerses users in the virtual world through head-mounted displays, joysticks, sensors and other devices. Users can interact with the virtual environment through the senses of touch, vision, hearing, etc., and get the feeling of being there.

2. Interactive and real-time: Virtual reality technology can respond to users' actions and instructions in real time, enabling users to interact with the virtual environment in real time. Users can communicate and operate with the virtual environment through gestures, voice, controllers, etc.

3. Multi-sensory experience: Virtual reality technology can not only provide visual experience, but also enhance the user's perception through sound, touch and other ways. Through technologies such as stereo sound and haptic feedback, users can feel the virtual environment more realistically.

4. Free exploration: Virtual reality technology can provide a variety of virtual scenes and virtual objects, and users can freely explore the virtual world. Users can roam, observe and interact in the virtual environment to get a richer experience.

5. Widely used: Virtual reality technology is not only widely used in the field of games, but also in education, medical care, architectural design and other fields. Virtual reality technology can provide a real simulation environment and provide new possibilities for practice and training in various fields (Liu, 2023). The rapid development and wide application of virtual reality technology has brought new challenges and opportunities to the field of digital art. Through virtual reality, artists can create richer, more immersive works of art, and audiences can participate in the creation and appreciation of art in new ways. Virtual reality technology redefines the space and time of digital art, bringing a new artistic experience to artists and audiences.

2.2 Historical Development of Virtual Reality Technology

Virtual reality is a technology capable of simulating and creating virtual environments, which can immerse users in a simulated virtual world through computer-generated images, sounds and other sensory stimuli. The development of virtual reality technology can be traced back to the 1960s, but it is not until recent years, with the rapid development of computer technology and the popularity of hardware equipment, virtual

reality technology has been widely used and concerned. In the 1960s, prototypes of virtual reality technology began to appear. Due to the limitations of computer technology at that time, the development of virtual reality technology was slow. Until the 1980s, with the progress of graphics processing technology and the improvement of computer hardware, virtual reality technology began to usher in a stage of rapid development. In 1984, VPL Research, an American virtual reality company, was founded and became one of the pioneers of virtual reality technology. In 1989, the National Science Foundation established the Virtual Reality Engineering Center to further promote the research and application of virtual reality technology. With the continuous progress of computer technology, virtual reality technology has been widely used commercially in the 1990s. Virtual reality devices such as head-mounted displays, gloves, and motion sensing devices are beginning to enter the market and are used in games, training, medical and other fields. In 2002, the virtual reality company Oculus VR was founded in the United States, launched the first virtual reality head-mounted display Oculus Rift, triggered a new wave of virtual reality technology. In recent years, virtual reality technology has been further developed and popularized. With the popularity of smart phones and the development of mobile computing, virtual reality technology has begun to expand to the field of mobile devices. At the same time, the application of virtual reality technology in education, tourism, entertainment and other fields is also more and more extensive. In 2016, Facebook acquired Oculus VR, further boosting the development of virtual reality technology. The historical development of virtual reality technology can be seen that it has experienced multiple stages of evolution and breakthrough. With the continuous progress of computer technology and the continuous improvement of hardware equipment, virtual reality technology is more and more widely used in various fields. In the future, virtual reality technology is expected to be further developed to create a more immersive and real virtual experience for people (Su & Yu, 2023).

2.3 Application of Virtual Reality Technology in the Field of Art

Virtual reality technology, as a new interactive digital technology, has been gradually applied in the field of art, providing artists with a broader space for creation and expression. The application of virtual reality technology in the field of art can be divided into the following aspects: First of all, virtual reality technology provides a new medium and expression for artistic creation. Artists can use virtual reality technology to create a virtual art world, and interact with the audience through virtual reality equipment,

so that the audience can feel the emotion and meaning conveyed by the art work. For example, an artist can use virtual reality technology to create a virtual painting or sculpture, and the audience can enter the work through virtual reality equipment to interact with and explore the work. Second, virtual reality technology provides completely new forms and experiences for art exhibitions and performances. Traditional art exhibitions and performances are usually passively appreciated by the audience, but virtual reality technology allows the audience to participate in the art creation and performance, and become a part of the work. Artists can use virtual reality technology to create interactive art exhibitions and performances, and the audience can interact and experience the works through virtual reality equipment, and get a richer and deeper artistic experience. In addition, virtual reality technology also provides new possibilities for art education and art inheritance. Through virtual reality technology, artists can create virtual art education scenes, so that students can learn and experience art knowledge and skills in a virtual reality environment. At the same time, virtual reality technology can also be used for the digital preservation and inheritance of art works, so that art works can be better appreciated and learned by future generations. To sum up, the application of virtual reality technology in the field of art provides new possibilities and experiences for art creation, exhibition, performance, education and inheritance. The development and application of virtual reality technology will further promote the innovation and development of art, and bring more rich and in-depth art experience to the audience.

3. CHAPTER TWO: CONTEMPORARY AESTHETIC THINKING AND DIGITAL ART

3.1 Evolution and Development of Contemporary Aesthetic Thoughts

Contemporary aesthetic trend refers to a series of thinking and exploration of aesthetic theory and artistic practice under the background of contemporary society. It originates from the artistic revolution of modernism, but it is obviously different from the traditional aesthetic thought. Under the background of the pluralism and globalization of contemporary society, the aesthetic trend of thought also presents diversity and complexity. The evolution and development of contemporary aesthetic thoughts is a pluralistic process. On the one hand, the criticism and transcendence of traditional aesthetics is one of the important characteristics of contemporary aesthetics. The redefinition and criticism

of the traditional aesthetic category make the contemporary aesthetic trend pay more attention to the diversity and individuality of art. On the other hand, contemporary aesthetic trends are also influenced by the development of society and science and technology. Under the background of globalization and digitalization, the contemporary aesthetic trend pays more attention to cross-culture, cross-media and interdisciplinary art practice. For example, postmodernist ideas emphasize rheology and diversity in art and explore the relationship of art to reality, audience, and power. Poststructuralism and semiotics focus on the symbolic system and meaning construction of works of art. The development of contemporary aesthetic thoughts is also promoted by artistic practice. For example, the emergence of new art forms such as conceptual art, performance art and installation art has challenged the categories and aesthetic standards of traditional aesthetics. In addition, contemporary aesthetic trends are also influenced by social changes and political and economic factors. For example, feminist aesthetics emphasizes issues of gender and identity, while postcolonial aesthetics focuses on political issues of power and identity. In short, the evolution and development of contemporary aesthetic thoughts is a complicated and pluralistic process. It not only involves the criticism and transcendence of aesthetic theory, but also is influenced by the development of society and science and technology. The diversity and complexity of contemporary aesthetic thoughts reflect the pluralism and globalization trend of contemporary society. Under this background, contemporary aesthetic trends provide new thinking and possibilities for artistic practice and aesthetic experience.

3.2 Concept and Characteristics of Digital Art

Digital art is an art form that uses digital technology to create and express art. It combines digital media with artistic creation through computer, Internet, virtual reality and other technical means to present unique works of art. Digital art has the following characteristics (Li & Zhou, 2023). First, digital art is innovative and diverse. Digital technology provides artists with a wealth of creative tools and means of expression, so that art works can present more diversified characteristics in form, content, expression and other aspects. Artists can use image processing, animation, audio synthesis and other technologies to create unique works of art that break the limits of traditional art forms. Secondly, digital art is interactive and participatory. Through digital technology, art works can interact with the audience, and the audience can participate in the creation and interpretation of the art work. For example, virtual reality technology can allow the audience to

participate in the work of art, interact with the work, and change the form and content of the work. This kind of interactivity and participation makes the audience become the creator and co-experience of the art work. Third, digital art is replicable and transmissible. The characteristics of digital media make it easy for works of art to be copied and distributed. Through the Internet and digital media platforms, artists can quickly spread their works to a global audience, expanding the influence and audience of their works. This reproducibility and propagation provides artists with a broader space for creation and dissemination. Finally, digital art has the characteristics of integration with technology. Digital technology is the foundation of digital art, artists need to master the application of digital technology in order to create high-quality digital art works. The integration of digital art and technology not only promotes the development of digital art, but also promotes the innovation and application of science and technology. In short, as a new art form, digital art has the characteristics of innovation, interaction, replicability and integration with science and technology. Its emergence provides new ideas and ways of expression for artistic creation, and also provides a new artistic experience for the audience. Digital art has an important position and role in contemporary aesthetic thinking, which is worthy of further study and exploration.

3.3 Status and Role of Digital Art in Contemporary Aesthetic Thinking

Digital art occupies an important position in contemporary aesthetic thinking and plays a unique role. In contemporary society, the rapid development of digital technology has allowed artists to create and express their ideas in ways never before possible. Digital art not only provides artists with a broader creative space, but also brings a new aesthetic experience to the audience. First of all, digital art plays an important role in contemporary aesthetic thinking, because it breaks the restrictions of traditional art forms and provides artists with more freedom. Traditional art forms are limited by material and media, while digital art can create infinite possible works of art through means such as virtual reality technology. Artists can use digital technology to create virtual art Spaces, bringing the audience into an environment completely different from the real world, thus triggering the audience's thinking about space and existence (Cui & Cheng, 2022). Secondly, the role of digital art in contemporary aesthetic thinking is also reflected in its impact on artistic creation and audience experience. The creative process of digital art often requires the help of computers and virtual reality technology, and artists can use these tools to realize their creative ideas and present artistic effects

that were previously difficult to achieve. When facing digital art works, the audience can interact with the works and participate in the process of art creation, thus bringing the distance between the audience and the artist closer and enhancing the audience's sense of participation and immersion. Finally, the position of digital art in contemporary aesthetic thinking is also reflected in its impact on art communication and exchange. With the popularization of digital technology and the development of the Internet, digital art can be widely disseminated through online platforms, breaking the restriction that traditional art works can only be displayed in specific exhibition venues. Audiences can enjoy digital art works anytime and anywhere through the Internet, communicate and share with artists and other audiences, and promote the globalization and diversification of art. To sum up, the position and role of digital art in contemporary aesthetic thinking can not be ignored. By breaking the restrictions of traditional art forms, it provides artists with more creative space and freedom, and also brings a new aesthetic experience to the audience. Digital art has promoted the development and evolution of contemporary aesthetic thinking through its influence on art creation, audience experience and art communication.

4. CHAPTER THREE: VIRTUAL REALITY TECHNOLOGY REDEFINES THE SPACE OF DIGITAL ART

4.1 Expansion and Reconstruction of Art Space by Virtual Reality Technology

The emergence and development of virtual reality technology provides a new possibility for the expansion and reconstruction of art space. Traditional art Spaces are usually limited, limited by physical space, and the audience can only experience the art space by watching artworks or participating in art exhibitions. However, virtual reality technology can take the audience into a whole new art space by simulating and creating a digital virtual environment. First, virtual reality technology can expand the scope of art space. Through virtual reality equipment, the audience can enter a virtual art space, whether in an art exhibition or in an art work, the audience can freely explore and experience. For example, in the virtual reality exhibition, the audience can freely roam among the artworks and feel the details and atmosphere, breaking the distance between the audience and the works in the traditional exhibition. Secondly, virtual reality technology can reconstruct the form of art space. Traditional art Spaces are usually

static, but virtual reality technology can create dynamic, interactive art Spaces. The audience can interact with the artwork through virtual reality devices, changing the form and content of the artwork. For example, in a virtual reality art work, the viewer can change the color, shape or movement of the work through gestures or sounds, making the viewer a participant in the art creation (Sun & Jiang, 2022). Finally, virtual reality technology can reconstruct the perception and experience of art space. Traditional art Spaces are usually static, and the audience can only experience the works of art through sight and sound. However, virtual reality technology can make the audience feel the art work more immersive by simulating a variety of sensory experiences, such as touch, smell, movement, etc. The audience can feel the texture, temperature, smell, etc. of the art work through the virtual reality equipment, which enhances the emotional communication between the audience and the art work. In short, virtual reality technology is of great significance to the expansion and reconstruction of art space. It not only expands the scope of the art space, so that the audience can feel the art works in an immersive way, but also reconstructs the form and perception of the art space, providing a richer and more diversified art experience. With the continuous development and application of virtual reality technology, we can expect that virtual reality technology will play an increasingly important role in the future art space.

4.2 New Possibilities of Virtual Reality Technology for Artistic Creation

The rapid development of virtual reality technology has brought new possibilities for art creation. Through virtual reality technology, artists can create virtual Spaces that transcend the real world, allowing viewers to enter a new sensory experience. This technology can break the restrictions of traditional art creation and provide artists with more free and innovative ways of expression. First of all, virtual reality technology provides a broader space for artistic creation. Traditional works of art are limited by the size and limitations of the exhibition venue, and virtual reality technology can create an infinite virtual space for artists to play freely in. Artists can use virtual reality technology to bring viewers into colorful virtual worlds, allowing them to explore, interact and immerse themselves in them. This infinite space creates a richer and more diverse artistic experience and broadens the boundaries of art. Secondly, virtual reality technology has brought more abundant media and forms of expression to artistic creation. Virtual reality technology can combine multiple media forms such as audio, video, images and interaction, so that art works have a more three-dimensional and rich presentation way. Artists can create dynamic and

interactive works of art through virtual reality technology, allowing the audience to participate, interact and co-create with the works. This kind of multimedia expression makes the art creation more vivid and interesting, so that the audience can understand and feel the art work more deeply. Finally, virtual reality technology has brought more expression techniques and technical tools to artistic creation. Virtual reality technology can simulate the physical environment and human movements of the real world, enabling artists to express their creativity and ideas more precisely. Artists can use virtual reality technology to sculpture, painting, music creation and other art forms without the need for real materials and equipment. The use of such technological tools makes artistic creation more efficient and flexible, providing artists with more opportunities for experimentation and innovation (Wang, 2022). All in all, virtual reality technology brings new possibilities for artistic creation. Through virtual reality technology, artists can create a broader space, more abundant media and forms of expression, as well as more expression techniques and technical tools. The application of this technology makes artistic creation more free and innovative, and brings a deeper and richer artistic experience to the audience. With the continuous development of virtual reality technology, the possibilities of art creation will be further expanded, bringing more surprises and creativity to the art world.

4.3 Impact of Virtual Reality Technology on Audience Experience

Chapter four: Virtual reality technology redefines the time of digital art. The emergence of virtual reality technology has brought a new audience experience to digital art. Through virtual reality technology, artists can bring the audience into a fully immersive art world, giving the audience an unprecedented sense of immersion. First of all, virtual reality technology breaks the restrictions of traditional art exhibitions, enabling the audience to freely browse and interact in the virtual space. The audience is no longer limited to viewing static works of art, but is able to personally participate in and interact with the work. For example, in a virtual reality exhibition, visitors can interact with virtual artworks through gestures or controllers, change the form and color of the artwork, and even have a conversation with a virtual character. This interactivity leads to a more active and engaged experience for the audience. Second, virtual reality technology creates a sense of time extension for the audience. In traditional art, the audience can usually only experience the artist's expression through static works. In virtual reality art, the audience can feel the changes and development of art through the flow of time. For example, in a virtual

reality art exhibition, the audience can gradually uncover the story and connotation of the work over time. Viewers can choose to stay in one scene or jump to others at will to experience the artwork at their own pace. This sense of extension in time brings the audience a richer and more personalized art experience. The impact of virtual reality technology on the audience experience is not only the simple visual and auditory stimulation, but more importantly, it changes the relationship between the audience and art. The audience is no longer a passive recipient, but a participant and creator of art. The emergence of virtual reality technology has injected new vitality and possibilities into digital art, enabling audiences to experience and understand art in entirely new ways. This enhanced sense of interaction and participation will further promote the innovation and development of digital art (Huang, 2019). To sum up, the impact of virtual reality technology on the audience experience is all-round. It breaks the restrictions of traditional art exhibitions and brings a more free and interactive experience to the audience. It creates a sense of extension in time, allowing the viewer to experience the work of art at their own pace; Most importantly, it changes the relationship between the audience and art, making the audience a participant and creator of art. The emergence of virtual reality technology has opened up a new space and time for digital art, redefining the audience experience of digital art.

5. CHAPTER FOUR: VIRTUAL REALITY TECHNOLOGY REDEFINES THE TIME OF DIGITAL ART

5.1 Virtual Reality Technology's Manipulation and Reshaping of Art Time
    The manipulation and reshaping of art time by virtual reality technology. Virtual reality technology is an innovative technology that can change people's perception and understanding of time. In digital art, virtual reality technology offers artists the opportunity to redefine and manipulate time to create unique and stunning works of art. First, virtual reality allows artists to manipulate time. Traditional art forms are often linear, with the viewer viewing the work in a chronological order set by the artist. However, virtual reality technology breaks this linear concept of time. Through virtual reality technology, artists can create nonlinear works of art, and the audience can choose different time paths according to their interests and preferences, so as to obtain a personalized art experience. Second, virtual reality technology can reshape the perception of artistic time. Traditional works of art are static, and the audience can only perceive the sense of time expressed by

the artist through static images or sculptures. Virtual reality technology can reshape the viewer's perception of art time through dynamic images, audio and interactivity. The audience can feel the passage of time, feel the changes and developments in the works, and thus have a deeper understanding of the artist's creative intention. In addition, virtual reality technology can also create a time experience that transcends reality. Through virtual reality technology, artists can transport the audience into a completely different time and space, allowing them to experience a transcendental passage of time. The audience can feel the acceleration or deceleration of time in the virtual reality scene, feel the distortion and dislocation of time, so as to obtain a unique and wonderful time experience. To sum up, virtual reality technology is of great significance to the manipulation and reshaping of art time. It not only provides new possibilities for artists to create, but also brings a new artistic experience to the audience. As virtual reality technology continues to evolve and innovate, we can expect more amazing digital artworks to emerge, redefining our perception and understanding of time (Liu, 2022).

5.2 Innovation and Challenge of Virtual Reality Technology to Artistic Narration

The emergence of virtual reality technology has brought new innovations and challenges to the narration of digital art. The traditional art narrative is usually presented through linear storyline and time sequence, while virtual reality technology provides a new nonlinear and interactive narrative way. This new way of telling not only changes the role and experience of the audience, but also brings more creative possibilities to the artist. First, virtual reality technology enables the audience to actively participate in the narrative of the work of art. Traditional audiences usually passively accept the narrative of the work, while virtual reality technology gives the audience the ability to actively choose and explore. The audience is free to move and interact in the virtual space, exploring different elements and story lines in the work according to their own interests and curiosity. This sense of participation and interactivity enables the audience to understand and experience the art work more deeply, and also provides more creative space for the artist. Secondly, virtual reality technology provides more expression means and ways for artistic narration. Traditional art narratives often rely on mediums such as text, images and sound to convey story lines and emotional expression, while virtual reality technology creates immersive experiences through three-dimensional vision, stereo sound and haptic feedback. The audience can enter the

virtual space through virtual reality glasses or devices, interact with the virtual scenes and characters in the work, and feel a more real and immersive art experience. This multi-sensory way of expression provides artists with more means of expression, making the artistic narrative more vivid, intuitive and powerful. However, virtual reality technology also brings some challenges to artistic narrative. First of all, the application of virtual reality technology requires corresponding hardware equipment and technical support, which may not be popular and acceptable enough for some viewers. Secondly, the creation and production cost of virtual reality technology is relatively high, and there may be a certain threshold for some artists. In addition, the use of virtual reality technology also needs to pay attention to the impact on the physical and mental health of the audience, to avoid discomfort and negative effects. To sum up, the innovation and challenge of virtual reality technology to artistic narrative can not be ignored. Through virtual reality technology, the art narrative becomes more interactive, immersive and diversified, the audience can more deeply participate in and experience the art work, but also provides artists with more creative space and expression. However, the application of virtual reality technology needs to be further popularized and improved, and attention needs to be paid to the protection and attention to the physical and mental health of the audience.

5.3 Impact of Virtual Reality Technology on Audience's Time Perception

The emergence of virtual reality technology has changed the audience's perception and experience of time, bringing a whole new dimension to digital art. Traditional works of art are usually static, and the audience can only feel the artist's creation through static pictures or sculptures. However, virtual reality technology can bring the audience into the virtual art space and make them participate in it personally, thus changing their perception of time (Fan, 2022). First, virtual reality technology breaks the time limit between the viewer and the work of art. Traditional works of art are usually static, and the viewer can only appreciate the work through a glimpse of time. However, virtual reality technology is capable of creating dynamic art experiences that allow the viewer to interact with the work for a longer period of time. The audience can enter a virtual art space through virtual reality equipment, in which time is stretched out and the audience can freely explore the details and connotations of the art work. Second, virtual reality technology can change the viewer's perception of the passage of time. In traditional art exhibitions, the audience usually stands in a fixed position to watch the works, and the sense of time passing is more obvious. However,

in the art experience of virtual reality, the viewer is free to move and shift perspective, and the sense of time passing is blurred and prolonged. The audience can choose to stay in a certain scene or move on according to their own wishes and interests, and this freedom makes the audience's perception of time more flexible and diversified. Finally, virtual reality technology can also create a non-linear time experience. Traditional works of art are usually linear, with the viewer viewing the work in the order in which the artist created it. Virtual reality technology can provide non-linear time experience for the audience, and the audience can freely choose the order and way to browse the works according to their own interests and needs. This nonlinear time experience enables the audience to participate more actively in the creation of art, thus enhancing the viewing value of art works. To sum up, the impact of virtual reality technology on viewers' time perception is significant. It breaks the time limit of traditional works of art, changes the viewer's perception of the passage of time, and creates a non-linear time experience. These changes enable audiences to engage more deeply with digital art, enhancing the enjoyment and experience of viewing. As virtual reality technology continues to evolve, we can expect it to bring more innovation and breakthroughs in the field of art.peroration.

6. PERORATION

6.1 Research Summary

In this study, we explore the spatial and temporal redefinition of virtual reality technology in digital art. Through a comprehensive analysis of the historical development and application of virtual reality technology, we find that virtual reality technology has the ability to expand and reconstruct art space, which can bring new possibilities for art creation. At the same time, virtual reality technology can also manipulate and reshape art time, creating a different time experience from traditional art forms. In the process, virtual reality technology provides a richer and more immersive art experience for artists and audiences. Through the study of contemporary aesthetic thinking and digital art, we find that virtual reality technology plays an important role in contemporary aesthetic thinking. As a new form of artistic expression, virtual reality technology blends with traditional aesthetic concepts and jointly promotes the development of digital art. The space redefinition of virtual reality technology enables artists to create freely in the virtual world, and brings immersive art experience to the audience. The time redefinition of virtual reality technology breaks the

bondage of linear time and makes the narrative of art works more diversified and flexible. The audience is free to explore the flow of time in the work, interact with the artwork and engage with it. However, the application of virtual reality technology in digital art still faces some challenges. First of all, the cost of the technology and the limitations of the equipment limit the popularity and promotion of virtual reality art works. Secondly, the rapid development of virtual reality technology also brings some ethical and legal issues, such as privacy protection and intellectual property rights. In addition, the application of virtual reality technology also needs more artists and audiences to deeply understand and explore it. In the future research, we can further explore the application of virtual reality technology in other aspects of digital art, such as the combination of virtual reality and augmented reality, and the integration of virtual reality and traditional art forms. At the same time, we can also delve into the impact of virtual reality technology on artistic creation and audience experience, and find more effective ways to solve technical and ethical problems. Through these efforts, we can further promote the development of virtual reality technology in the field of digital art, bringing a richer and more diverse art experience to artists and audiences."

6.2 Research Prospects

The combination of virtual reality technology and contemporary aesthetic thinking brings new possibilities and challenges to digital art. However, there are still some limitations and deficiencies in the current research, which are worthy of further exploration and research. First of all, the development of virtual reality technology still faces some technical and hardware limitations. For example, virtual reality devices have a higher cost and may be less accessible and experiential for the general audience. Therefore, future research can explore more convenient and low-cost virtual reality technology to promote the popularization and development of digital art. Secondly, the application of virtual reality technology in artistic creation needs to be further deepened and expanded. At present, virtual reality technology is mainly used for the display and viewing of art works, but also rarely involves the practice of artists in the creation process. Future research could explore how virtual reality technology can be integrated into all stages of artistic creation to provide a richer and more diverse creative experience. At the same time, the impact of virtual reality technology on audience experience and participation also needs further research. Virtual reality technology creates a more immersive art experience for the audience, but it also brings some problems such as low audience

participation or increased sense of distance between the audience and the work. Future research could explore how virtual reality technology can be used to increase audience engagement and interactivity, and how to balance the relationship between the audience and the work. Finally, the combination of virtual reality technology and contemporary aesthetic thinking is not limited to the field of digital art, but can also be extended to other fields, such as movies, games, etc. Future research could explore the application of virtual reality technology in other fields and further explore the relationship and impact of virtual reality technology on contemporary aesthetic thinking. In short, the combination of virtual reality technology and contemporary aesthetic thinking has brought new exploration directions and development opportunities for digital art. Future research can be carried out from multiple aspects such as technology, creation, audience experience and cross-domain to drive innovation and development of digital art.

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