The Application Research of Music Interaction to Promote the Realization of Healing Function in Tourism Scenes

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Abstract: Tourists are the main body of tourism experience and tourism place is the field of tourism experience. Tourism healing is the effect embodied by the interaction between tourists and tourism field. The use of music interaction to enhance the immersion of tourists in the tourism scene can promote the realization of the healing function, which is conducive to enhancing the satisfaction of tourists and driving the high-quality development of tourism. This paper analyzes the logical relationship between music interaction and the realization of the healing function of tourism scene from the beginning of music interaction technology, combines with scene theory and explores the application path analysis of music interaction to promote the realization of the healing function of tourism scene from the four dimensions of physical elements, social elements, social symbols and natural elements.

1. Introduction

With the opening of the universe, wisdom tourism will become the development trend of future tourism. The single sightseeing tour makes the tourists appear aesthetic fatigue and the phenomenon of decreasing interest. It is worthwhile to investigate how to use music interaction technology in tourism scenarios. This kind of scene will make tourists immersive and enhance their emotional style experience. In addition, it can increase the fun and diversity of the tourism scene, thus playing the healing function of tourism. The core concept of music interaction design lies in the thinking of "user experience". From the perspective of tourists, the tourism scene constructs the function of emotional experience and transforms the intangible music into tangible visual products. At the same time, this atmosphere can mobilize the visual, auditory and sensory senses of tourists, so as to drive tourists into the rhythmic world of music and perceive the melody of music.

The term "experience feeling" was coined by Eugene Gendlin in his book Focusing on the Mind. The fullness of our experience through "experiencing feelings" can bring light to the resolution of our traumas. Every hurt that is embedded within a life contains seeds of healing and renewal[1]. Many people travel in search of a happier experience. From the perspective of psychology, tourism is the dynamic behavior of people to compensate for a certain psychological lack. They make up for the lack of daily pattern life through the change of life scene. The beauty and experience of travel can be a source of happiness for us and promote our psychological growth. The beauty and
experience in travel will become the source of our happiness and promote us to achieve psychological growth\[2\]. Professor Xie Yanjun pointed out that the fundamental drive of tourism is scarce compensation and self-realization\[3\]. According to the theory of Maslow's hierarchy of needs proposed by humanistic psychologist Abraham Maslow, the theory of tourism hierarchy of needs proposed by tourism psychologist Philip Pearce, and the theory related to the study of tourism experience by Professor Xie Yanjun, the kinetic model of tourism behavior is constituted. That is, due to the lack of tourism drive compensation, travel motivations such as wanting to obtain pleasant experience, returning to nature, identifying with culture, relaxing and healthy and realizing oneself are generated, then the reasons for "going to travel" are tested in tourism practice \[3-5\]. Through the model of tourism dynamics, people get a good tourism experience in the tourism scene and realize the healing function of tourism.

The post-epidemic tourism market has a huge potential and a strong demand for high-quality tourism experience. Numerous tourists use tourism activities to relieve stress, relax and promote personal growth. Professor Yang Zhenzhi proposed two dimensions of the connotation of high-quality tourism development and the concept of "tourism healing". He combined empirical research and related cases to summarize the theoretical value and social significance of tourism healing research. He believes that tourism healing is an important driver to promote the high-quality development of tourism. The healing function of tourism improves the quality of human life and ultimately returns to the value of human existence\[6\].

The tourist destination is the field for tourists to experience and perform. The word "value" reflects the satisfaction of the object attributes and functions of the subject needs. It is the expression of the relationship between the subject and the object\[7\]. Tourism activities are the interactive process between tourists and the physical, social, social symbols and natural scenes of the tourist destination\[8\]. The tourism scene is the sum of concrete and virtual spaces. Scene has an important influence on tourists' sightseeing behavior and consumption behavior\[9\]. The important significance of tourism is that tourists can get the healing value from the tourism scene. How to shape various elements of the tourism scene to realize the tourism healing function is to improve the happiness, satisfaction and willingness of tourists to visit again, and to develop high-quality tourism, which is a problem worthy of high attention. With the help of scene theory, this study explores the realization path of the healing function of music interaction to promote tourism scene, with a view to enriching the theoretical foundation of tourism discipline. It is of practical significance for improving the quality of tourists' experience and developing high-quality tourism.

2. Literature Review

2.1 Music Interaction

With the rapid development of high-tech technology and digital music technology, music interaction, as an independent branch of combining art and information technology, gradually becomes a hot topic. Entering the keyword "musical interaction" on the CNKI (Chinese National Knowledge Infrastructure) database, the number of related literature is very small. Music interactive technology has been widely used in education, smart phones, computers, games, restaurants, cars and other aspects. However, the application in the tourism scene is not common, mainly used in interactive amusement parks, scenario-based theme parks, scenario-based performing arts three types of tourism products.

Music interactive technology is often used in multimedia teaching and music teaching, but it is not widely used in the field of tourist attractions. In addition, the domestic virtual exhibition hall is accepted by more and more people, and there are many excellent cultural display products. However, these cultural products are mostly based on museums or science and technology exhibition halls. Their exhibition theme and form are relatively simple. They are usually displays and introductions of physical objects, lacking intuitive experience of music and immersive
In foreign countries, interactive technology has been applied in many places. ECCO, a Danish shoe company, has designed an interactive transnational art display space at Bredebro (DK). The interactive installation by architect and theater designer Anne Patterson shows the artist's unusual ability. The Japanese interactive lighting installation art design team Team Lab has designed a romantic lighting forest that can react to the human body. They also designed a lamp post called Message Pillar, which can see various words of different shapes around it through a specific phone APP. The "resonating spheres" exhibition features huge luminous spheres that can change light colors and sound with the human body. SAGAYA ginza designed an immersive "sensory restaurant".

In western art practice, interaction design has been widely used in shopping malls, restaurants, exhibitions and other aspects, but there are not many areas of music interaction design exploration. Music and visual sound, as an emerging, budding, energetic and experimental new art, have frequently appeared and gradually emerged. This avant-garde "sound art", coupled with colorful visual images, brings viewers an extraordinary immersive sensory experience. How to dig music interaction technology application in tourism scene has deep research significance.

2.2 Tourism Scenes

A scene is a place that is limited to a certain function. A field is an occasion which represents a fixed space. A scene is a field and a sight. It is also a scenario. The concept of "scape" was first proposed by Kotler (1973), which refers to a carefully designed external environment in order to induce specific emotions of consumers and then influence consumer behavior. Later, "-scape" was used as a suffix to describe the various environmental characteristics of different industries. The scene itself is a kind of spatial link, the ultimate goal is to realize the connection of people, which brings users a superior scene experience and creates real value. With the development of the tourism economy, the scene is the core competitiveness of the tourism industry to build a brand. Tourists in the tourist destination are the people in the tourism scene that we pay attention to. Creating a tourist destination scene centered on tourists can better realize the scene experience and give play to the value of tourism experience. Pierre Bourdieu, a famous contemporary sociologist, put forward "field theory" in his book Practice and Reflection: An Introduction to Reflective Sociology in the 1990s. He defines a field as a network, or a configuration, of objective relations that exist between various positions. Bitner put forward "service scenes", including atmosphere elements, spatial layout and function, logo, symbol and handicraft three dimensions. In the 21st century, a research team represented by Terry Clark, a tenured professor at the University of Chicago, formally proposed a new paradigm of urban research, "scene theory". According to this theory, the scene is a space with symbolic significance formed by various consumption practices, including five elements: space, material, crowd, combination and value. Scene theory provides a new theoretical tool to promote the upgrading of traditional model, urban transformation and the transformation of development power. What's more, it provides a new comprehensive perspective for studying the driving role of culture on political, economic and social evolution. Tourism scene refers to the destination environment elements that can have an impact on the psychology and behavior of tourists, including physical elements, social elements, social symbol elements and natural elements.

Through the CNKI database, the literature exploration of tourism scenes mainly focuses on six aspects: tourists, tourism destination, relevant national policies and historical background, scene classification, tourism products and technology application, and basic theory level. However, there is a paucity of literature dealing with the realization of the healing function of tourism, so it is particularly important to explore this field.
2.3 Tourism Healing

The research of the British philosopher Broad (1887-1971) clearly points out that human consciousness may play a healing role, and the effect is particularly large[17]. Natural healing first began in 1980, and American scientist Roger Ulrich pioneered the resilience of natural elements in an empirical way. American environmental psychologists Rachel and Stephen Kaplan highlighted the natural healing function of nature in their 1989 experiment with the "Attention Recovery Theory" (ART). Japan has built a number of forest bases featuring natural healing[18]. Geisler, a medical geographer, first proposed the concept of "therapeutic landscape" [19]. The purpose is to explore the healing effects from the landscape concept of new cultural geography[20]. Gesler believes that the rehabilitation landscape should include a combination of environmental, individual and social factors. The healing value of the environment is understood from a macroscopic perspective, and it is included in the scope of medical geography. Environmental psychologist Ulrich (1999) proposed that rehabilitation gardens should be dominated by a large number of real natural environmental elements, such as green vegetation, flowers and water bodies. Clare emphasized that a restorative garden should bring healing or health benefits to the vast majority of its users (Marcus, 1999)[21].

Travel is an option for self-healing. Tourism healing, as a new concept of travel, refers to a kind of therapy that helps people relieve stress, adjust emotions and improve physical and mental health through travel. It is based on the health, happiness and relaxation effects of travel. It usually involves visiting scenic spots with beautiful environments and fresh air, experiencing the feeling of being one with nature, and using the pleasant experience of travel to promote health. It can help people reduce stress, anxiety, and depression associated with everyday life. The purpose is to promote people's physical and mental health through travel, as well as improve their quality of life. Different from traditional tourism, tourism healing pays more attention to the depth and content of the experience. And it strives to provide travelers with a more harmonious, calm and healing environment and experience.

The theme distribution of tourism healing in tourism is explored through CNKI database, which mainly covers tourism planning and design, health tourism, rural tourism, forest recuperation, landscape planning, forest recuperation, space design, health tourism, horticultural therapy, natural healing landscape, rehabilitation landscape, experiential tourism, medical tourism and other aspects, involving a wide range of aspects. But very few involve musical interaction.

3. Technical Means of Music Interaction and Healing Function of Tourism Scenes

3.1 AI Technology

AI (Artificial Intelligence) is a theory, method, technology and application system that uses digital computers or machines controlled by computers to simulate, extend and extend human intelligence, perceive the environment, acquire knowledge and use knowledge to obtain the best results. The recognition function, data function, language processing function, algorithm and other technologies of AI technology can be combined with music and projection to apply to the tourism scene. AI provides support for music interactive application scenarios. The development and progress of computer vision, machine learning, natural language processing and intelligent speech provide a combination of virtual and real appearance for music interaction, making music interaction with diversity and immersion.

3.2 Music Interaction Technology

Interactive technology, also known as interactive design, is the practice of designing interactive digital products, environments, systems and services. The interaction design based on emotional
experience fully considers the needs of human nature and satisfies them to achieve the spiritual function of the products, so that the products can have a wide range of interactions with people and have good "affinity", which make people more happy in the process of using the products. Emotional interaction design can be explored from the aspects of facial expression, speech emotion, body behavior emotion, physiological signal emotion recognition, text information emotion, etc.

Music interactive technology is the use of physical environment and digital information interaction behavior. It uses AI music generation tools to combine human voice, expression, eyes, gestures, pace and other information with music rhythm, tune, harmony, strength, speed, mode, form, texture, so as to generate new music. Using the temporal and spatial characteristics of music, the notes burst out of the sheet music and filled people's hearts in the form of physical space. This product can utilize the display screen equipped with somatosensory detection equipment to detect the movements of the experiencer's limbs, and transmit data through inertial sensing to capture the parameters of dynamics, force, and magnetic field. It communicates data by capturing images through optical sensing. In addition, it also senses by combining two or more sensors in the associative sensing. The product ultimately uses the melody and beauty of music to make people perceive different spatial relationships, as well as the constant changes and ups and downs of music over time. In the end, the melody and beauty of music in the space can make people perceive different spatial relationships. So that tourists can start from the sensory experience, interactive experience and cognitive experience, and bring people a strong sense of immersion. In terms of interaction design, through simple gestures and pace interaction, it is transformed into the flowing melody and fascinating plot of the virtual world, giving music new life and dynamic sense of space, mobilizing people's senses in multiple dimensions and creating more contact points, so as to improve user experience and create new interaction and amusement scenes.

3.3 Music Interaction Promotes the Realization of Healing Function in Tourism Scenes

Tourism scenes can create happiness value for tourists and solve the functional needs of practical problems by empowering, empathetic and meaning. It can realize the emotional needs of pleasure and the symbolic needs of obtaining the meaning of life\[8\]. According to Mehrabian & Russel (1974), the "Stimulus-Organism-Response" (SOR) model was proposed\[22\]. When tourists are stimulated by certain environmental elements, the body will produce inner reactions, which has an impact on the behavior of tourists. From the perspective of human travel development research, the study of experiential travel, especially the pleasant experience of journey and destination, has become the research object and the core content of modern tourism science\[23\]. For the pursuit of pleasant physical and mental experience, tourists choose to enter the tourist field from the living field. In the process of traveling in the tourist resort, tourists will produce changes in emotional energy. Tourists' happiness from the process of tourism mainly comes from the subject satisfaction (sense of pleasure, withdrawal and presence) and the subject realization (sense of gain, movement and ritual), while satisfaction belongs to the intersection of the two\[24\]. Only when tourists get positive emotional energy experience in the tourism scene, can they obtain happiness and realize tourism healing. The concept of enabling places calls on people to actively build the healing of the material, social and feeling resources of daily attention, and allocate them to different tourist places to promote the health and healing experience of tourists\[25\]. The natural factor healing method is used to create the healing landscape in the tourism scene. And the comfortable natural environment is used to strengthen the senses and perception of tourists, adjust the mental and emotional state of tourists, help tourists heal the spiritual trauma, and bring pleasant feelings to people\[26\]. The integration of natural healing can be realized from three levels of environmental perception healing, practical experience healing and cultural spiritual healing, which is embodied in introducing the landscape environment with healing function, increasing the interactive healing with nature, and feeling the culture\[18\]. After tourists return to the living field from the resort, the positive and unforgettable travel experience will produce positive emotions and a sense of meaning, improve
personal happiness, and play a healing role in the memory\textsuperscript{[27]}. The cure is that the inducement of tourism behavior is mostly triggered by specific events, and the travel motivation is mostly emotional healing, strong travel intention, travel demand, and diversified healing effects of tourism\textsuperscript{[28]}. The healing function of tourism is generally manifested as physical healing and psychological healing. According to Collins's "interactive ritual chain" theory and Freudian psychoanalytic theory's "Libido" analysis, emotional energy is a desire to participate in social interaction and gain membership. And the pursuit of emotional energy is a self-satisfying behavior\textsuperscript{[29]}. Music not only has a positive role in identity and sense of belonging, but also it is important in contemporary tourism and human cultural exchanges\textsuperscript{[30]}. Through music interaction, tourists slowly increase their emotional energy from low intensity to medium intensity or even high intensity emotional energy in the tourist field, so as to realize self-satisfaction and healing.

4. Application of Music Interaction in Tourism Scenarios

4.1 Realize Tourism Healing from the Level of Physical Elements

Tourism scene is a complex, and environmental elements are crucial. When designing scenes, we need to consider how to shape the environmental elements to enhance the positive mood of tourists. We can create different musical backgrounds for different tourist scenes through introducing interactive design concepts. In addition, we can use digital media technology, sound, liquid aerosol, light and shadow effects, mechanical drives and other technologies to create a complete three-dimensional picture. The background music changes as the picture changes, which can engage people's senses in multiple dimensions and create more touch points. So that tourists can be immersed in the scene, so as to improve tourists' experience and create new scenarios for interaction and consumption. We can use animated dramas, interactive games, personalized and customized music, and many other strategies to digitally develop and transform the cultural resources of scenic spots. For example, the museum uses 360° panoramic technology, virtual reality technology, music interaction technology and other interactive music games to set up virtual scenes, create advanced interactive experience, creation and challenge experience projects for the audience in the space created by high-tech. By exploring the new development of the interactive integration of tourism scenes and music, they will comprehensively enhance the tourists' immersive experience and help visitors to have a healing and special meaning experience in the travel scene.

4.2 Realize Tourism Healing from the Level of Social Elements

The social elements of tourism places mainly revolve around tourists. Most importantly, we need capture the core and potential needs of tourists. We can create a relaxing and comfortable music atmosphere for tourists to bring a better sense of healing emotionally or psychologically. What’s more, we can use big data to infiltrate the preferences of different tourists into the tourism scene, so as to cultivate their habits. Personalized and diversified services will be provided according to the exact needs of visitors. For example, different music will be played for tourists' birthdays or special holidays. In addition, we can use music interactive technology application scenarios to promote the digitalization of scenic spots. Such as panoramic music roaming, holographic music projection, Bluetooth music interaction, music interactive experience and so on. It will provide tourists with technological and immersive services to realize the healing effects of tourist destination.

4.3 Realize Tourism Healing from the Level of Social Symbolic Elements

The social symbolic elements of the tourist destination mainly consider the collective culture of the tourist destination. In the process of tourism, the local folk customs and cultural customs will cause the emotional changes of tourists' hearts, and construct the self-identity of tourists. Tourists
may have a certain sense of participation, immersion, belonging and other emotional connections with some social elements, such as local scenery, symbols or handicrafts, so as to establish a deep emotional relationship with the tourist destination, improve the emotional energy, and achieve the healing effect. In the process of creating tourism scenes, the music interaction will be connected with local culture and handicrafts, giving more story plots and meaning, and driving the emotional perception of tourists. Different festivals and customs are used to create different modules of tourism music scenes to provide personalized needs for tourists with different preferences. For different customer groups such as parent-child tours, music interactive technology, intelligent body music with light and shadow technology can be created to different styles of nighttime light shows or interactive game projects in tourism scenes to increase tourists' sense of participation and scene.

4.4 Realize Tourism Healing from the Level of Natural Elements

The natural elements of the tourist site scene mainly consider the local natural environment. As a carrier, the tourism scene provides a material space environment for tourists' healing activities. Tourists are happy in the music interaction, forgetting the troubles of life, feeling the connection with all things in the space, and thus realizing the value of tourism and the meaning of life. The tourism scene should mobilize the multi-sensory experience of tourists, and music advocates returning to the beauty of nature and restoring the positive energy and positive emotions of tourists. The relevant equipment of music interactive device will be added in a certain area of the tourism scene. When the tourists enter the venue, the relevant technical equipment can capture the tourists' audio, gestures, actions, etc., and then create new visual music. Visitors will then enter a new and interesting music scene and experience music in a sensory immersion way. Interactive technologies such as speech recognition, image recognition, eye movement recognition, touch technology, action recognition, big data and natural semantic analysis are used to integrate music into tourism products. The color changes will synchronize with the music along with the changes of people's movements, and the scene theme will be integrated with the culture of the scenic spot. Music interactive design of tourism products can provide different levels of challenge to meet the needs of different groups of customers. The venue can be set indoors or outdoors, and can even be expanded to cover the entire scenic area. We do this by creating a unique world of music that immerses the visitor in a mind-flow experience. Different tourist venues will be equipped with different backgrounds of music. The music will be available for visitors to choose and change. A restaurant or theme park can be equipped with music interactive devices to increase the interaction and immersion of visitors with the surrounding environment. Artificial water bodies such as fountains and swimming pools in horticulture can be added with varying lighting and soothing music devices with running sounds to create spaces with emotional resilience and stress relief, bringing healing experiences to visitors.

5. Conclusion

With the development of high technology, the integration of multiple disciplines and the development of public health, it is particularly important to explore the field of smart scenic spots and tourism healing. There is a complete theoretical system of domestic research on tourism experience and tourism scene, but there are not many studies on tourism healing function. This paper explores the development and application of music interaction technology based on scene theory and existing literature. What’s more, combined with the realization of tourism scene healing function, this paper probes into the realization path of tourism healing function from the four elements of tourism scene, in order to bring some ideas for the development of health geography and high-quality tourism.
References