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A Study on the Immersive VR Translation Design of Classical Texts from the Perspective of Embodied Cognition Theory: A Case Study of *Zaojing*

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Abstract: Classical landscape texts construct an Eastern aesthetics of realm-making through expressive writing. Their fusion of scene and emotion creates an artistic conception marked by ambiguity, negative space, and emotional metaphor. Traditional reading relies on the audience's one-way imagination, which can lead to shallow experience and homogenized cognition. To achieve the precise revitalization and immersive translation of classical textual artistic conception, this study takes embodied cognition theory as its core framework. It integrates modern design theories, including immersive experience design, digital semiotic translation, environmental storytelling, and emergent narrative design. Supported by VR technology, the study uses the original project Zaojing as its primary practice-based case. It explores innovative design pathways for the digital realm-making of classical texts. Using The Story of the Little Stone Pond as the textual carrier, this study constructs a VR translation design system for classical texts. The system is organized around four dimensions: theoretical coupling logic, text-tracing interaction mechanisms, dual-ending emergent narrative construction, and immersive scene implementation. It follows the design logic of "theoretical empowerment—semiotic translation—interaction-driven experience—narrative sublimation." The project translates textual symbols into a four-dimensional dynamic aesthetic space through differentiated text-tracing interactions. It also adopts a dual-ending structure that combines the original narrative with a secondary creative narrative. In addition, its open-ended emergent narrative design expands the interpretive possibilities of the text. This approach breaks away from the single paradigm of digitally replicating classical texts. Through a complete practice-based project, this research verifies the feasibility of the proposed design logic. It offers an implementable and extensible design paradigm for immersive classical literature design, Chinese-style digital realm-making, digital applications in Chinese classics education, and the upgrading of immersive cultural tourism experiences.

Keywords: Embodied cognition; Classical texts; VR immersive design; Realm-making design; Semiotic translation.

1. Introduction

Chinese classical texts are core carriers of China's outstanding traditional culture. Among them, landscape travel writings use highly concise language to outline natural scenery and convey literati aesthetic sensibilities. They embody a distinctive Eastern realm-making aesthetic and spatial philosophy.

As a classic work of Tang-Song landscape travel writing, The Story of the Little Stone Pond depicts spatial images such as pond water, strange rocks, swimming fish, and bamboo groves with delicate brushwork. It constructs a distinctive artistic conception that is cool, ethereal, quiet, and profound. It has therefore become a typical model of spatial realm-making aesthetics in classical texts.

However, the artistic conception of classical texts is generated through written symbols. It is therefore highly abstract and subjective. Traditional communication modes, such as print-based reading and illustrated interpretation, can only support textual cognition at the visual level. Audiences cannot physically enter the textual space or perceive its atmospheric qualities. As a result, it is difficult for them to achieve an embodied understanding of the text's deeper aesthetic meanings and literati emotions. This leads to superficial and fragmented communication of classical literary artistic conception.

With the rapid development of digital technologies such as the metaverse and virtual reality, immersive digital communication has become a key pathway for revitalising traditional culture. VR technology offers three core advantages: three-dimensional spatial construction, immersive interaction, and multisensory perception. These advantages break the flat limitations of traditional textual reading. They can transform abstract textual imagery into a perceivable, enterable, and interactive three-dimensional spatial environment.

At the same time, embodied cognition theory challenges the logic of traditional disembodied cognition. It emphasizes that cognition emerges from interaction between the body and the environment. This provides a solid theoretical foundation for immersive perception of textual artistic conception. On this basis, combining embodied cognition theory with VR immersive technology offers an important breakthrough. It can help address the difficulty of deep communication in classical texts and support the contemporary revitalisation of traditional aesthetics.

Current digital communication and teaching applications of classical texts still show clear experiential gaps and design homogenisation. Most digital products for classical Chinese texts remain at a shallow level of revitalisation, such as text-image explanation, animated demonstration, and fixed panoramic tours. They often overemphasise visual replication while neglecting experiential logic. They also prioritise textual interpretation over artistic conception and one-way output over user participation.

In primary and secondary education, as well as in cultural tourism communication, traditional learning modes for

classical Chinese are often obscure and abstract. Audiences struggle to intuitively perceive the spatial layers and literary emotions of landscape texts. There is therefore a significant lack of immersive, interactive, and conception-orientated design products.

Meanwhile, current Chinese-style VR immersive design often relies on fixed linear narratives and single interaction modes. It rarely responds to the expressive aesthetic features of classical texts, including the interplay of virtuality and reality, the fusion of scene and emotion, and suggestive expression. As a result, it cannot fully support a personalised experience or aesthetic sublimation of classical textual artistic conception.

In response to this industry context and these application pain points, the VR immersive design project Zaojing takes The Story of the Little Stone Pond as its textual carrier. Grounded in embodied cognition and modern digital design theory, it addresses the shallow experience, rigid narrative, and limited interaction of current classical-text digitisation. The project aims to develop an implementable and extensible immersive realm-making design solution for classical texts.

By deeply integrating cognitive psychology, Eastern realm-making aesthetics, and modern digital design, this study enriches the theoretical framework for the digital revitalisation of classical texts. It also provides theoretical support for similar Chinese-style immersive design projects.

2. Current State of Research in China and Abroad

2.1. Research in China

In China, digital design for classical texts remains largely limited to shallow forms of revitalisation. These include static scene reconstruction, animated narration, and text-image visualisation. Most VR-related studies focus mainly on the accuracy of 3D modelling and the effects of visual rendering. They lack in-depth design of users' embodied experience, interaction semantics, and narrative structure.

At the level of immersive narrative design, existing Chinese-style digital projects mostly adopt fixed linear narratives. They rarely provide branching choices or differentiated experiences. As a result, they cannot fully respond to the aesthetic features of classical texts, especially their negative space and expressive suggestiveness.

Moreover, most studies have not established a clear correspondence among textual symbols, bodily interaction, and the generation of artistic conception. Few people translate traditional brush-and-ink aesthetics into a modern VR interaction language. A mature and implementable design paradigm for dual-ending emergent narrative realm-making has not yet been established. This is also the core issue that the Zaojing project seeks to address.

2.2. Research Abroad

Abroad, theories of immersive embodied design, emergent narrative design, and interactive spatial generation have developed relatively mature systems. Digital games, immersive performances, and interactive narrative product design have widely applied these theories. These fields have also formed well-established systems for technical implementation and experience design.

However, Western immersive design systems are often grounded in realistic aesthetics, logical narration, and objective spatial construction. These principles differ from the expressive aesthetic logic of classical Chinese texts, which emphasizes the fusion of scene and emotion, the interplay of virtuality and reality, and realm-making through the mind. Therefore, Western approaches cannot fully accommodate the emotional metaphors and negative spaces inherent in the artistic conception of classical Chinese texts.

For this reason, they are difficult to apply directly to the translation design of artistic conception in classical Chinese texts. The Zaojing project responds to this limitation. Based on the characteristics of Eastern aesthetics, it develops an innovative practice of localised, immersive realm-making design.

3. Virtual Reality Technology and the Embodied Cognition of Classical Textual Imagery

3.1. Embodied Cognition Theory and the Core of Immersive Experience

Embodied cognition theory is a new cognitive theory that challenges the traditional paradigm of disembodied cognition. Its core premise breaks away from the misconception that cognitive activity is independent of the body and the environment. It defines cognition, the body, and the environment as a dynamically coupled organic whole.

The body is the central medium and carrier through which cognition is generated. Through sensory perception, bodily movement, and environmental interaction, it receives and processes external information. It then forms aesthetic cognition and emotional experience. The environment provides the situational carrier for cognitive and aesthetic formation. Together, these three elements complete the full process of cognitive construction. This theory therefore provides a core cognitive foundation for immersive experience design.

Immersive experience is the central value of VR digital design. Its design essence lies in using digital methods such as three-dimensional spatial construction, panoramic visual enclosure, spatial soundscape design, and real-time interactive feedback. These methods reduce interference from the physical environment and construct an independent virtual aesthetic scene. They allow audiences to form a sense of presence that integrates body and mind.

From the coupled perspective of design studies and cognitive studies, VR immersive design closely aligns with the core principles of embodied cognition. Traditional flat textual reading is a typical mode of disembodied cognition. Audiences receive written symbols only through vision, while the body remains passive and static throughout the process. As a result, aesthetic cognition becomes shallow and fragmented.

By contrast, VR immersive spatial design takes the user's body as the central design subject. Through multidimensional sensory construction, free interaction design, and dynamic scene-making, it enables deep integration among the user's body, aesthetic cognition, and the virtual environment. In this way, it constructs a complete embodied aesthetic experience.

Compared with the shallow cognitive mode of traditional flat reading, VR immersive experience design based on embodied cognition has three core design features:

multisensory perception, interactivity, and presence. It fundamentally changes the audience's passive reception of textual information. The audience becomes an active aesthetic subject that explores and constructs meaning. This enables them to truly perceive the Eastern aesthetic core of classical texts, where scene and emotion are fused. It also realises an upgraded reconstruction of the classical textual aesthetic experience.

3.2. Spatial Characteristics of Artistic Conception in Classical Texts

The core aesthetic value of Chinese classical landscape travel writing does not lie in the completeness of textual narration. Rather, it lies in the expressive spatial artistic conception created by its system of written symbols. Unlike the logic of Western realistic spatial design, the artistic-conception space of classical texts has four major aesthetic features: ambiguity, negative space, emotionality, and narrativity. These features also serve as the core principles for the VR realm-making design in this project.

First, classical textual artistic conception is characterised by ambiguity. Classical texts use highly concise language to outline landscape imagery. They do not seek precise, realistic representation of object details. Instead, they create an overall atmosphere through the combination of images. For example, in The Story of the Little Stone Pond, the phrase describing "about a hundred fish in the pond, all seeming to swim in empty space with nothing to rely on" does not provide precise measurements or exact quantities. Through expressive written symbols, it constructs an ethereal and clear pond space. This leaves ample room for the audience's aesthetic imagination and aligns with the core logic of Eastern expressive design.

Second, classical textual artistic conception is characterised by negative space. Classical realm-making follows the aesthetic design principle of the interplay between virtuality and reality. Written language directly depicts landscape objects while indirectly evoking atmosphere and literati emotions. This design thinking, which integrates the tangible and the intangible, forms a distinctive Eastern system of aesthetic negative space.

Third, classical textual artistic conception is characterised by emotionality. The spatial artistic conception of landscape travel writing is not a simple replication of natural space. Rather, it is a spatial projection of the literati's subjective emotions. It is therefore a typical form of emotionally orientated spatial design. The quiet, cold, and secluded Little Stone Pond in Liu Zongyuan's writing is essentially an externalisation of the author's loneliness and melancholy after his demotion. It establishes a deep connection between spatial form and emotional expression.

Finally, classical textual artistic conception is characterised by narrativity. The spatial construction of classical texts closely follows the author's route of travel. Spatial transitions advance the narrative process at the same time, forming a dynamic spatial narrative structure. These characteristics determine that the present VR translation design should move beyond simple realistic replication. Instead, it adopts an integrated design approach that combines object representation, atmospheric construction, emotional translation, and narrative continuation.

3.3. The Translation Logic of VR Technology in the Embodied Transformation of Classical Textual Imagery

The embodied translation from written imagery in classical texts to immersive artistic conception is a three-dimensional design transformation. It moves from written symbols to spatial scenes, from static interpretation to dynamic experience, and from rational cognition to affective empathy. Informed by digital semiotic translation design and immersive experience design theory, VR technology provides comprehensive technical and design support for this aesthetic translation process. It precisely responds to the modern communication needs of classical textual artistic conception.

First, VR three-dimensional spatial modelling enables the materialised translation of written symbols. Classical texts often contain abstract written imagery. Through digital design methods such as 3D modelling, material rendering, and light-and-shadow atmosphere design, abstract written symbols can be transformed into visible, perceivable, and enterable three-dimensional objects. These include bamboo groves, pond water, strange rocks, and swimming fish. This process addresses the problems of vague imagery and fragmented aesthetic experience in traditional reading. It also completes the basic translation from written symbols to visual space.

Second, VR multisensory immersive design enables the holistic translation of artistic atmosphere. Through panoramic light-and-shadow design, spatial soundscape design, and dynamic environmental effects, VR can reconstruct the quiet, cold, ethereal, and distant atmosphere of the original text. It mobilises the audience's vision, hearing, and spatial perception. In this way, it builds a holistic immersive aesthetic experience and overcomes the limitations of single-mode textual interpretation.

Finally, VR free interaction design enables an embodied upgrade of audience cognition. Open-ended interaction design breaks the limits of the fixed reading perspective in traditional textual experience. It allows audiences to independently control their route of exploration, viewing perspective, and interactive behaviour. As a result, they can explore the virtual artistic-conception space through the body as the central medium.

Through interaction between the body and the virtual scene, audiences gradually perceive spatial layers, atmospheric changes, and narrative progression. This enables a deeper cognitive shift from understanding written symbols to perceiving the aesthetics of artistic conception. It also allows audiences to empathise with the literati's emotions. In this way, VR completes the embodied translation design of classical textual imagery.

4. Text-Tracing Interaction and the Embodied Construction of Classical Textual Artistic Conception

4.1. The Embodied Cognitive Basis of Text-Tracing Behaviour

Text tracing is a classic aesthetic practice in the close reading of classical texts and the appreciation of traditional calligraphy and painting. From the perspective of design studies, tracing is a typical body-participatory aesthetic practice. It has inherent embodied cognitive qualities and strong value for interactive experience design.

In traditional text-reading contexts, audiences trace written characters and outline textual imagery through brush-and-ink practices. Hand movements work together with aesthetic thinking in the brain. Through this process, audiences perceive and understand character structures, image forms, and textual meanings.

Compared with passive visual reading, tracing establishes a linkage mechanism between bodily movement and aesthetic cognition. It therefore provides a traditional aesthetic foundation for immersive interaction design.

In the VR realm-making design of classical texts, this study develops an innovative interaction model based on the traditional aesthetic logic of tracing. It transforms flat brush-and-ink tracing into three-dimensional virtual tracing interaction. This approach retains the embodied cognitive core of tracing while breaking through the medium-based and planar limitations of traditional tracing.

As a result, tracing is no longer merely an act of textual replication. It becomes an interactive aesthetic behaviour through which users explore and construct a three-dimensional artistic concept space. It also becomes the core interaction module that drives audiences toward a deeper embodied experience.

4.2. The Immersive Participation Logic of Text-Tracing Behaviour

The Zaojing project is grounded in participatory experience design and emergent narrative design. It reconstructs the aesthetic participation logic of classical texts. It moves away from the conventional VR design model of preset scenes and fixed experiences. Instead, it builds a dynamic pathway for generating artistic conception through bodily interaction.

The project defines text tracing as the core driving behaviour for spatial unlocking, artistic-conception progression, and narrative elevation. It establishes a closed-loop experience logic of “bodily tracing—symbolic manifestation—spatial iteration—narrative branching—artistic-conception sublimation". In this process, the audience shifts from a viewer of artistic conception to a co-creator of artistic conception and a decision-maker in the narrative.

Based on the textual layers of The Story of the Little Stone Pond, the project extracts four core interactive symbols: tan (“pond”), ji (“stillness”), yi (“movement”), and xin (“mind/heart”). These four symbols correspond to four immersive experience scenes. Each scene adopts a differentiated text-tracing interaction logic. Together, they establish a deep connection between bodily movement and textual meaning.

The first scene focuses on seeking and entering the realm. It uses tan as the core symbol. The interaction adopts a brush-writing style of tracing. Through VR raycasting, accumulated interaction duration, and state-locking code logic, the scene creates a ritual experience in which “a realm emerges as the brush touches down". After users complete the tracing gesture, fluorescent brushstrokes illuminate the space. This completes the transition from physical reality into the artistic conception of the classical text.

At the same time, the scene includes a subtle divergent path. This path is not explicitly marked. Through a speed-gain micro-interaction, it echoes the classical aesthetic experience of accidentally entering a landscape during travel. It also enriches the user’s freedom of spatial exploration.

The second scene focuses on quiet perception. It uses 'ji' as the core symbol. This scene breaks away from conventional writing-based interaction. Instead, it introduces a sand-wiping tracing method. Users interact with both hands to wipe away sand covering the stone surface. As the sand is gradually removed, the fluorescent trajectory of the character appears.

This interaction weakens active expression and strengthens silent perception. The environmental sound is also treated with restraint. Only the sound of footsteps is retained. This maximises the quiet, lonely, and secluded atmosphere of the Little Stone Pond.

The third scene focuses on movement and departure. It uses yi as the core symbol. This scene corresponds to the textual meaning that the place “cannot be stayed in for long". Through tracing interaction, users are guided from static dwelling to dynamic movement and exploration. This forms a bodily action logic that resists stillness and sustains exploration. It also enables the dynamic renewal of spatial perspective and aesthetic cognition.

The fourth scene focuses on the sublimation of mental state. It uses xin as the core symbol. This is an original secondary creative scene that elevates the project’s narrative dimension. In this scene, tracing interaction no longer serves the restoration of an external landscape. Instead, it guides users toward inward reflection. It completes the aesthetic transformation from observing external objects to contemplating the mind.

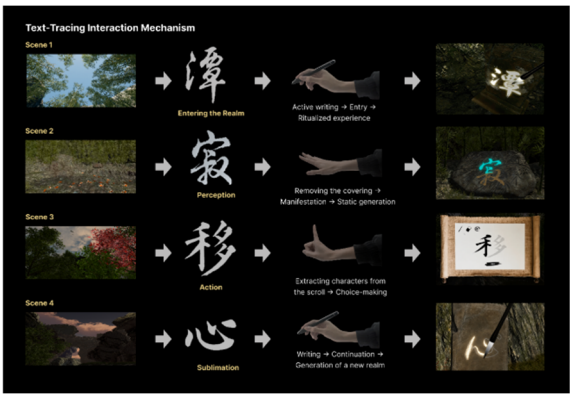

Figure 1. Text-Tracing Interaction Mechanism of “Tan,” “Ji,” “Yi,” and “Xin”

5. Embodied Generation of Artistic Conception through the Dual-Ending Narrative of The Story of the Little Stone Pond

5.1. Analysis of the Spatial Narrative Features of The Story of the Little Stone Pond

The Zaojing project strictly follows the textual structure of *The Story of the Little Stone Pond*. It constructs a two-layer narrative foundation and incorporates the logic of modern emergent narrative design. In this way, it forms a dual-ending narrative system that combines a “fixed textual narrative” with a “user-driven emergent narrative".

The first three scenes closely follow the original travel route and emotional logic of the text. They make a realistic translation of the text’s artistic conception. The fourth scene builds on the atmosphere of the original text and introduces an original secondary creative elevation. It breaks through the

limits of the original ending. Through users' interactive choices, it generates differentiated endings. This approach addresses the problems of fixed narration and limited aesthetic sublimation in traditional digital experiences of classical texts.

First, the project adopts a physical travel-route narrative design. The original text unfolds according to the author's actual route of travel. It forms a complete spatial sequence: hearing the sound of water, cutting through bamboo to make a path, seeing the small pond, observing the pond scenery, looking toward the stream banks, sitting beside the pond, and finally leaving.

The overall spatial perspective moves from far to near and from partial views to the whole scene. Its spatial layers are clear, and its narrative logic is coherent. This constructs a realistic landscape travel narrative. It also provides direct textual support for route planning, node design, and pacing control in the VR three-dimensional space.

Second, the project incorporates a narrative design that implicitly progresses through emotional stages. Beneath the realistic landscape narration, the text contains a complete emotional trajectory. This forms an independent emotional narrative line and represents a typical narrative mode in which scene and emotion are fused.

When the author first encounters the pond, he feels a sense of pleasure. He is attracted by the natural beauty of the clear water and lively fish. After sitting beside the pond for a longer time, he begins to perceive the quiet and secluded atmosphere of the environment. His pleasure gradually fades and turns into loneliness and melancholy. Finally, moved by the scene, he leaves with a sense of sadness.

This emotional progression from joy to solitude is the core spirit of the text's artistic conception. It also serves as the central basis for the immersive emotional atmosphere design in this project.

5.2. Dual-Ending Immersive Experience Architecture

Based on the dual-layer narrative features of *The Story of the Little Stone Pond* and emergent narrative design theory, this project proposes a dual-ending immersive experience architecture. It consists of two intertwined narrative threads: realistic textual narration and secondary creative narrative elevation. These two threads reinforce each other.

The textual narrative ensures the rigour and authenticity of the classical texts. It closely reconstructs the original imagery, travel route, and emotional tone. The secondary creative narrative extends the original artistic conception in a reasonable way. It triggers different endings through users' interactive choices. This upgrades the traditional static text into a dynamic emergent narrative. It also aligns with the negative-space aesthetics of classical texts, where virtuality and reality coexist.

At the level of spatial narrative design, the project closely reconstructs the travel route in the original text. It builds a linear immersive exploration path. In the VR space, coherent narrative experience nodes are arranged to correspond precisely to the narrative content of each textual section. Users are guided to explore independently through the sequence of hearing the water, seeking the path, seeing the pond, viewing the scenery, and sitting in stillness. This creates a temporal and spatial overlap with the author's travel route. It also allows users to experience the spatial narrative rhythm of the text in an immersive way.

At the same time, the project incorporates open-ended experience design. It preserves freedom of spatial exploration and allows users to pause, observe, and interact freely at each node. This avoids the rigidity often caused by linear narration.

At the level of emotional narration, the project adopts a dynamic atmospheric iteration design. It corresponds to the emotional progression in the original text, where joy gradually turns into solitude. In the earlier scenes, transparent lighting and lively water sounds restore the author's pleasure when first encountering the pond. In the still-sitting scene, dimmer lighting and a restrained soundscape emphasize the lonely, quiet, and profound atmosphere.

On this basis, the project adds emergent ending branches. Users may choose to follow the original text and leave the scene. The idea that one cannot stay in a place for long completes the tragic closed-loop ending. They may also choose to continue exploring and enter an original secondary creative scene. In this scene, they reach the end of the source, where a new realm emerges in return. By tracing the character xin ("mind/heart"), users complete the sublimation of their mental state.

This structure creates a two-directional emotional narrative of sorrowful sedimentation and hopeful renewal. The final experience is therefore generated through users' bodily interaction.

By integrating dual-ending narrative with emergent interaction, Zaojing avoids the limitations of conventional digital design, such as object accumulation and rigid narration. It establishes a five-level pathway for generating artistic conception: semiotic translation, spatial construction, atmospheric iteration, narrative emergence, and mental-state sublimation. In this way, the project realises the fusion of scene and emotion in classical textual artistic conception. It also enables its regeneration within contemporary aesthetic experience.

Figure 2. Immersive Experience Construction of the Dual-Ending Narrative

6. Embodied Design Practice of VR-Empowered Artistic Conception in The Story of the Little Stone Pond

6.1. Scene Construction of the Artistic-Conception Space in The Story of the Little Stone Pond

The Zaojing project develops its artistic-conception space on the basis of textual research, close reading, and experience

design logic. Using the Unity engine, 3ds Max, and Blender, the project completes the full scene-construction process. It follows four core design principles: realistic reconstruction, expressive negative space, interaction adaptation, and controllable narration. The overall design is divided into four immersive experience scenes and dual-ending branch spaces. Together, they correspond closely to the textual structure of *The Story of the Little Stone Pond* and the project's innovative design framework.

The first scene is the realm-seeking scene of hearing water beyond the bamboo grove. It corresponds to the line, "Beyond the bamboo grove, the sound of water could be heard, like the ringing of jade pendants." This scene constructs a winding path through dense bamboo, accompanied by a spatial soundscape of flowing water and mottled light and shadow. It creates a secluded and mysterious atmosphere of seeking the realm. Users must move through the bamboo grove and clear a path before entering the scene, thereby recreating the author's exploratory journey. A subtle side path is also included. Through a micro-interaction based on movement-speed enhancement, it echoes the aesthetic logic of classical landscape wandering and increases the freedom and unpredictability of spatial exploration.

The second scene is the core scene of viewing the clear pond and swimming fish. It corresponds to textual imagery such as "the water was especially clear and cool" and "there were perhaps a hundred fish in the pond". Dynamic water materials and light-refraction simulation are used to recreate the transparent and lucid visual qualities of the pond. Strange rocks are arranged in layered formations, and fish move lightly through the water. Together, these elements create an ethereal and tranquil core artistic conception space. This scene is designed to support the text-tracing interaction centred on the character "ji" ("stillness").

The third scene is the desolate stream-bank scene for quiet sitting. It corresponds to descriptions such as "the banks twisted and interlocked like dogs' teeth" and "quiet, desolate, and profound". This scene creates an uneven and winding stream-bank space. The distant stream appears deep and secluded, extending the sense of artistic depth. Gradually dimming light and a restrained soundscape work together to heighten a cold and desolate atmosphere that "chills the spirit and pierces the bones". This scene supports the text-tracing interaction centred on the character "yi" ("movement"). It encourages users to break away from static dwelling and continue exploring.

The fourth scene is the secondary creative scene of a new realm under heavenly light. This is an original elevated space created for the project. It is based on the design idea that "at the end of the source, a new realm emerges in return". The scene presents a new artistic conception, featuring a waterfall hanging like white silk and a narrow opening of daylight. It corresponds to the text-tracing interaction centred on the character xin ("mind/heart"). This scene enables an aesthetic transformation from observing external scenery to realising an inner realm. It also provides the spatial foundation for the project's dual-ending emergent narrative.

Overall, the scene design rejects a hyperreal and commercialised visual style. Instead, it remains committed to the Eastern aesthetics of expressive negative space. In this way, it stays faithful to the restrained and suggestive artistic conception of the classical text.

6.2. Immersive Implementation of the Text-Tracing Interaction System

Based on interaction design logic and the requirements of embodied experience, this project develops a differentiated VR text-tracing interaction system. It forms a unified yet layered visual interaction language. It also constructs a multimodal and differentiated embodied interaction system.

The project designs a specific tracing logic for each of the four scenes. This ensures a close correspondence among interaction form, textual meaning, and artistic atmosphere.

First, the interaction for tan ("pond") adopts a virtual brush tool. Users trigger the writing action by clicking with the controller. Raycasting is used to identify the interaction area accurately. Frame-based accumulated timing ensures operational precision. After the writing is completed, fluorescent brushstrokes gradually illuminate the space. This ritualised interaction completes the transition to the realm.

Second, the interaction for ji ("stillness") abandons the conventional writing mode. It introduces a sand-covered manifestation mechanism. Users gradually reveal the character by wiping away the sand with both hands. This design weakens active creation and strengthens silent perception. Together with a simplified soundscape, it maximises the desolate and quiet atmosphere of the scene.

Third, the interaction for yi ("movement") takes sustained presence and shifting viewpoints as its core logic. It guides users to break away from static immersion. Through movement and changing perspectives, users continuously renew their spatial cognition. This interaction echoes the textual meaning that the place "cannot be stayed in for long".

Fourth, the interaction for xin ("mind/heart") is placed in the secondary creative new-realm space. Here, interaction no longer serves the reconstruction of external objects. Instead, it guides users toward inward reflection and completes the sublimation of their aesthetic state of mind.

The system also incorporates a dynamic atmosphere iteration mechanism. Interaction progress synchronously drives changes in lighting, sound effects, and scene dynamics. It ultimately supports free roaming and the autonomous emergence of dual endings. In this way, the project integrates bodily interaction, spatial experience, aesthetic cognition, and emotional sublimation into a complete embodied experience.

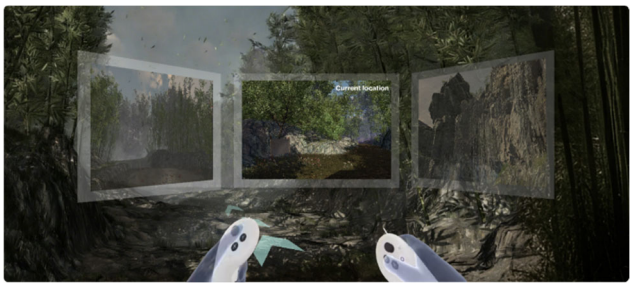

Figure 3. Live demonstration image

7. Research Summary and Design Outlook

This study takes embodied cognition theory as its core framework. It integrates immersive experience design, semiotic translation, environmental storytelling, and emergent narrative design. Based on the practice of the original VR project Zaojing, it systematically examines the

design logic and implementation pathway of immersive translation for classical texts. The study reaches the following main conclusions.

First, embodied cognition and differentiated text-tracing interaction can effectively overcome the perceptual barriers of abstract artistic conception in classical texts. Through dynamic interaction between the body and virtual space, textual imagination is transformed into a perceivable, operable, and generative embodied experience. This provides an effective design pathway for the revitalisation of classical texts.

Second, the dual-ending emergent narrative system responds to the aesthetic feature of classical texts in which virtuality and reality coexist. The original textual narrative ensures textual rigour, while the secondary creative branch narrative enables the sublimation of artistic conception. This approach addresses the problems of rigid narration and shallow artistic conception in traditional digital design.

Third, the Zaojing project verifies the feasibility of a realm-making model for classical texts based on “theoretical empowerment—semiotic translation—interaction-driven experience—narrative elevation". This is achieved through a complete design process that includes semiotic deconstruction, multimodal interaction, dynamic atmosphere iteration, and emergent ending generation.

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