Explore the Potential Benefits of Popularizing Ink Wash Painting Art Style in Video Games

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ABSTRACT

This research explores the use of ink wash painting art style in video games, focusing on how its elements are implemented and what potential benefits it will offer. The objectives of the study are to identify the core elements of ink wash painting art style, analyze how these elements are represented in the existing games, and justify the advantages of using the style in modern game design. The research involves qualitative analysis of selected games including *Okami* (2006), *Thousands Layered Edge* (2021) and *Tensei* (2024) This research aims to contribute to broader discussions on the integration of cultural art styles in contemporary game development.

Keywords: Art Style, Ink Wash Painting, Video Games

INTRODUCTION

Video games first appeared as an entertainment platform to showcase technological capabilities, focusing mainly on gameplay due to hardware limitations. As technology advances, developers began exploring other elements such storytelling and visual design and exploring more innovative ideas to enhance their video game quality (Rechsteiner, 2020) Among these, art style has become a key factor in shaping a game's identity. Art style is important not only in shaping the game looks, but also how players feel about the game world and characters (Garver, 2018). As technology evolved, video games art style has changed from pixelated graphics to 3D photorealistic. The emergence of 3D graphics in the 1990s expanded visual possibilities, enabling an immersive world with realistic textures and lighting. However, in the 2000s, many developers began shifting away from realism to explore more on stylized art style for more artistic expression. For example, games like *Borderlands* which use cel-shaded techniques and *Okami* which feature images reminiscent of ink wash paintings. This offers a visual distinctive and culturally inspired as alternatives to realism (Konstantinov,2023).

According to Sundkvist (2022), stylized art styles include all non-realistic art styles, which can be expanded into more subtypes such as cel-shading, hand-drawing and stylized realism. Despite this wide variety, traditional art styles remain underused in modern games, as most developers tend to favour realism or cartoonish stylization. Ink wash painting, rooted in East Asian art tradition, has appeared in games since the early era of 3D. However, it was often applied only partially rather than as a fully integrated style, such as for visual effects or to evoke a sense of East Asian cultural authenticity. It wasn't until the release of *Okami* in 2006 that the ink wash painting style was fully embraced and popularized, as it was fully integrated into both gameplay and visuals. Since then, only a few games like *Thousands Layered Edge* (2021) and *Tensei* (2024) have embraced the style more completely.

Titles	Year	Country	Steam Reviews (as of 8 May 2025)	Metacritic User Score (as of 8 May 2025)	Google Play user rating (as of 8 May 2025)
Okami	2006	Japan	Very Positive (7456)	8.9 (521)	n.d
Drift Sumi-e	2010	n.d	n.d	tbd	n.d
Sumioni: Demon Arts	2012	Japan	n.d	6.1 (14)	n.d
SumiKen: Ink Blade Samurai	2017	Malaysia	n.d	n.d	n.d

Thousands Layered Edge	2021	Indonesia	n.d	tbd	n.d
Tensei	2024	Japan	Positive (45)	tbd	n.d

Figure 1. List of Games Featuring Ink Wash Painting Art Style (2006–2024) and User Review

While stylized art styles are widely used in the game industry, traditional art styles such as ink wash painting remain underrepresented. As shown in Figure 1, only a limited number of titles have adopted this style over the years. Despite the critical acclaim of *Okami*, later games that use similar styles have received little attention. This decline raises concern that traditional art styles in games may be overlooked or slowly disappear form the industry. Therefore, this study aims to explore how this style is represented and what potential benefits it can offer if more widely used in game design.

This research aims to explore the potential benefits of popularizing the ink wash painting art style in video games by examining its distinctive artistic qualities and cultural significance. The study first seeks to identify the fundamental elements that characterize the ink wash painting tradition, including its visual techniques and aesthetic principles. It then analyses how these elements have been adapted and represented in existing video games, highlighting the ways in which the art style contributes to narrative expression and immersive experiences. Building upon this analysis, the research ultimately justifies the potential benefits of incorporating the ink wash painting art style into video games, arguing that its implementation can enhance visual diversity, promote cultural appreciation, and provide players with unique aesthetic engagement.

LITERATURE REVIEW

On this chapter, a summary and analysis on existing studies been reviewed to establish the foundation for this research.

Elements Of Ink Wash Painting

Ink wash painting is a traditional East Asian brush painting style that originated in China and uses only black ink in varying concentrations This variation is achieved by adjusting the proportion of ink to water and brush pressure, allowing artists to create different textures, tones, and depths on surfaces like rice paper or silk (Wang et al., 2018; Yan et al., 2022). Xuan paper, known for its absorbency, contributes to natural ink diffusion and essential trait of this art style (Dong et al., 2012). Artists often aim to capture the essence of a subject rather than realistic detail (Kuismin, 2020). Abstraction and stylization are key characteristics, influenced by oriental calligraphy and the expressive use of lines (Li, 2014; Cahill, 1987). Unlike Western art traditions that prioritize realism or objective form, ink wash painting expresses symbolic and intuitive meanings through minimalism, fluid strokes, and changing ink tones to reflect nature and inner emotion. Gu et al. (2016) describe three main drawing techniques in ink wash painting: contouring (outlining forms), colouring (using stippling and washes), and texturing (to portray surfaces like rocks). Among these, contouring and colouring are the most common. The art form also uses simplified lines and stylized shapes over intricate detail to suggest materials. For instance, thick lines for rough objects and soft blurred strokes for fabric or foliage. Finally, negative space is a key feature used to create balance and atmosphere. Leung (2014) notes that this "breathing room" between brushstrokes contributes to harmony and visual rhythm. Overall, ink wash painting blends expressive brushwork, abstraction, and symbolic representation to convey a subject's energy and spirit.

Representation Of Ink Wash Painting Art Style in Video Games

According to Gavin (2014), *Okami* is one of the purest examples of traditional art and storytelling in a modern video game. It mimics the traditional Japanese art of sumi-e through its gameplay mechanic called "Celestial Brush" where it can be used in combat and to interact with the play environment. Weber (2022) states that *Okami* illustrates its sumi-e style through its contrast between bold dark brush strokes and colours, adding personality and passion to the game. Ferrer (2017) adds that *Okami* uses abstraction through simplified faces, exaggerated silhouettes, and stylized anthropomorphic forms. This abstract approach aligns with the game's folktale-based narrative, making the story feel ancient and timeless.

Benefits Of Using Ink Wash Painting In Video Games

Li (2014) explains that Chinese painting uses abstraction and minimal imagery to express harmony between subject and object, reflecting the ever-changing nature of ink wash. Leung (2021) adds that its focus on nature evokes spaciousness and peace, connecting external scenes with inner emotions. This aligns with Taoist and Zen ideals of spontaneity and unity with nature. Li Jin et al. (2024) highlights that brush ink animation helps preserve cultural heritage by drawing from traditional East Asian art, while also offering aesthetic appeal through its organic, expressive, and visually unique brushwork.

METHODOLOGY

The purpose of this research is to explore the potential benefits of popularizing the ink wash painting art style in video games by combining a two-phase qualitative methodology with a clear conceptual framework. In Phase I, content analysis of credible sources including articles, journals, and books to identify the elements of ink wash painting. In Phase II, a case study through gameplay observation of *Okami*, *Thousands Layered Edge*, and *Tensei* examined how these elements were implemented through various aspects in games. By mapping the elements identified from literature onto their in-game representations, this research provides insight into how brush control, ink concentration, and abstraction contribute to enhanced gameplay, enriched visual storytelling, and deeper cultural expression.
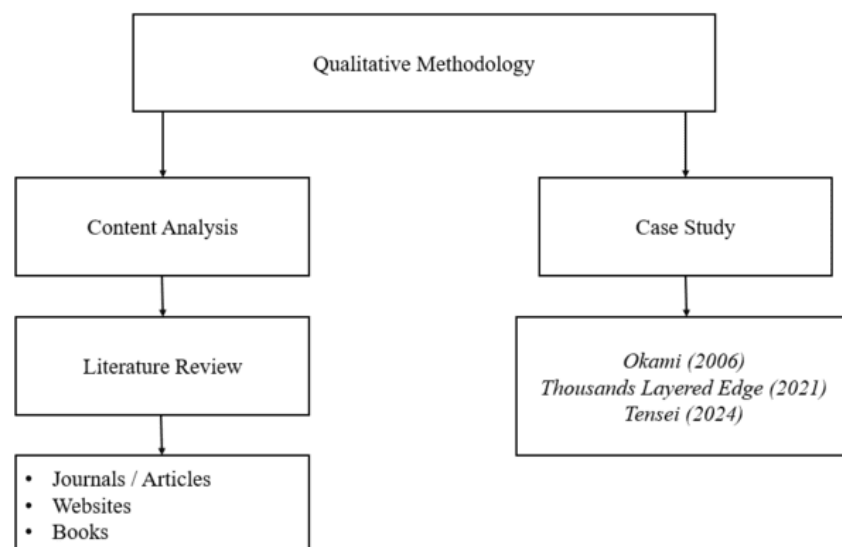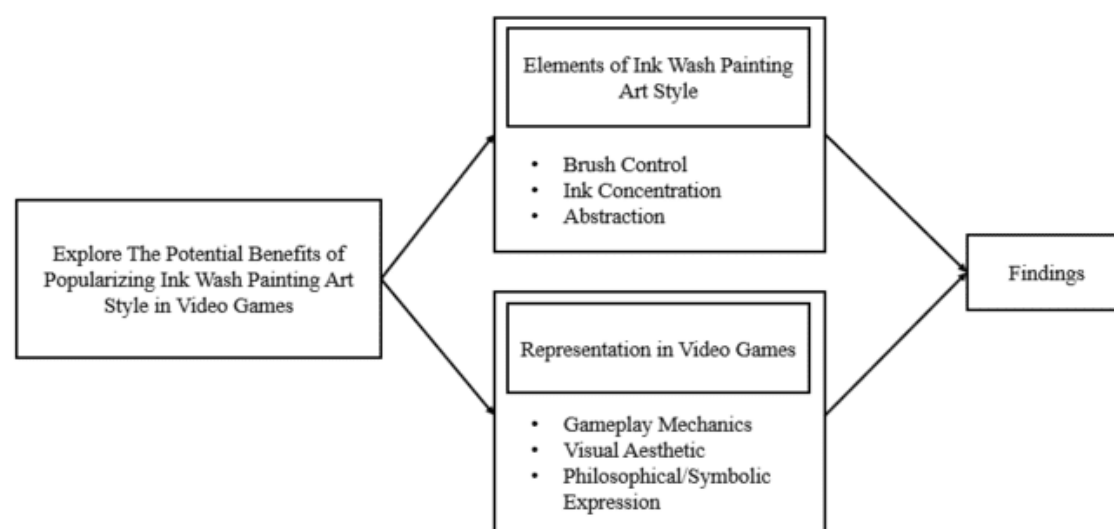

Figure 2. Summary of Method

Figure 3. Conceptual Framework

ANALYSIS AND FINDINGS

According to scholars, extensive explorations of ink wash painting elements within the existing literature were meticulously categorized using distinct keywords. Through a rigorous data analysis process, a comprehensive set of seven keywords emerged: brush control, texture, ink concentration, abstraction, black ink, symbolism, and negative space.

No	Title	Author/s	Keyword/s	Characteristic/s
1	Growing a digital ink wash painting tool	Liao & Chien (2025)	- Black ink - Ink concentration - Brush control - Abstraction	The authors emphasized that ink wash painting artists will use black ink brush pens to paint by controlling ink density and brush stroke as well compositions. The
2	The Horizons of Watercolor Painting Creation:Watercolor and Ink Wash in the Chinese Context	He (2025)	- Symbolism - Brush control - Ink concentration	- Ink wash concept involves both technical and cultural and philosophical meaning - Artist uses vary brushstrokes and ink tones to create "dense and misty" atmosphere which convey an elusive colour effect
3	The Enlightenment and Influence of Chinese Painting on Animation Art	Hou (2024)	- Brush control - Abstraction - Negative space - Symbolism	- The strong lines in Chinese painting can express the essence of objects while also conveying the artist's emotions and personality, allowing viewers to connect with the deeper meaning behind the painting - The distinctive use of empty space adds a sense of space and layers which encouraging imagination and creating the feeling that the empty space of the painting hold beauty as well - Chinese ink painting often assigns specific meanings to certain colours, emphasizing their symbolic importance.
4	Interactive Digital Innovation and Design of Ink and Wash Landscape Art	Dou & Meng (2024)	- Ink concentration - Brush control - Texture - Abstraction	- Use different tones of ink to express different brushstrokes and techniques. For example, light ink to outline the contours of mountains, rocks, trees, and thicker or burned ink for rubbing, shading, and stippling. - Different brushwork can show different texture to different object which make the painting looks three-dimensional - Focus on pursues artistic conception and emotional expression and attention to the overall atmosphere and charm of the picture
5	A non-photorealistic rendering method based on Chinese ink and wash painting style for 3D mountain models	Yan et, al. (2022)	- Brush control - Texture - Ink concentration	The brushstrokes will look different depending on the surface of the material used such as silk and rice paper. Different ink concentrations also give variations in tone between black and white.
6	Two Sides of Landscape in Ink-wash Painting: Chinese Landscape Painting in Expressive Arts Practice	Leung (2021)	- Black ink - Brush control - Abstraction - Symbolism - Ink concentration - Texture	- Objects drawn using different line strengths and techniques can give different effects. For example, strong black lines and dotted brushstrokes suggest a mountain or hard rock. - The life, spirit, and mind of the painter are revealed in a symbolic way on paper - Different calligraphy lines make it look expressive and can be a language for someone's beliefs.

			- It also focuses on the interaction between water, ink in the brush on the paper.
7	Creating Okami Inspired Shader in Unity's Shader Graph	Kuismin (2020)	- Black ink - Brush control - Ink concentration - Abstraction	- Sumi-e painter uses only black ink or varying shades of grey by varying the brush pressure and toning down the ink density. - Painting in Sumie style is not just about tracing the appearance of the subject, it is about capturing its deepest essence.
8	Ink Wash Painting Style Rendering with Physically-based Ink Dispersion Model	Wang et al. (2018)	- Black ink - Ink concentration - Texture	- Ink wash painting is a type of brush painting style originating in China that only uses black ink in various concentrations - Artists use different shades of black colour to paint different scenes on the rice paper.
9	Ink-painting Animation by Geometry Buffer Based Real-time 3D Rendering	Gu et al. (2016)	- Ink concentration - Black ink - Abstraction - Brush control - Texture	- Ink drawing is a picture that represents the shade of an object with black ink drawing on white paper. - The object is drawn with abstract lines and surfaces. - The thickness of the lines is adjusted according to the fine or rough surface material
10	A study of how Chinese ink painting features can be applied to 3D scenes and models in real-time rendering	Cao (2016)	- Brush control - Ink concentration	Refining brush movement and ink flow is the core of the Chinese ink painting development.
11	Image-based Ink Diffusion Simulation and 3D Chinese Wash-ink Paintings Rendering	Li & Bai (2015)	- Ink concentration - Brush control - Abstraction	- Chinese ink painting uses monochromatic colour with different concentration and tone of water and ink. It also uses strong water absorption paper to let the ink penetration form a unique diffusion effect. - There are two different ink wash styles: 1. GONGBI focuses on painting finely with meticulous brushworks and emphasizes realism on daily life objects. 2. XIEYI painting is generally painted with rugged brushwork without details, and more focus on expression of painter's inner emotion and personalized style instead replication of appearance of the objects painted
12	Establishment of Meaning of Ink Wash Painting in Modern Times: Evolution of Chinese Ink Wash Painting as a Formal Language of Oriental Figure Painting	Li (2014)	- Abstraction - Symbolism - Ink concentration - Brush control	- Abstraction in Chinese painting give experience the process of realizing the truth which conveys the life awareness of perfect harmony of subject and objects - Expressive brushstrokes cause infinite possibilities of colour gradients - Simple lines and ink changes are used to evoke the viewer's intuition and emotions, reflecting instinctive abstraction and signifying the freedom of ink wash painting.
13	Stroke-based Real-time Rendering of Ink Wash Style for Geometric Models	Xu et al. (2012)	- Abstraction - Ink concentration - Brush control - Texture	- Ink wash painting aims to present the soul of the subject rather than depicting its appearance and shape - Artists use brush with varying mixtures of ink and wash to express diverse properties of the subject.

				- Four key techniques used in this art style: 1. Contouring, involved in creating silhouette of objects using dark and thick ink. 2. Texturing, use a dry brush to create details on surfaces such as cracks or grains to show softness or stiffness. 3. Colouring, shade objects with light ink to suggest illumination. 4. Dotting: adds small, abstract marks to represent elements like moss or trees, adding liveliness to landscapes such as rocks and mountains.
14	Real-time image-based chinese ink painting rendering	Dong et al. (2012)	- Brush control - Abstraction - Ink concentration - Black ink - Negative space	Chinese ink painting key features are ink brushes which render a variety of strokes, abstractions where details are generally ignored, ink diffusion and monochromatic colour, primarily black and white. Also, empty space is used with the using of deep black ink and white as free space
15	Ink-and-wash painting based on the image of pine tree using mean curvature flow	Yang et al. (2012)	- Symbolism - Abstraction - Brush control	Ink wash painting landscapes represent a theme of natural scenery using ink with various brushstrokes which shows the principle of harmony by letting the subject reinterpret it by feelings of mind and body. It has aesthetic beauty of space by simplifying the real whole view abstractly and omitting unnecessary objects.

Figure 4. Keyword Summary of Elements of Ink Wash Painting Written by Experts and Scholars

Author	Keywords						
	Brush Control	Texture	Ink Concentration	Abstraction	Black ink	Symbolism	Negative Space
Liao & Chien (2025)	✓		✓	✓	✓		
He (2025)	✓		✓			✓	
Hou (2024)	✓			✓		✓	✓
Dou & Meng (2024)	✓	✓	✓	✓			
Yan et al. (2022)	✓	✓	✓				
Leung (2021)	✓	✓	✓	✓	✓	✓	
Kuismin (2020)	✓		✓	✓	✓		
Wang et al. (2018)		✓	✓		✓		
Gu et al. (2016)	✓	✓	✓	✓	✓		
Cao (2016)	✓		✓				
Li & Bai (2015)	✓		✓	✓			
Li (2014)	✓		✓	✓		✓	
Xu et al. (2012)	✓	✓	✓	✓			
Dong et al. (2012)	✓		✓	✓	✓		✓
Yang et al (2012)	✓			✓		✓	
	14	6	13	11	6	5	2

Figure 5. Most Frequently Mentioned Elements of Ink Wash Painting Art Style in Previous Studies

According to table 3, the most frequently mentioned elements of ink wash painting art style are brush control, ink concentration and abstraction. The table below explains the definition of each element.

Elements	Definition
Brush control	Brush control refers to the artist's ability to manipulate the brush to create a variety of strokes, textures, and expressive lines. It involves mastering the pressure, angle, speed, and movement of the brush.
Ink Concentration	Ink concentration refers to the varying shades of black and grey achieved by controlling the amount of water mixed with the ink. It ranges from deep black to light grey tones.
Abstraction	Abstraction in ink wash painting involves simplifying or stylizing forms to capture the spirit or essence of the subject, rather than its realistic appearance.

Figure 6. Definition of the Most Frequently Mentioned Elements in Previous Studies

Brush control

Figure 7. Okami (2006) Celestial Brush Mechanics (left) & Fighting Scenes in Thousands Layered Edge (2021)

In *Okami* (2006), brush control elements are applied through both its visual graphics and gameplay. The game uses cel-shading and irregular-weight black outlines to mimic hand-drawn brush strokes. Its "Celestial Brush" mechanic allows players to draw symbols to activate powers, such as drawing a circle to summon the sun or a single stroke to cut objects. This simulates the control and feel of using a real brush. Similarly, *Thousands Layered Edge* (2021) adopts irregular brush-like outlines in its visuals. In terms of gameplay, it uses gesture-based mechanics where players swipe in specific directions to dodge or attack, mimicking brush movements and transforming combat into an expressive brushstroke-inspired experience.
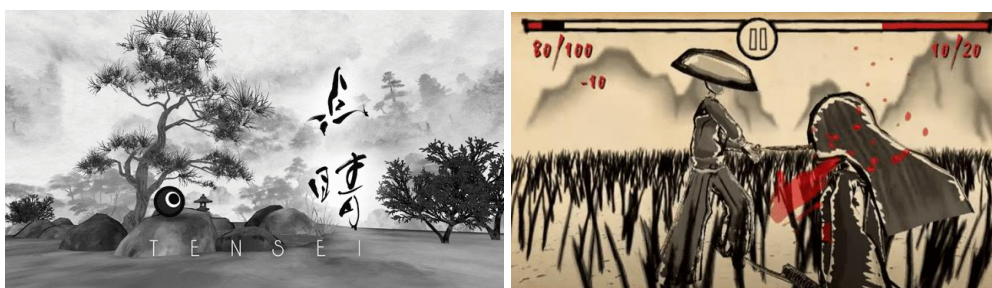
Ink Concentration

Figure 8. Tensei (2024) Title Menu (left) and Thousands Layered Edge Gameplay (right)

In *Tensei* (2024), ink concentration element is reflected in the game's monochromatic palette, which consists primarily of black, white, and grey. Instead of using a wide range of colours, the game creates spatial depth through variations in ink density. For instance, lighter, washed-out tones are used in the background to evoke mist and distance, while darker, more saturated ink is applied to foreground elements to bring them forward. Similarly, *Thousands Layered Edge* (2021) applies ink concentration to establish depth. The game uses darker, more concentrated ink in the foreground and lighter tones in the background. This visual layering technique mirrors traditional ink painting methods, creating atmospheric perspective without relying on the Western approach to linear depth.

Abstraction

Figure 9. Okami (2006) Environment (left) & Tensei (2024) Environment (right)

In *Okami* (2006), abstraction reflected in its visual design, where details are replaced with expressive shapes. For example, mountains are drawn with flowing, bold lines to convey strength, while cherry blossom trees use circular forms and calligraphic curves instead of realistic flowers. Line thickness also conveys meaning. For example, solid objects feature strong strokes, while delicate elements like leaves use thinner lines. Water, fire, and wind are depicted without outlines to represent their impermanent nature, contrasting with the defined forms of solid objects. This approach aligns with Taoist values of simplicity, harmony, and the natural flow of life. *Tensei* (2024) also embraces abstraction through minimalist gameplay and nature-inspired visuals. The player progresses by jumping across platforms and avoiding obstacles while the environment changes with each milestone. The game begins in grey tones and gradually shifts through the colors of spring, summer, autumn, and winter. These seasonal transitions reflect the natural cycle and atmosphere without relying on detailed representation, staying true to the essence of abstraction found in traditional ink wash painting.

After analyzing how brush control, ink concentration, and abstraction are represented in several games, we can now explore the potential benefits of using the ink wash painting art style in video games.

a) Enhanced Gameplay Mechanics and Interaction

In *Okami*, the Celestial Brush allows players to interact with the world by drawing strokes to solve puzzles or battle enemies. By replicating the real act of brush painting, this mechanism provides an interactive experience that turns visual art into video games. As players' actions instantly affect the game environment, it not only promotes creative problem-solving, it also offers the players a sense of control and immersion. Similarly, in *Thousands Layered Edge*, players need to perform slash gestures on mobile screens to defeat enemies. This mechanic replicates the real act of brush painting, offering an interactive experience that transforms visual art into gameplay. By employing brush control into the core gameplay, *Okami* and *Thousands Layered Edge* successfully blur the boundaries between visual art and player input, providing a distinct and meaningful interaction that goes beyond typical button-press mechanics.

b) Enhanced Visual Appeal

Tensei used varying black ink concentration to build spatial depth. Lighter ink is used to create misty or distant backgrounds, while darker more concentrated ink brings foreground objects forward which mimics traditional spatial techniques. According to Li (2014), these changes in ink intensity not only create depth and texture but also contribute to the overall atmosphere of the scenes. By adapting these traditional methods, games like *Tensei* are able to deliver a unique visual experience that emphasizes elegant visuals and atmosphere. As a result, the use of ink concentration enhances the game's artistic appeal and distinguishes it from other conventional art styles that rely on realistic shadings or photographic details.

c) Promote Culture

Abstraction in ink wash painting focuses on simplification and symbolism rather than realistic representation. This is deeply rooted in Taoist and Zen Buddhist philosophy which values harmony with nature and the flow of simplicity (Li, 2014; Leung, 2021). In games like *Okami* and *Tensei*, this philosophy is visually present in their minimalistic forms, nature-based backgrounds, and absence of unnecessary details. This abstraction aligns with

the Taoist idea of appreciating nature not as it looks, but as it feels. According to Li (2014), abstraction lets players reflect and interpret, offering a cultural and emotional layer to the gaming experience. By avoiding photorealism, abstraction helps games carry deeper meaning, fostering cultural preservation and philosophical storytelling. Furthermore, the nature-focused design of these games contributes to a calming and reflective atmosphere, enhancing the player's emotional engagement through peaceful environments and gentle pacing.

CONCLUSION

Through the analysis of *Okami* (2006), *Thousands Layered Edge* (2021), and *Tensei* (2024), it is evident that the core elements of ink wash painting, which are brush control, ink concentration, and abstraction, are effectively represented in video games through gameplay mechanics, visual aesthetic and philosophical and symbolic expression Brush control is reflected in interactive mechanics like *Okami*'s Celestial Brush and *Thousands Layered Edge*'s slash gestures, offering players an engaging experience that mimics real brush strokes. Ink concentration enhances the visual depth and atmosphere in games like *Tensei*, using tonal variations to suggest distance and emotion, staying true to traditional painting methods. Finally, abstraction, in both *Okami* and *Tensei*, simplifies form to express essence, drawing from Taoist principles of harmony and nature, and bringing cultural and philosophical depth into gameplay. These implementations not only preserve the artistic essence of ink wash painting but also introduce unique benefits to game design such as enriched gameplay interaction, distinctive visual appeal, and the promotion of traditional values and cultural identity in modern video games, proving the style's relevance and potential in modern video games.

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