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Exploring the Medicine and Shaman Paradigm Shift for Game "Dukun Start-Up" Through Pixel Art Style

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ABSTRACT

This study addresses the lack of culturally meaningful visual representations in Indonesian indie games, with a particular focus on the implementation of the pixel art style for the game "Dukun Start-Up", which explores the culturally specific theme of shamanism (dukun). The study identifies a significant problem: despite the global popularity of pixel art, Indonesian developers rarely utilize it to convey in-depth cultural narratives, resulting in a gap between technical execution and cultural authenticity. This research is urgently needed to provide a methodological framework for integrating culturally specific assets into pixel art, moving beyond nostalgic aesthetics towards substantive cultural representations. Using a Practice-Based Research (PBR) methodology, the study follows a structured workflow aligned with industry-standard game development phases such as Pre-Production, Production, and Post-Production. Data collection included analyzing references from popular pixel art games, conducting in-depth research on shamanic practices and cultural symbolism, and holding collaborative brainstorming sessions to ideate and refine visual concepts. This study successfully designed and implemented a comprehensive set of pixel art assets, including characters, environments, and user interface elements, deeply embedded in Indonesian cultural motifs with a focus on shamanic symbolism. The findings demonstrate that pixel art, when applied thoughtfully, serves as a powerful medium for conveying cultural narratives, offering players an immersive experience that combines aesthetic appeal with educational value. This work provides practical insights for developers and communities interested in creating culturally themed games and highlights the effective integration of artistic practices and cultural research into game asset design.

KEYWORDS

Shaman
Game Development
Pixel Art
Implementation

INTRODUCTION

The global game industry is a significant economic and cultural force, with its market value exceeding USD 200 billion, positioning Southeast Asia as a critical growth sector (Newzoo & Bujisman, 2025) This expansion presents a vital opportunity for integrating local cultural elements into game narratives and aesthetics. However, within Indonesia, a significant shortage of developers creating high-quality content that leverages its rich cultural heritage persists (Mulachela et al., 2020). This gap is particularly evident in the domain of visual assets, which are crucial for player immersion and authentic cultural representation.

One art style uniquely suited for this purpose is pixel art. Originally born from technical limitations, it has evolved into a deliberate aesthetic choice, valued for its nostalgic appeal, technical efficiency, and unique ability to convey meaning through meticulous pixel placement (Azzi, 2019; Boyd & Steinberg, 2012). Its relatively low technical barrier makes it a strategic option for indie

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developers to produce stylized and compelling visual assets without requiring immense resources (Grahn, 2013; Silber, 2015).

Despite this potential, the application of pixel art to represent Indonesian themes remains superficial and underexplored. While games like A Space for the Unbound (2023) utilize a local setting, a deep and systematic integration of pixel art with specific, nuanced cultural elements is still lacking. Indonesia's visual culture spans a wide range, from traditional textiles to architecture, and offers a wealth of inspiration when it comes to creating unique visual assets for games, yet this potential remains largely untapped (Agung et al., 2021).

This research focuses on a specific and potent Indonesian theme: the practice of shamanism or the "dukun". Elements of mysticism and these shamanistic practices present a rich narrative potential for integration into the game medium. As a form of Indonesian cultural heritage, this practice has deep historical roots and is often subject to controversy. A study by Nourse (2013) documents the semantic evolution of the term "dukun," which initially referred to respected traditional healers before undergoing a shift in meaning towards associations with the supernatural. The contemporary relevance of this practice is reinforced by a study from Syahfitri & Zuhri (2022), which demonstrates the reliance of certain community members on dukuns when conventional solutions are deemed insufficient. The core challenge, and this study's novelty, lies in adapting the complex visual identity of dukun culture into the simplified yet expressive form of pixel art. The fusion of minimalist pixel art aesthetics with the richness of Nusantara's mystical culture offers a unique approach; this visual technique facilitates the creation of a distinctive and atmospheric imaginative world while serving as an effective medium for expressing symbolic narratives and traditional magical elements.

Shamans are practitioners who provide healthcare through the application of supernatural powers, with their methods collectively referred to as traditional health treatments. Indonesia is unique in its broad national adoption of such traditional medicine (Siregar & Junaidi, 2024). The country's vast cultural diversity is reflected in the wide array of regional healing practices that remain actively preserved and transmitted to this day (Fitriani & Eriyanti, 2020). Despite rapid technological and modern advancements, a segment of the population continues to trust in the healing practices of shamans, while others have moved away from such alternative treatments (Rianissani, 2018). As a result, many people become victims of fraud, where shamans abandon any pretense of using medicine and instead rely on pure trickery and claims of communing with spirits.

Therefore, this study aims to teaching some objects used by shamans (dukun) by implementation of a pixel art style for the visual assets of the game "Dukun Start-Up," which utilizes an Indonesian theme centered on the dukun. Through the engaging medium of video games, this article seeks to show a new generation how modern shamanic figures often bear little resemblance to their historical counterparts, fostering a critical awareness of this cultural shift (Fitri & Sahrul, 2025; Oktriana & Yusmerita, 2024).

METHOD

This study utilized a Practice-Based Research (PBR) methodology, which integrates the creation of artistic work as a core part of the research process. The game's visual assets, which took approximately three to four weeks to develop, underwent weekly evaluations by a team of expert mentors. The data used in this study is personal data collected by each team member. The Technical Design Document (TDD) contains the codes used to create the game on the game engine. The Game Design Document (GDD) contains the design fundamentals such as narrative, user persona, levels, game systems, etc. The Art Design Document (ADD) contains a collection of concepts for creating visual assets such as references, concepts, creative limitations, etc. The creation of the visual assets for "Dukun Start-Up" was conducted through a structured pipeline mirroring the industry-standard game development phases: Pre-Production, Production, and Post-Production. This framework ensured a systematic, replicable, and critically reflective approach to implementing pixel art with an Indonesian mystical theme.

In the pre-production phase, a structured ideation process will be initiated. This begins with brainstorming sessions conducted collaboratively with the development team and academic mentors.

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The objective of these sessions is to align the artistic vision and ensure the visual assets directly support the game's core focus and narrative (Schell, 2019). In this stage, strengthening the concept of work is very important so that the foundation of the idea does not deviate from the initial goal (Rotama, 2022). This involves defining clear art concept limitations, such as a constrained color palette and resolution caps, to maintain a consistent visual style, prevent scope creep, and ensure all references and assets remain cohesive and manageable throughout the project (Fullerton, 2018).

The production phase marks the commencement of the tangible asset creation workflow. This process encompasses the technical methodologies of sprite construction, including aesthetic considerations, background elements, and the foundational rationale for each asset's design. The finishing stage is crucial for ensuring technical quality, involving pixel-perfect cleanup and rigorous readability testing to guarantee each asset is clear and functional at its intended in-game size (Wu et al., 2022). Following this, the initial creations undergo a refinement stage to consolidate lines and details in preparation for mentor evaluation.

The post-production phase focuses on integration and validation. The implementation of assets into a functional game engine prototype is essential to evaluate them within an interactive context, assessing their role in creating a compelling and intuitive game flow (Kopf & Lischinski, 2011). Prior to final submission, the game's visual assets will undergo a formal expert evaluation process. This entails presenting the product to a panel of mentors and specialists for heuristic review. Their feedback, focused on criteria such as aesthetic consistency, cultural resonance, and functional clarity, will be incorporated into a final round of refinements, ensuring the assets meet high standards of quality before public release (Lu & Hsiao, 2022).

RESULT AND DISCUSSION

The results of the visual asset development process for "Dukun Start-Up" are shown in this section along with their relevance to the study questions, which centered on the practical application of Indonesian shamanic culture's adaption into pixel art.

1. Pre-production

The pre-production stage holds a crucial role in the development of the game's visual assets. Its scope includes brainstorming, data collection (user persona), conceptualizing the artwork, such as art limitations, art direction pillars, visual guides, and character/UI/art style exploration, and compiling a list of assets to be produced (Carman, 2018). A production plan spanning three weeks was created, complete with a clear division of tasks for each team member according to their job description, particularly for the visual asset illustrators, to ensure a structured process aligned with the established concept. To optimize time efficiency, the asset creation was divided between two illustrators: the author, as Illustrator 1, focused on UI, Illustration and Character design, while Illustrator 2 was responsible for creating in-game items and environments.

1) Brainstorming Art Concept

The brainstorming session, following our discussion, resulted in a comprehensive Game Design Document (GDD) that serves as the foundational blueprint for the development of "Dukun Start-Up".

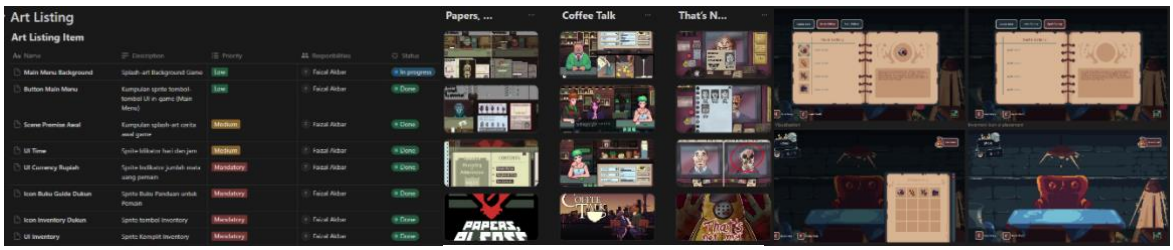

Figure 1. Asset Listing, Game Reference, UI/UX on Game Design Document.
Source: Personal document

This document outlines core components such as the game overview, mechanics, features, narrative, and systems. Specifically, this section will focus on the UI/UX design, art references, and

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the asset listing. Regarding the UI/UX (Figure 1), this section details the scheduled implementation of visual assets, which is dependent on the individual progress of each illustrator. For the Art References (Figure 1), it comprises a collection of interactive games such as Paper Please, Coffee Talk, and That's Not My Neighbor, that serve as a benchmark for production, informing the game's mechanics, narrative, and visual style. The last one is, Asset Listing (Figure 1). Contains a comprehensive list of all required visual and audio assets for the game. This list is meticulously tracked with details on progress percentage, asset name, and the responsible team member. The purpose of implementing an Art Concept Limitation is to narrow the scope of visual asset production for the game "Dukun Start-Up," ensuring a stronger focus on pre-defined priorities. According to the author's Art Design Document, these limitations include:

a. Do's & Don'ts: Provide art guidelines for the creation of all types of visual assets such as character, environment, ui/ux.
b. Character: To ensure all characters possess a consistent and distinctive identity.
c. Environment: To ensure the surroundings do not distract the player with unimportant background elements.
d. Items: Each item must, at a minimum, be visually representative of its name.
e. Based on these limitations, the guidelines that illustrators must follow include:
f. An Art Direction containing the art style goal, approach, keywords, and a moodboard.
g. Visual Guidelines containing the specific visual standards that must be achieved for each sprite/visual asset (e.g., characters, items, backgrounds).

2) The Purpose of Dukun Start-Up

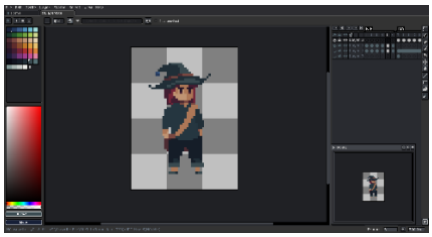
"Dukun Start-Up" aims to redefine the term "dukun" and introduce the spices associated with it. Through its pixel art visuals, the game purpose are delivers a moral message on shamanism and enhances understanding especially for students about dukun's history and cultural role (Sari & Andika, 2021).

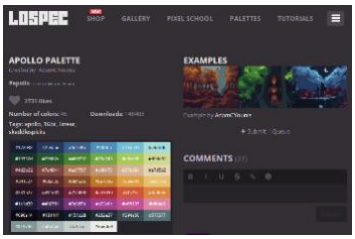
3) Character Design

The game's narrative and character dynamics will be supported by a cast of multiple characters. The protagonist, Ki Limgood, will be accompanied by twelve Non-Player Characters (NPCs). This NPC roster consists of nine standard characters: Budi, Clara, Dimas, Fani, Joko, Kang Li, Rian, and Wulan, following by four special characters, Ny. Dhianna, Kang Bakso, Genderuwo and Rianna. Each of whom will have their roles and backgrounds explicitly defined within the game's story.

2. Production

The production of visual assets for the game "Dukun Start-Up" began with the preparation of the predetermined creation concept, software, color palette, and techniques. The primary creative focus was to implement Indonesian culture through elements like fabric motifs, architecture, spices, etc., while preserving the authentic meaning of the references (Falahi & Larasati, 2024). The creation process was carried out using several tools: Google Drive for sorting sprites, Lospec for selecting color palettes, and a single pixel art creation software, Aseprite. The production of all visual assets was finished within three weeks. This included stages such as sketching, line art, refinement, and pixel cleaning. During development, we organized the assets into 13 folders with various file types (.png, .gif) to ensure they were ready for processing and implementation in the game engine.





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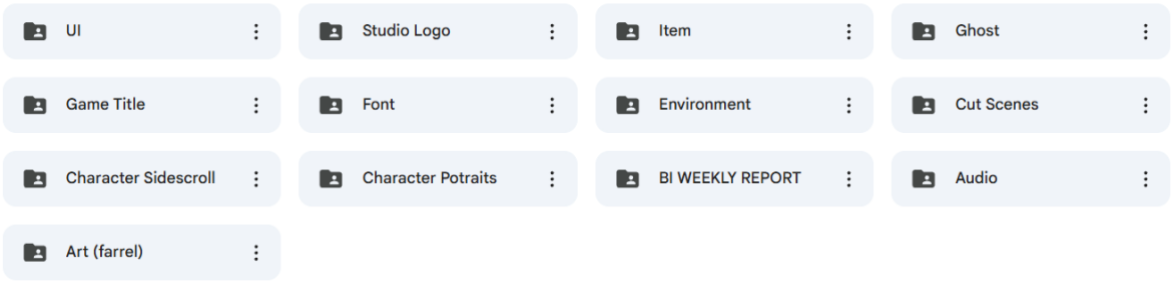

Figure 2. Aseprite Working, Lospec Page and Google Drive.
Source: Personal document, https://lospec.com/palette-list/apollo

1) Software

Aseprite is a specialized software application designed for creating pixel art. It is widely used by game developers to create character sprites and various other in-game assets (Hendaryie et al., 2020). Consistently updated on a monthly basis, this indie pixel art software continues to evolve with impressive enhancements. Despite its affordable price point, the program delivers robust functionality, including an animation timeline that rivals Adobe Flash in user-friendliness. It provides comprehensive color editing tools and supports palette imports from vintage gaming systems. The sole notable limitation lies in its intentionally pixelated, low-resolution interface (Azzi, 2019). For the purposes of a "Dukun Start-Up," Aseprite is used to create all the visual assets in the game, from characters, environments, UI/UX, and animations.

2) Moodboard

Moodboards play a critical role in character development for game design. They serve to solidify visual concepts, ensure stylistic coherence, streamline the illustration workflow, and prevent the loss of creative ideas (Toksanbayeva, 2024). As a foundational tool, mood boards align the team's creative vision and uphold consistent aesthetic standards throughout the character design process (Endrissat et al., 2016). For the purposes of a "Dukun Start-Up," illustrators used a moodboard to gather references and streamline the character design process for "Dukun Start-Up".

3) Asset Creation Techniques

a. General Work Techniques

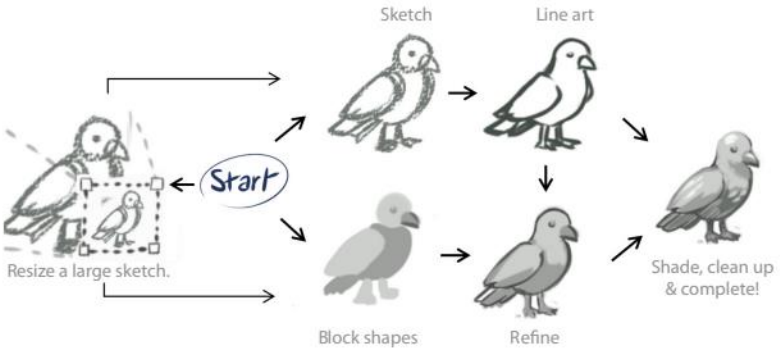

Figure 3. Working path method
Source: Pixel Logic - A Guide to Pixel Art (Azzi, 2019)

There are many ways to start to create sprite pixel art. Artists can choose different paths or even mix methods together, as there is no one correct technique. The key thing to remember is that pixel art is usually made on a single layer (Azzi, 2019). The visual development process adhered to a defined technical pipeline. The color scheme was constrained to the "Apollo" palette, sourced from Lospec website page, to ensure aesthetic cohesion. The initial phase employed a block-based methodology, wherein illustrators established foundational forms through simplified silhouettes. Efficiency in base coloring was achieved through the strategic use of flat color application tools

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(Kembaren et al., 2020). Subsequently, the shading phase introduced value contrast to create the illusion of depth and lighting. The final stage involved a process of refinement and detailing, where artists enhanced the sprite's readability and visual appeal through the deliberate addition of nuanced pixel-level adjustments. Additionally, The basic tools used to create assets on the software page are the pencil tool, eyedropper, eraser, and bucket (Azzi, 2019).

Animation technique also applied to animated the player character using basic animation techniques. Animation results included a 6-frame idle and run cycle for Ki Limgood as main character. In pixel art, animation is crucial for bringing characters and scenes to life, strengthening storytelling, and boosting player engagement. However, the limited resolution and color palette demand exceptional creativity and precision to convey fluid movement and emotion under such strict artistic constraints (Kuo et al., 2016; Lee, 2020). Following that, the rest of the character (NPC) get the idle animation only considering this game is still in the development stage.

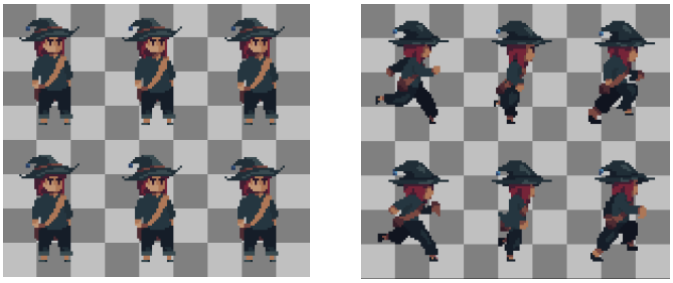

Figure 4. Ki Limgood Idle and Walking Animation.
Source: Personal document

b. Character Exploration

(1) Ki Limgood (Protagonist)

Ki Limgood, the game's main character, holds a position of central importance. His role is pivotal to the game's structure, as he is fundamentally responsible for both triggering the narrative's commencement and facilitating its ultimate conclusion. The character's design was developed by applying the aforementioned methodological framework, while rigorously adhering to the aesthetic and thematic guidelines established in the Art Design Document (ADD) moodboard. Following that, the background story of this character serves as the foundational framework for establishing the character's atmospheric presence (Rotama et al., 2024; Yudi Arsana, 2023).

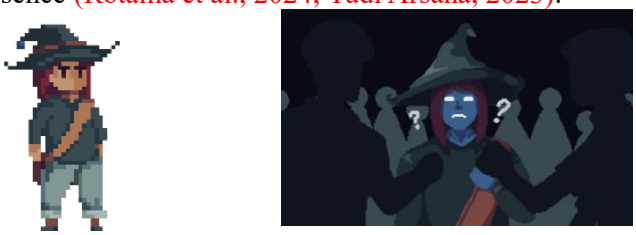

Figure 5. Ki Limgood Sprite and Cut Scene.
Source: Personal document

Life had already derailed for Ki Limgood when he dropped out of college, a failure that weighed heavily on him. But the real blow came with the sudden death of his adoptive father, the only family he had ever known. Returning to the cramped, dusty shamanic shop he grew up in, Ki was engulfed by silence and the lingering scent of incense and herbs. Overwhelmed by grief and responsibility, he faced a choice: sell the place and let his father's legacy disappear, or find a way to keep it alive. The traditional ways, reliant on word-of-mouth and a dwindling clientele of elders, wouldn't be enough. He had to adapt to survive.

(2) Non-Player Character (NPC)

The NPCs (Non-Player Characters) in the game are designed with unique functions and background story, ranging from spice merchants and vendors of shamanic tools to dealers of crucial

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information for players (Zhou, 2024). NPCs name are randomly generated based on their gender, exclude special NPCs such as Ny. Dhianna, Rianna, Genderuwo, and Kang Bakso.

Figure 6. NPCs Sprite.
Source: Personal document

To enhance their authenticity, many NPCs feature clothing designs adorned with traditional cultural motifs, lending them a distinctively mystical and contextually relevant aura.

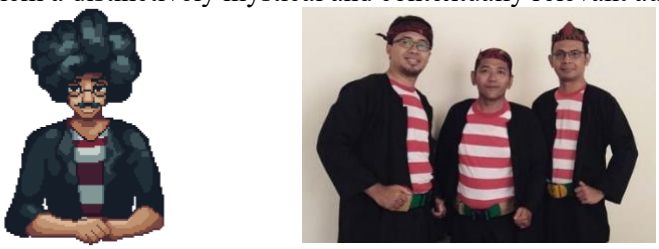

Figure 7. Implementation Pesa'an Madura Clothing on NPC.
Source: Personal document, https://berbol.co.id/

The character's design was developed by applying the aforementioned methodological framework, while rigorously adhering to the aesthetic and thematic guidelines established in the Art Design Document (ADD) moodboard. The narrative design for the Non-Player Characters (NPCs) prioritizes thematic resonance over elaborate backstories. As outlined in the Art Design Document (ADD), each NPC embodies a distinct personal dilemma, intentionally crafted to present players with meaningful problem-solving challenges. These dilemmas, along with the characters' names, are directly inspired by and rooted in specific socio-personal struggles prevalent within contemporary Indonesian society.

c. Environment Exploration

In game design, the "environment" is the digital world where the game unfolds. It includes everything the player perceives: visuals like buildings and landscapes, sounds like music and weather, and interactive objects within the space (Sun et al., 2023). The pipeline for environmental asset creation adhered to the established character development methodology. However, the application of the refinement and detailing phase was implemented selectively based on functional priority. High-resolution cleanup was rigorously applied to ground tiles and navigable paths to ensure clear player traversal and interaction clarity. Conversely, this labor-intensive detailing stage was intentionally omitted for non-interactive background elements, such as forest, graveyard, and player house layers, to optimize resource allocation and maintain a consistent aesthetic focus on gameplay-critical areas.

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Figure 8. "Dukun Start-Up" Environment.
Source: Personal document

d. Game User Interface (GUI) Exploration

(1) Game Title

The development of the game's title and user interface (UI) assets followed the same standardized production pipeline established for other visual elements. Typographic selection was strategically employed to convey core gameplay themes; specifically, a font with mystical connotations was chosen to reinforce the esoteric narrative setting (Soyluçiçek, 2016).

Figure 9. "Dukun Start-Up" Game Title.
Source: Personal document

Furthermore, UI iconography was designed to communicate game mechanics intuitively. The inclusion of an upward-trending arrow symbol serves as a direct visual indicator of the game's incorporated tycoon-style progression system, signaling economic growth and expansion to the player.

(2) Interactive User Interface (UI)

The development of the game's title and user interface (UI) assets followed the same standardized production pipeline established for other visual elements. In game development, the User Interface (UI) is vital as the central bridge between the player and the game. A skillful UI design enhances the entire experience by ensuring intuitive controls, clear information, and seamless navigation, which collectively improve usability and accessibility (Zamri, 2022). Typographic selection was strategically employed to convey core gameplay themes; specifically, a font with mystical connotations was chosen to reinforce the esoteric narrative setting.

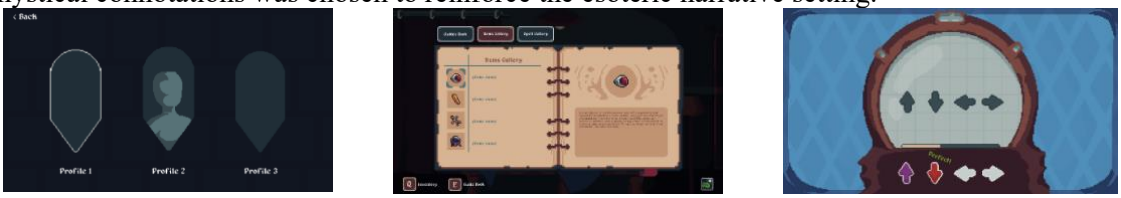

Figure 10. "Dukun Start-Up" Interactive UI.
Source: Personal document

(3) Items

The final asset category, comprising in-game items, was meticulously crafted utilizing the same standardized production pipeline. These items were designed to function as culturally significant artifacts, representing a spectrum of objects employed in both traditional and contemporary shamanic practices.

Figure 11. "Dukun Start-Up" Items Sprite.
Source: Personal document

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Iconic examples, which underwent the process of stylistic abstraction and pixel-art adaptation, include ritualistic figurines (e.g., black magic dolls), symbolic talismans (e.g., Semar Mesem), and ceremonial tools such as incense. Their implementation serves to enhance gameplay mechanics while simultaneously anchoring the game's narrative in its designated cultural milieu.

3. Post-Production

The post-production stage is crucial in game development, especially for refining visual assets (Ramamurthy, 2021). This phase after refining the asset. Feedback from a game development mentor was incorporated during this stage to ensure professional standards were met.

The final stage in the development of this game, specifically the visual assets for "Dukun Start-Up," is a pitch deck with a game mentor, the mentor who assessed this game is a mentor from the Agate game studio. In game development, mentor input is vital for boosting creativity, accelerating learning, and ensuring a higher standard of quality in the final product (Williams et al., 2024). After presenting all aspects of the game, the mentor will provide feedback on whether the game meets publication standards. The result is not disappointing, just some revising the sprites parts and fixing bugs for the coding part.

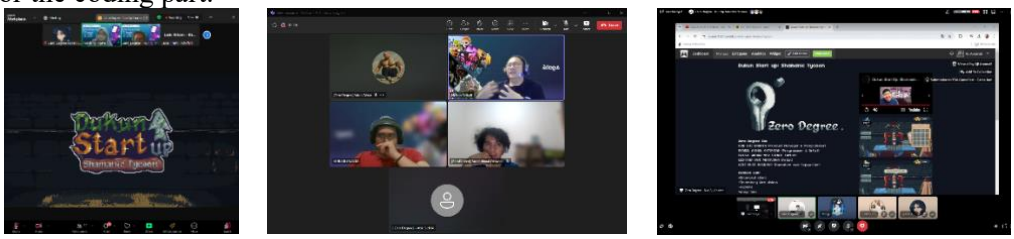

Figure 12. Game Pitch Deck Agate.
Source: Personal document

CONCLUSION

By designing and implementing a full set of pixel art assets with an Indonesian cultural theme for "Dukun Start-Up," this study has fulfilled its main goal. The accompanying discussion on shamanic history further enriches the project. Ultimately, this work does incorporate the cultural practices of shamans into a game to educate the public, especially teenagers. However, it cannot be expected to completely change public perception due to several shortcomings in this study. Based on these findings and limitations, future research should: (1) Expand the scale of user testing to include a larger, more demographically diverse international audience to assess cross-cultural appeal. (2) Explore the implementation of dynamic cultural pixel art, such as develop more about animation, story, character, mechanic, and exploration about Indonesian culture.

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