





Visualization of the Inheritance Concept “Segendong Sepikul” in Wayang Beber Using Augmented Reality

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Abstract. This study explores the visualization of the Indonesian inheritance philosophy “Segendong Sepikul” through Wayang Beber using augmented reality technology. The project aims to digitally preserve local cultural heritage while enhancing public understanding and engagement with traditional philosophical concepts. By integrating AR-based interactive visualizations with Wayang Beber’s storytelling medium, this research bridges classical art and modern digital communication. The methodology involved qualitative content analysis, user experience testing, and the development of an AR application tailored to educational and heritage contexts. Results show improved comprehension of “Segendong Sepikul” and positive responses to digital heritage innovations among target users. This approach facilitates the sustainability, accessibility, and appreciation of intangible cultural assets in Indonesia..

Keywords: Visualization, Segendong sepikul, Wayang beber, Augmented reality, Javanese culture

1 Introduction

Indonesia, as one of the most culturally diverse nations in the world, possesses a vast range of traditional wisdom that serves as both an ethical compass and a symbolic manifestation of collective identity. These local philosophies, or kearifan lokal, are deeply embedded in social practices, artistic expressions, and cultural narratives that reflect harmony, balance, and moral responsibility. Among the Javanese people, one of the most meaningful cultural concepts is Segendong Sepikul, a philosophical metaphor that governs the distribution of inheritance and the equilibrium of social roles between men and women. Literally, Segendong Sepikul translates to “one load carried on the back and two loads carried on the shoulders,” symbolizing differentiated yet complementary burdens of responsibility in life.

Historically, Segendong Sepikul has been understood as an expression of justice in Javanese customary law, where sons inherit a larger portion (sepikul) than daughters (segendong). However, beyond the material dimension, this principle signifies the moral expectation that men bear heavier public and economic responsibilities, while

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women uphold moral and domestic harmony. The philosophy thus implies not inequality, but rather balance and reciprocity in maintaining family and social structure. As emphasized by Javanese scholars and cultural observers, *Segendong Sepikul* encapsulates a form of “proportional equity,” representing harmony (*rukun*) rather than hierarchy (*unggul-nduwur*).

Yet, the modern era poses critical challenges to the preservation of such traditional values. With the rapid advancement of digital technologies and shifting cultural consumption patterns, especially among younger generations, traditional art forms that once transmitted these philosophies are increasingly marginalized. One such medium is *Wayang Beber* — a classical Javanese storytelling art that utilizes scroll paintings to narrate moral and philosophical tales. Once a central medium for communal reflection and ethical education, *Wayang Beber* has now become obscure, confined mostly to academic or museum contexts.

To address this cultural gap, technological mediation becomes a strategic pathway. The integration of *Wayang Beber* with digital visualization, particularly Augmented Reality (AR), allows for a recontextualization of traditional narratives in ways that are engaging, interactive, and accessible. AR provides the ability to superimpose digital content over real-world imagery, enabling audiences to “experience” cultural artifacts through dynamic layers of meaning. In the context of *Segendong Sepikul*, AR not only revitalizes interest in traditional art but also opens new interpretative spaces for philosophical and communicative inquiry.

The specific case explored in this study is a mural of *wayang beber* titled *Segendong Sepikul* by Solo-based artist Dani Iswardana. The mural, installed on a restaurant wall in Solo, captures the essence of Javanese philosophical storytelling and serves as a tangible entry point for digital reinterpretation.



Fig. 1. *Wayang Beber* “*Segendong Sepikul*” mural

This study, therefore, seeks to develop a digital reinterpretation of the *Wayang Beber Segendong Sepikul* narrative through Augmented Reality as both a technological and

communicative innovation. It aims to translate local philosophical concepts into an experiential digital format that can appeal to a contemporary audience while maintaining fidelity to their original meaning. The initiative aligns with Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 5 (Gender Equality), and SDG 11 (Sustainable Cities and Communities), by promoting inclusive access to cultural knowledge and enhancing public engagement with heritage through technology.

In short, this research integrates cultural communication and digital innovation to explore how philosophical heritage can be preserved and reinterpreted through the affordances of Augmented Reality. It combines traditional aesthetics with modern interactivity, ensuring that Javanese wisdom continues to evolve — not as a static relic of the past, but as a living, adaptive cultural language in the digital era.

2. Literature Review

2.1 Local Wisdom and Javanese Philosophy

Local wisdom, or *kearifan lokal*, refers to the collective intelligence embedded in the values, ethics, and social practices of traditional communities. It serves as a moral compass and identity marker that guides communal life (Syukri & Suriani, 2024). In the Javanese worldview, this wisdom is conveyed not merely through language but through symbolic expressions, rituals, and art forms that encode moral philosophies. Among the most prominent of these is *Segendong Sepikul*, a principle rooted in Javanese inheritance customs.

Traditionally, this principle dictates that male heirs receive a larger share of inheritance (*sepikul*) compared to female heirs (*segendong*). However, the concept is not purely economic. Rather, it symbolizes a philosophical equilibrium — that responsibilities are distributed according to one’s capacity and role in maintaining familial and societal balance. As observed by Lestari et al. (2023), Javanese customary inheritance law emphasizes proportional justice (*adil lan wajar*) rather than equal division.

Segendong Sepikul thus embodies a moral philosophy of complementarity and harmony, where men and women occupy interdependent spheres. In modern interpretation, it invites reflection on gender roles not as fixed hierarchies but as evolving, dialogic partnerships. This understanding aligns with Wood’s (2015) notion of gendered communication, which stresses mutual understanding and collaboration as the basis for social stability.

2.2 Cultural Communication and Symbolic Mediation

In the study of cultural communication, Stuart Hall (1997) argued that cultural artifacts function as systems of representation through which meaning is produced and circulated. *Wayang Beber*, in this sense, operates as a medium of symbolic communication — where characters, gestures, and visual motifs express moral teachings and social critique. The *Segendong Sepikul* narrative, depicted through the figures of Brayut and

his wife, communicates ethical commentary on responsibility, parenthood, and justice in everyday life.

From a communicative perspective, traditional art forms like *Wayang Beber* act as sites of intergenerational dialogue. Carbaugh (1996) described culture as a “communicative resource,” emphasizing that stories, rituals, and performances are active modes of transmitting and negotiating identity. Through this lens, *Wayang Beber* serves as a performative discourse that translates abstract philosophical concepts into tangible aesthetic experience. Yet, in the postmodern context characterized by rapid media saturation and technological acceleration, such symbolic forms risk becoming detached from everyday consciousness — a phenomenon that Baudrillard termed “the disappearance of the real.”

Addressing this disconnection requires *remediation* — the process by which older media are transformed and renewed through newer technologies (Bolter & Grusin, 1999). Augmented Reality offers precisely this potential: to reintegrate traditional meaning systems into contemporary communicative forms without erasing their cultural depth.

2.3 Digital Heritage and Augmented Reality

Digital heritage technologies have emerged as vital tools for cultural preservation and education. Bekele et al. (2018) note that AR and VR provide new possibilities for visualizing and interacting with cultural artifacts, offering immersive experiences that enhance audience engagement. In cultural contexts, AR serves as a bridge between tangible heritage (such as visual art or architecture) and intangible heritage (such as philosophy, mythology, and ritual). It does so by overlaying digital narratives onto physical environments, enabling users to perceive traditional meanings through multisensory interaction.

Previous studies demonstrate the effectiveness of AR for cultural revitalization. Subingar, Virginia, and Sary (2021) developed an AR-based system for recognizing *Wayang Kulit* characters, allowing users to scan markers and view animated wayang figures in 3D. Similarly, Aditya (2022) employed digital illustration for the educational dissemination of *Wayang Beber Pacitan*, showing how interactive visualization can recontextualize ancient art in digital platforms. These works align with tom Dieck and Jung’s (2017) argument that AR technologies enhance the “value experience” of heritage sites by making cultural knowledge participatory and personalized.

Within this discourse, the *Segendong Sepikul* project positions itself not only as a digital preservation initiative but also as a communicative intervention. It extends beyond the technical reproduction of visual forms to include the semiotic and ethical dimensions of Javanese philosophy. By enabling users to encounter philosophical meaning through interactive AR, this research exemplifies what Couldry and Hepp (2017) call *the mediated construction of reality* — a process where cultural values are reconstructed through technological mediation rather than lost to modernization.

2.4 Research Gap and Conceptual Framework

While numerous studies have applied AR for cultural or educational purposes, few have explicitly examined its potential to convey *philosophical* or *ethical* content. Most AR heritage projects emphasize aesthetic engagement or tourism value, overlooking the interpretive complexity of local philosophies. This research fills that gap by positioning AR not merely as a visual medium but as a communicative interface for ethical reflection. It introduces the notion of **digital hermeneutics of local wisdom** — an approach that combines technological design, semiotic analysis, and cultural communication theory to interpret traditional values within digital interaction.

The conceptual framework of this study integrates three key domains:

1. **Local Wisdom Theory** – emphasizing Javanese philosophy as a source of ethical orientation and social harmony.
2. **Cultural Communication** – viewing *Wayang Beber* as a symbolic narrative that mediates cultural identity through performative storytelling.
3. **Digital Mediation (AR)** – utilizing augmented reality to visualize and reinterpret traditional philosophy in a participatory digital space.

Together, these frameworks establish the foundation for the methodology described in the next section, which operationalizes cultural interpretation through design and user experience.

3. Methodology

3.1 Research Design

This research employed a qualitative–developmental approach, combining cultural interpretation with digital system design. The study aimed to visualize the philosophical concept of *Segendong Sepikul* in *Wayang Beber* using Augmented Reality (AR), positioning technology as both a communicative medium and an instrument for cultural preservation. The research design followed the **Multimedia Development Life Cycle (MDLC)** model (Roedavan et al., 2022), which provides a structured framework for developing interactive media through iterative stages of analysis, design, production, testing, and evaluation.

The MDLC approach was selected because it integrates user-centered design principles with content development suited for cultural heritage applications. Each stage not only addresses the technical aspects of AR development but also ensures that the philosophical and semiotic meanings embedded in *Wayang Beber* are preserved during digital transformation. The outcome of this process was an AR-based cultural artifact that could be experienced through smartphones, allowing users to interact with visualized elements of Javanese heritage.

This study utilizes a qualitative–developmental approach, employing the Multimedia Development Life Cycle (MDLC) framework to ensure a structured production of the AR application. The process is divided into six iterative stages:

1. **Concept Development:** Defining objectives to serve as both an educational medium and a symbolic communication interface.
2. **Design:** Creating UI wireframes, storyboards, and technical diagrams, including Use Case and Activity Diagrams to map user interactions.
3. **Material Collection:** Digitally capturing and segmenting the original mural into layers using Adobe Photoshop for color consistency and asset integrity.
4. **Assembly and Programming:** Converting assets into 3D models via Blender and integrating them into the Assembler Edu platform for mobile accessibility.
5. **Testing:** Conducting functional tests for animation synchronization and cross-device compatibility.
6. **Distribution:** Deploying the experience through QR codes at the physical site (Bubur Bakar Solo).

3.2 Data Collection and Analysis

Data were collected using three primary methods: (1) **Focus Group Discussion (FGD)** with cultural practitioners, (2) **visual documentation and asset analysis**, and (3) **usability testing** with target users. The **FGD** was conducted in Solo, Central Java, involving the *Wayang Beber* artist Dani Iswardana Wibowo, cultural observers, and community representatives. The discussions explored the narrative structure of *Segendong Sepikul*, symbolic interpretations of its visual elements, and its relevance in contemporary moral discourse. The insights gained from these sessions informed the conceptual design and storytelling logic embedded in the AR prototype.

In addition, **visual analysis** was performed on the *Wayang Beber* mural installed at “Bubur Bakar Solo,” which served as the primary visual reference. The mural depicts the story of Brayut and his wife — archetypal figures representing familial harmony and social responsibility. The artistic composition of this mural, including its color schemes, posture symbolism, and spatial sequencing, guided the development of 3D assets and interactive features.



Fig. 2. Photo of the mural in Bubur Bakar restaurant, Solo

For evaluation, the **System Usability Scale (SUS)** developed by Brooke (2013) was used to measure user satisfaction and interface intuitiveness. Ten respondents — consisting of local visitors, art enthusiasts, and students — participated in the usability testing. Their responses were analyzed quantitatively using the standard SUS scoring formula, and qualitatively through open-ended feedback on the communicative and educational aspects of the AR experience.

To validate the system, System Usability Scale (SUS) testing was conducted with a sample of 10 participants.

- **Participant Characteristics:** The group consisted of local visitors, art enthusiasts, and university students to represent a diverse target audience.
- **Data Analysis:** Quantitative scores were calculated using standard SUS formulas, while qualitative insights were gathered through Focus Group Discussions (FGD) and open-ended feedback regarding cultural comprehension

3.3 Development Stages

The development of the *Segendong Sepikul* Augmented Reality (AR) application followed the **Multimedia Development Life Cycle (MDLC)** framework to ensure methodological rigor, reproducibility, and coherence between cultural content and technological implementation. MDLC was selected because it provides a structured yet flexible model suitable for cultural heritage visualization and interactive media development.

The development process consisted of **six iterative stages**, as described below:

1. **Concept Development** – This stage focused on defining the conceptual foundation of the AR application. The primary objective was to transform *Wayang Be-*

ber—a static, two-dimensional cultural artifact—into an interactive digital medium capable of conveying the philosophical meaning of *Segendong Sepikul*. The target users were identified as restaurant visitors, students, and the general public with limited prior exposure to *Wayang Beber*. At this stage, AR was positioned not merely as a visualization tool, but as a **symbolic communication interface**, enabling users to interpret Javanese philosophical values through motion, spatial interaction, and narrative cues.

- 2. **Design** – The design stage translated conceptual objectives into technical and narrative structures. This included: User Interface (UI) wireframes, Storyboards for AR scenes, Use Case Diagrams and Activity Diagrams. The interaction flow was designed to be intuitive: users scan a QR code near the mural, activate WebAR, and observe animated 3D figures representing Brayut and his wife. Narrative emphasis was placed on visual metaphors—specifically the contrast between *sepikul* (double burden) and *segendong* (single burden)—to reinforce philosophical meaning.

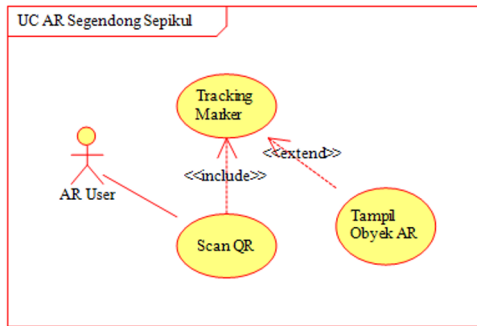


Fig. 3. Use Case Diagram

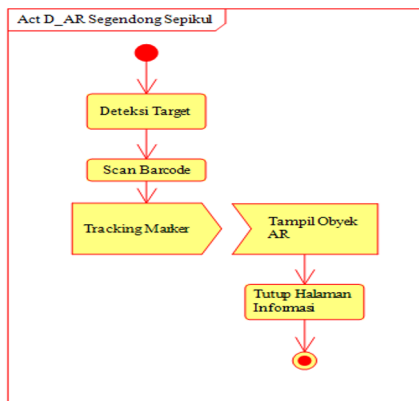


Fig. 4. Activity Diagram

- 3. **Material Collection** – Material collection involved **digital documentation and segmentation** of the original *Wayang Beber* mural created by Dani Iswardana

Wibowo in Solo. High-resolution photographs were processed using Adobe Photoshop to extract character elements, color schemes, and symbolic attributes while preserving visual authenticity. These materials formed the basis for both 3D modeling and semiotic consistency between the physical mural and its digital reinterpretation.

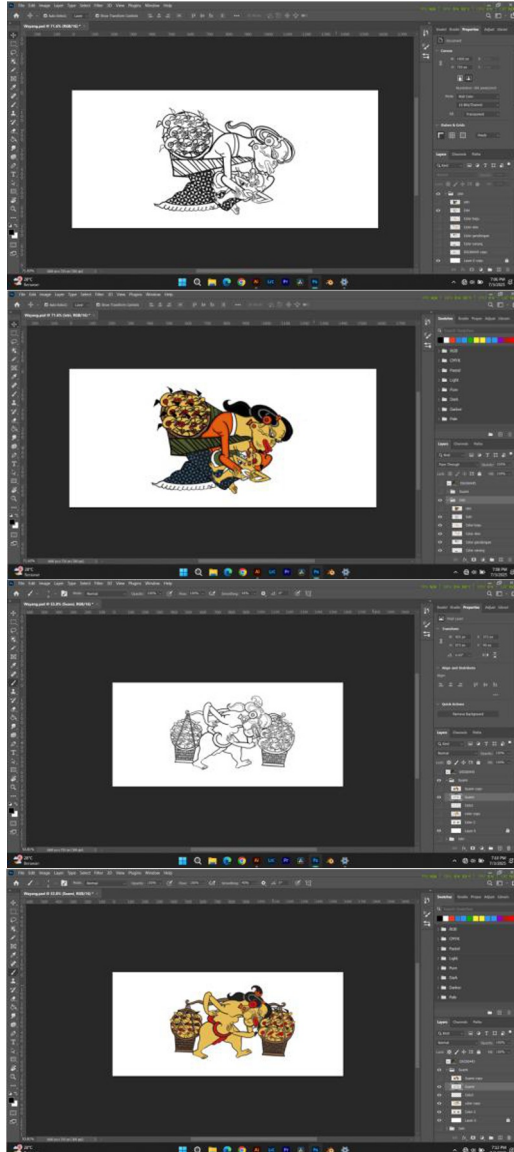


Fig. 5. Asset design and coloring of Brayut and his wife

4. **Assembly and AR Programming** – In this stage, 2D assets were converted into 3D models using Blender and Meshy.AI, allowing animated motion while retaining traditional stylistic features. The 3D assets were then integrated into Assembler Edu, a WebAR platform that supports marker-based interaction without requiring application installation. Programming focused on: Marker recognition accuracy, Animation synchronization, User-triggered interaction stability. This ensured that the AR experience remained accessible across a wide range of mobile devices.
5. **Testing** – Functional testing was conducted to evaluate: Marker detection performance; Animation responsiveness; Cross-device compatibility. Testing revealed stable performance under normal lighting conditions, with minor limitations observed in low-light environments and older devices. These findings informed the usability evaluation discussed in the Results section.
6. **Distribution and Evaluation** – The finalized AR experience was deployed through **QR codes placed near the physical mural** at the Bubur Bakar restaurant in Solo. This distribution strategy allowed users to experience AR in direct relation to the original cultural artifact, reinforcing the connection between physical heritage and digital mediation.

3.4. Analytical Framework

This study employed a dual analytical framework integrating technical usability evaluation and cultural–communicative interpretation to comprehensively assess both system performance and symbolic meaning transmission.

1. **Technical Evaluation:** System Usability Scale (SUS). Usability testing was conducted using the System Usability Scale (SUS) (Brooke, 2013), a standardized instrument widely applied in human–computer interaction research. Ten participants—comprising local visitors, art enthusiasts, and university students—were involved to represent the intended user demographic. SUS analysis focused on: Ease of use, Interface clarity, System consistency, User confidence during interaction. Quantitative scores were calculated following standard SUS procedures, producing an average score of 60.5, which falls within the Marginally Acceptable range (Bangor et al., 2009). This score indicates that while the system is functional and understandable, further interface refinement could enhance user experience.
2. **Cultural–Communicative Interpretation:** Beyond technical performance, this research examined how users interpreted the philosophical meaning of Segendong Sepikul through AR interaction. This analysis employed a qualitative interpretive approach grounded in: Cultural communication theory (Hall, 1997; Carbaugh, 1996), Gendered communication theory (Wood, 2015; Tannen, 1990), Mediatization theory (Couldry & Hepp, 2017). User feedback, observational notes, and discussion outcomes were analyzed thematically to assess whether AR visualization facilitated moral reflection, cultural understanding, and symbolic awareness. This framework allowed the study to eval-

uate AR not only as a usable system, but as a medium of symbolic mediationcapable of translating local wisdom into contemporary communicative forms. This dual framework allowed the research to assess not only the system’s usability but also its symbolic resonance, bridging the technical and philosophical dimensions of communication technology.

4. Results and Discussion

4.1 Development Outcomes and Technical Achievements

The development of the Segendong Sepikul Augmented Reality (AR) application successfully transformed a static mural into an interactive digital experience that connects tradition with technology. The completed prototype allows users to scan a QR code located near the physical mural using a mobile device, activating an AR scene where 3D models of Brayut and his wife appear in motion, accompanied by contextual narration and philosophical cues.

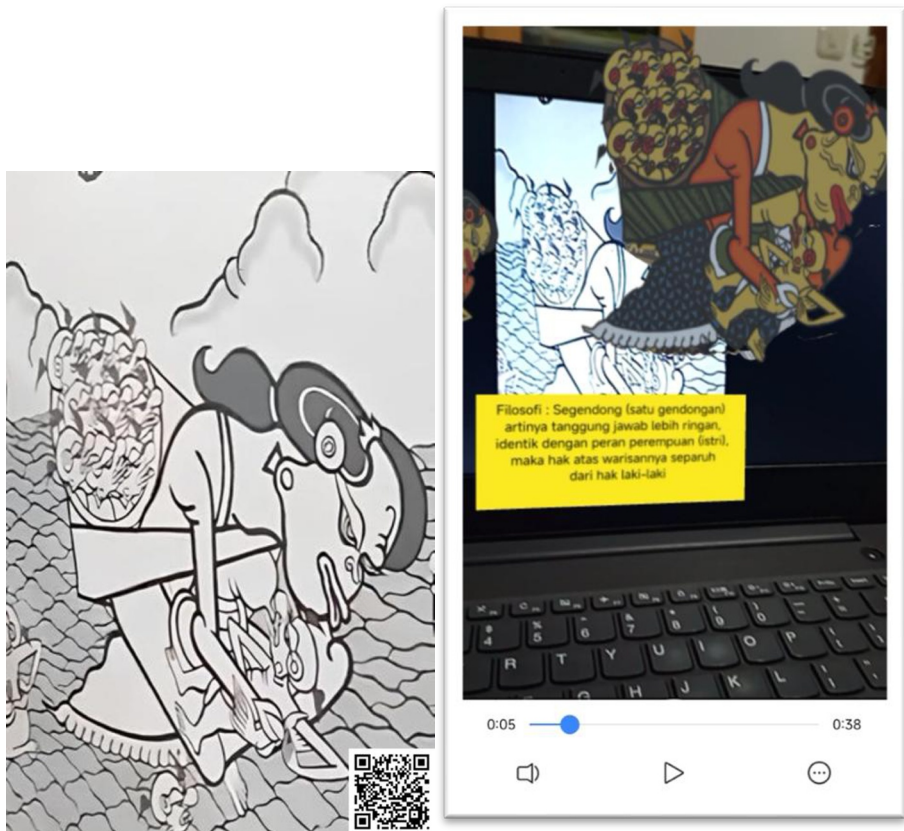


Fig. 6. Sample Target Image (Barcode) and AR Visualization Output with Brayut figure

The use of Assembler Edu enabled seamless web-based AR interaction without requiring a downloadable app, increasing accessibility for casual visitors. The technical workflow—ranging from 2D illustration extraction to 3D modeling and animation—demonstrated the feasibility of applying Multimedia Development Life Cycle (MDLC) to cultural visualization projects. The 3D reconstruction process preserved essential symbolic attributes from the original mural, such as the postural representation of burden-bearing (sepikul and segendong), which visually communicates the balance of responsibility between men and women.

From a technological standpoint, the integration of physical and virtual elements achieved a functional hybrid reality—a form of mediatized continuity (Couldry & Hepp, 2017)—where traditional meaning is not replaced by technology but extended into new experiential contexts. This aligns with the paradigm of “digital cultural mediation,” emphasizing technology as a vessel for symbolic continuity rather than disruption.

4.2 User Experience and Usability Findings

The AR prototype underwent usability testing with ten respondents representing diverse user categories: local residents, art enthusiasts, and university students. The evaluation followed the System Usability Scale (SUS) (Brooke, 2013), which provided quantitative and qualitative insights into user interaction experience.

The aggregated SUS score was 60.5, corresponding to a Marginally Acceptable range (Bangor et al., 2009). Although this indicates moderate user satisfaction, the overall impression was positive. Participants expressed appreciation for the novelty and educational potential of the experience, with comments highlighting the “meaningful connection between art and technology” and the “ease of understanding cultural philosophy through visual storytelling.”

Minor usability issues were identified, particularly concerning marker recognition under low lighting and animation lag on older mobile devices. Nevertheless, users agreed that the application was easy to operate and effective in stimulating curiosity about Javanese philosophy. The feedback reflects a balance between technical affordance and cultural comprehension—suggesting that even with moderate usability, meaningful cultural transmission can occur when visual narrative and symbolic coherence are maintained.

The “improved comprehension” mentioned in the study is supported by thematic analysis of user feedback:

- **Symbolic Awareness:** Users reported that the 3D movement of the sepikul (double burden) and segendong (single burden) provided a clearer “visual storytelling” experience of Javanese inheritance philosophy compared to the static mural.
- **Educational Engagement:** Participants highlighted a “meaningful connection between art and technology,” noting that the AR cues helped them reflect on gendered communication and social harmony.

- **Identified Improvements:** Qualitative feedback also pointed to technical hurdles, such as marker recognition issues in low-light environments and lag on older mobile devices, which will be addressed in future iterations

The claim of “improved comprehension” is supported by both quantitative and qualitative findings. The SUS score of 60.5 confirms that users were able to operate the system with minimal difficulty, while qualitative feedback indicates enhanced understanding of the Segendong Sepikul philosophy. Participants reported that the animated contrast between sepikul and segendong enabled clearer visualization of gendered responsibility and social balance compared to static mural observation alone.

4.3 Communicative Interpretation of Segendong Sepikul

Beyond its technical function, the Segendong Sepikul AR project embodies a process of cultural communication, where traditional wisdom is translated into digital semiotics. The juxtaposition of sepikul (double burden) and segendong (single burden) serves as a metaphorical model of communication ethics within the Javanese worldview. Here, gendered roles are not hierarchical but dialogical: each complements the other to sustain family harmony.

From the perspective of gendered communication theory (Wood, 2015; Tannen, 1990), this reflects the interplay between instrumental (masculine) and affective (feminine) communication modes. The Wayang Beber narrative and its AR adaptation both illustrate how effective social functioning arises from these complementary dynamics. When the philosophy is rendered in AR, these symbolic contrasts become multisensory—users can see, hear, and experience the relational metaphors in motion, deepening their interpretive engagement.

Furthermore, Segendong Sepikul resonates with broader discussions in cultural communication about representation and meaning (Hall, 1997). It reaffirms that symbols are not fixed but continuously reinterpreted through mediation. The use of AR transforms the Wayang Beber from a static artifact into a living narrative—a communicative act that reanimates local wisdom in a contemporary medium. This process demonstrates how mediatization (Couldry & Hepp, 2017) can function as a form of cultural sustainability, not as distortion but as renewal.

4.4 Cultural Relevance and Educational Impact

The educational potential of the AR Segendong Sepikul experience lies in its ability to transform passive observation into active participation. By engaging with the visualized moral narrative, users not only learn about inheritance customs but also reflect on broader social ethics such as fairness, cooperation, and mutual responsibility. As participants interact with the digital characters, they are effectively co-constructing meaning—a process aligned with constructivist learning theories and intercultural communication pedagogy.

This approach aligns with the UNESCO framework for safeguarding intangible cultural heritage, which emphasizes transmission through participatory and experiential means. The project thus contributes to Sustainable Development Goal 11 (Sustainable Cities and Communities) and Goal 4 (Quality Education) by enhancing cultural literacy and promoting the continuity of local values in the digital era.

Moreover, the use of AR in this context demonstrates how emerging technologies can serve as instruments of cultural resilience. Instead of displacing traditional media, digital interfaces like AR act as mediators that extend the cultural life of artifacts into new communicative ecosystems. This paradigm reinforces what Bekele et al. (2018) describe as the “hybridization of heritage experience,” where physical and digital heritage co-exist to enrich cultural understanding.

4.5 Theoretical Implications

The findings of this study extend existing communication theory by situating AR as a form of symbolic mediation—a digital interface through which philosophical and cultural meanings are re-articulated. In this sense, AR can be seen as a meta-medium (Hepp, 2020), capable of merging semiotic layers across visual, auditory, and spatial dimensions.

By visualizing Segendong Sepikul within this medium, the study highlights how digital environments can function as spaces of meta-reality—where users become aware of both the representational construct and the original philosophy it conveys. This reflexive engagement not only preserves heritage but encourages critical thinking about its relevance in contemporary social contexts.

Theoretically, this bridges cultural communication, media semiotics, and digital heritage studies, proposing that technological mediation should not be viewed as antithetical to authenticity, but as an evolution of the communicative process itself. The Segendong Sepikul AR project exemplifies how cultural values can be reinterpreted without being decontextualized—remaining grounded in local philosophy while speaking in the language of global digital culture.

6. Conclusion and Future Work

This study demonstrates how the integration of Augmented Reality (AR) and cultural communication can serve as an effective strategy for preserving and revitalizing local philosophical values in Indonesia. By transforming the Javanese concept of *Segendong Sepikul*—a philosophy of balance, justice, and complementarity—into an interactive digital experience, the research bridges the gap between heritage and modernity. The AR application developed from the *Wayang Beber* mural successfully conveys symbolic meanings in an engaging and accessible format, allowing users to experience cultural wisdom through multisensory interaction.

The findings highlight two major contributions. First, at the **technological level**, this study validates the applicability of the **Multimedia Development Life Cycle (MDLC)** framework for digital heritage projects, ensuring both technical efficiency

and narrative coherence. The usability evaluation (SUS score 60.5) confirms that while improvements are still needed in design optimization, the prototype effectively delivers cultural content and stimulates user engagement. Second, at the **cultural-communicative level**, the research provides a model for how AR can function as a medium of *symbolic continuity*—where local philosophies are not merely archived but reinterpreted within contemporary communicative environments. Through this process, AR becomes a form of *meta-reality*—a mediated reconstruction of tradition that allows for reflective dialogue between past and present.

From an educational and policy perspective, the *Segendong Sepikul* AR project contributes to the broader agenda of **digital cultural literacy** and **sustainable heritage education**. It aligns with the principles of **Sustainable Development Goals (SDGs)**, particularly Goal 4 (Quality Education), Goal 5 (Gender Equality), and Goal 11 (Sustainable Cities and Communities), by promoting inclusive access to cultural learning and equitable representation of gendered values within local wisdom frameworks. The participatory nature of AR enhances user awareness, empathy, and ethical reflection—transforming cultural preservation into an active learning process rather than a static display.

Future work should expand on this research by developing **cross-platform interoperability**, allowing AR experiences to be accessed via web, mobile, and immersive headsets. Further usability testing with larger and more diverse user groups would strengthen design validation and pedagogical impact. In addition, interdisciplinary collaboration between communication scholars, technologists, and cultural practitioners can foster a broader framework of *digital hermeneutics of local wisdom*—a paradigm in which technology becomes an instrument for ethical storytelling and cultural sustainability.

Ultimately, this research underscores that the preservation of cultural identity in the digital age depends not only on technology, but on *meaningful communication*. By translating the moral philosophy of *Segendong Sepikul* into AR form, this project affirms that tradition is not an artifact of the past but a living discourse—continually reimaged through the evolving languages of media and humanity.

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Disclosure of Interests

The authors declare that they have **no competing interests** relevant to the content of this article. No financial relationships, personal affiliations, or institutional commitments influenced the results or interpretations presented in this study. All procedures were conducted in accordance with academic ethics and research integrity guidelines of Universitas Budi Luhur.

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