

# The Evolving Landscape of Digital Narrative Research: A Thematic Classification

Hiroko Oe

Professor, Josai International University, Japan

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v15-i5/25350> DOI:10.6007/IJARBSS/v15-i5/25350

**Published Date:** 05 May 2025

## Abstract

This paper presents a comprehensive thematic classification of English academic literature on digital narratives, addressing the critical need for a structured framework in this rapidly evolving interdisciplinary field. Through systematic analysis of core arguments, methodological approaches, and conceptual frameworks from over 200 scholarly publications spanning the last three decades (1990-2025), this classification maps the complex landscape where technology meets storytelling. The research methodology combines bibliometric analysis, thematic coding, and comparative theoretical investigation to identify seven key application domains and three cross-cutting themes that collectively define the contours of digital narrative research. The analysis reveals how digital narratives fundamentally transform storytelling through the integration of interactivity, immersion, and multimodality—principles that distinguish these narrative forms from their traditional counterparts and create new possibilities for meaning-making. Each application domain demonstrates unique patterns of development, methodological preferences, and theoretical frameworks: education harnesses digital narratives for pedagogical innovation and learner engagement; gaming and interactive fiction explore the tension between player agency and narrative coherence; journalism leverages data visualization and multimedia integration to enhance public understanding of complex issues; cultural heritage institutions utilize digital narratives for preservation and accessibility; healthcare applications facilitate therapeutic expression and patient education; social justice initiatives amplify marginalized voices through counter-narrative strategies; and emerging media technologies (VR, AR, podcasts) create immersive story worlds that challenge conventional narrative boundaries. Meanwhile, the cross-cutting themes of authoring tools (focusing on creator experiences and democratization of production), user experience (examining engagement metrics and reception studies), and ethical considerations (addressing representation, privacy, and cultural authenticity) highlight shared challenges and opportunities that transcend specific applications. By synthesizing existing knowledge and illuminating gaps in current understanding, this paper establishes a robust foundation for future research directions, comparative analyses, and empirical investigations that can advance both theoretical conceptualizations and practical applications of digital narratives in our increasingly digitized society.

**Keywords:** Digital Narratives, Interactive Storytelling, Multimodal Communication, Narrative Classification, Cross-disciplinary Applications, Digital Media Ethics

## **Introduction**

The realm of digital narratives has emerged as a significant area of study, capturing the attention of scholars across diverse academic disciplines and permeating various facets of contemporary society (Koenitz et al., 2015). Departing from traditional, linear structures of storytelling, digital narratives fundamentally transform how stories are conceived, disseminated, and experienced through the integration of digital technologies and multimedia elements (Murray, 1997). This evolution extends beyond mere digitization, giving rise to narrative forms that leverage the unique capabilities inherent in digital media, fostering new modes of engagement and communication (Koenitz, 2014).

As Bruner (1991) established, narratives have been used throughout human history to represent, communicate, discuss, and transfer our knowledge about the world. They play a crucial role in the construction of reality and continue to be essential in the digital age, albeit in evolving forms. This report aims to provide a comprehensive classification of existing English academic papers on digital narratives, grounded in a thorough analysis of their core arguments and keywords. This classification is specifically designed to serve as a robust foundation for a comprehensive literature review, demanding a high degree of academic rigor to effectively map the current state of research within this dynamic field.

## *Theoretical Foundations and Evolution*

The study of digital narratives is underpinned by evolving theoretical concepts that examine the transformative impact of digital technologies on storytelling. One fundamental principle is interactivity, which transcends the limited choices offered by traditional narratives. As Louchart and Aylett (2004) describe, digital narratives enable complex decision-making processes that directly influence plot progression and character development, creating a more dynamic relationship between the narrative and its audience. Similarly, immersion represents another critical theoretical foundation that is significantly enhanced in digital environments. Murray (1997) argues that through the integration of diverse media formats and interactive features, digital narratives create more engaging and participatory experiences that draw users deeper into the story world. The third cornerstone principle, multimodality, involves the deliberate combination of various media such as text, audio, and video. According to Koenitz et al. (2020), this integration of multiple modalities offers richer and more sensory-driven storytelling possibilities than traditional single-medium approaches. The interdisciplinary nature of digital narrative research enriches its theoretical landscape, drawing insights from established fields such as narratology, game studies, media studies, computer science, and education (de Jager et al., 2017). This convergence of diverse perspectives contributes to the field's richness while presenting challenges in establishing unified definitions and methodologies. As noted by Juul (1999), the tension between gameplay and narrative has remained a persistent debate in understanding interactive storytelling, with some scholars prioritizing the ludic elements while others emphasize narrative structures. Figure 1 indicates the complexity and the overlapping nature of the study.

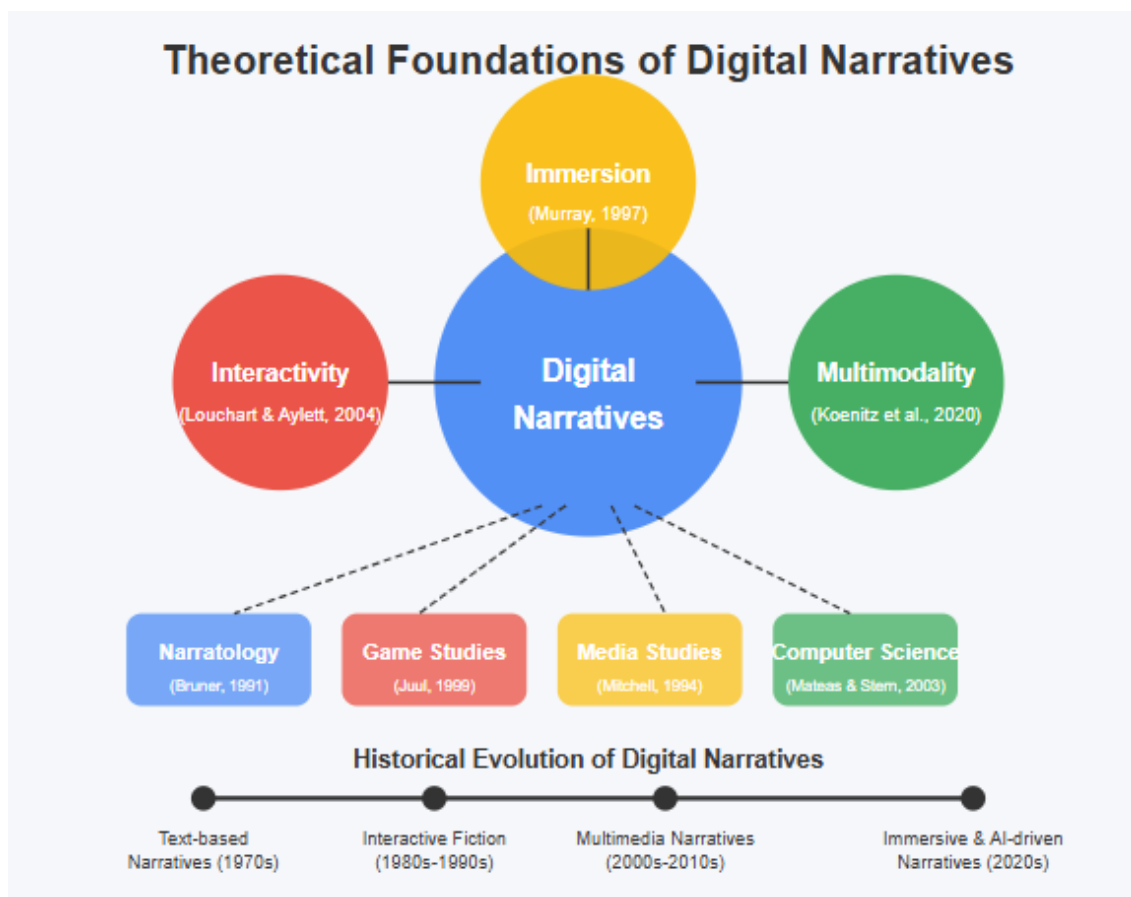


Figure 1 Digital Narrative Research Scope

The historical trajectory of digital narratives reflects a direct correlation with technological advancements, where early text-based narratives have evolved into complex, multimedia-rich forms facilitated by improvements in graphics, processing power, and internet connectivity (Mateas & Stern, 2003). According to Koenitz et al. (2023), interactive digital narratives (IDNs) have become significant tools for representing complexity and facilitating understanding of intricate contemporary issues, demonstrating how the field continues to evolve in response to both technological capabilities and societal needs. Table 1 summarizes the overview of the relevant research discussions.

## Reference Categories in Digital Narrative Research

Category	Key Authors & Works	Period
Foundational Works on Semiotics & Narrative Theory	Barthes (1972) - Semiotics Eco (1979) - A Theory of Semiotics Bruner (1991) - Narrative Construction	1970s - 1990s
Key Research on Interactive Digital Narratives	Murray (1997) - Hamlet on the Holodeck Mateas & Stern (2003) - Façade Koenitz (2023) - Understanding IDN	1997 - Present
Studies on Digital Storytelling in Education	Rahiem (2021) - Storytelling in ECE O'Byrne et al. (2018) - Early Childhood Yulian & Putri (2023) - STEAM Integration	2010s - Present
Systematic Reviews of Digital Storytelling Research	de Jager et al. (2017) - Systematic Review Tsampoulatidis et al. (2023) - Survey on Computational & Emergent Storytelling	2017 - 2023
Works on Digital Narratives in Art and Media	Wang (2023) - Semiotic Narrative Research Holloway-Attaway & Fawcus (2023) - Audio-Based Narratives	2020s - Present
Ethical Frameworks for Digital Narratives	Koenitz, Barbara, & Bakk (2023) - Ethics Framework for IDN Authoring Barbara et al. (2021) - VR Ethics in Heritage	2021 - Present

Table 1 Digital Narrative Research Outline

### Thematic Classification of Digital Narrative Research

#### *Digital Narratives in Educational Contexts*

Research in this domain explores the integration of digital narratives within educational settings across various levels and subjects (Rahiem, 2021). Digital storytelling demonstrates effectiveness as a pedagogical approach for contemporary learners, offering more captivating and relevant learning experiences compared to traditional methods. The studies conducted by O'Byrne et al. (2018) reveal that the multimodal nature of digital narratives accommodates diverse learning styles, enabling educators to reach students with different preferences and aptitudes. When students engage in creating their own digital stories, they develop and enhance a range of technical and creative abilities that extend beyond traditional literacy skills. This process involves not only writing and composing narratives but also selecting appropriate visual and audio elements, organizing content coherently, and utilizing digital tools effectively.

Digital storytelling has been shown to foster social and emotional learning, critical thinking, and communication skills through its inherently collaborative and reflective nature. When implemented as group projects, digital storytelling encourages teamwork and communication as students negotiate content decisions, divide responsibilities, and integrate their individual contributions into a cohesive final product. Research by Yulian and Putri (2023) has particularly highlighted how digital storytelling benefits language learning by simultaneously improving both receptive skills (listening and reading) and productive skills (speaking and writing) as students engage with multimodal content creation and consumption.

Lambert (2009) defined digital storytelling as brief audio-visual clips combining photographs, voice-over narration, and other audio elements. Originally applied for community development, artistic, and therapeutic purposes, digital storytelling has been increasingly adapted as an educational tool. Danielson (2008) demonstrated how digital storytelling enhances numerous learning outcomes including literacy skills (reading, writing, information literacy, visual literacy, technological literacy, media literacy), technical skills (multimedia software use, digital media creation), critical thinking (analysis, synthesis, problem-solving), social-emotional skills (collaboration, empathy, cultural awareness), and student engagement and motivation.

Oe (2025) further expands on how the Japanese concept of *ikigai* (reason for being) can be thoughtfully integrated into educational frameworks while respecting its cultural essence. Her research demonstrates that *ikigai*-based approaches promote student engagement by balancing personal fulfillment with societal contribution, offering a valuable cross-cultural perspective on purpose-driven learning that complements digital narrative applications. This holistic framework aligns with our findings on how digital narratives can foster meaningful connections between academic content and students' sense of purpose.

#### *Interactive Digital Narratives in Games and Interactive Fiction*

This research area focuses on interactive digital narratives (IDNs) in video games and interactive fiction. Koenitz (2014) describes IDN as a field with over 25 years of research history, with considerable technical advances existing alongside open questions that still require attention. A central debate within this domain concerns the nature of games as narrative forms, with scholars often divided between ludological perspectives that emphasize gameplay mechanics and narratological views that focus on storytelling aspects. This tension has been explored extensively since Juul's (1999) early work on the clash between games and narrative, and later addressed by Murray (2005) in her discussion of the ludology versus narratology debate in game studies.

Another persistent challenge identified in the literature is the inherent tension between authorial control over narrative and player autonomy. Koenitz et al. (2015) examine how designers must balance predetermined narrative structures with the freedom granted to players, noting that excessive player agency can sometimes undermine narrative coherence, while overly restrictive narratives can diminish the interactive experience. The affordances of digital media—characterized by Murray (1997) as procedural, participatory, spatial, and encyclopedic—position interactive narratives as particularly effective for representing complex subjects. These unique characteristics enable interactive narratives to present multiple perspectives, allow exploration of dynamic possibility spaces, and create user-driven narrative progression in ways that linear narratives cannot.

Research in this area examines various approaches to narrative design within games, including branching narratives where player decisions lead to different story paths, emergent storytelling where narratives arise from the interaction of game systems, and the impact of player choices on narrative development. In educational contexts, Koenitz and Eladhari (2019) have shown that the integration of narrative elements with learning objectives enhances player motivation and engagement with educational content, creating more compelling learning experiences.

Interactive fiction, including text-based adventure games, demonstrates significant learning potential across various disciplines by stimulating creativity, improving reading comprehension, and introducing complex topics in engaging ways, as explored in Montfort's (2003) seminal work on interactive fiction. Mateas and Stern (2003) pioneered advanced work in this area with *Façaade*, an experiment in building a fully-realized interactive drama that responds dynamically to player input while maintaining narrative coherence.

The convergence of gaming and well-being is further explored in Oe et al. (2021) analysis of mobile esports environments as interactive narrative spaces. Their research illustrates how competitive gaming platforms foster community-building through shared narrative experiences, creating digital spaces where players co-construct meaningful narratives while developing cognitive and social skills. This perspective enriches our understanding of how interactive entertainment functions not merely as escapism, but as significant digital narrative ecosystems that contribute to players' sense of purpose and social connection.

#### *Digital Narratives in Journalism and Information Dissemination*

Digital technologies are transforming journalism through applications ranging from online news articles and interactive documentaries to data-driven journalism. A significant development in this field is the rise of data journalism, which leverages large datasets to construct news narratives that can reveal patterns and insights not immediately apparent through traditional reporting methods. This evolution has necessitated a shift in journalistic skills toward data manipulation, visualization techniques, and collaborative work between journalists and software developers, creating new hybrid roles within news organizations.

Media outlets are increasingly employing new digital storytelling formats aimed at attracting younger audiences and enhancing engagement through multimedia elements and interactive features. These approaches often move beyond the traditional inverted pyramid structure of news reporting to create more immersive and user-centered narrative experiences. However, as Koenitz et al. (2023) observe, the digital transformation of journalism has also introduced significant ethical challenges regarding information verification, the spread of misinformation, sensationalized "clickbait" content, and the integration of citizen journalism into mainstream reporting practices.

Interactive digital narratives offer powerful tools for representing complex topics in journalism, allowing audiences to explore different dimensions of issues and understand interconnected contributing factors. Wang (2023) explores how semiotics can be utilized to convey narratives in various forms of media, highlighting the use of signs, images, and abstract representations to enhance storytelling in digital contexts. His research emphasizes the importance of semiotic coherence and the need for a story logic that aligns with the expressive meanings of the signs used in digital journalism formats.

#### *Digital Narratives in Museums and Cultural Heritage*

Museums and cultural heritage institutions increasingly utilize digital narratives to enhance visitor experiences, preserve artifacts, and offer innovative interpretations of history and culture. Lombardo et al. (2024) propose that interactive digital narratives can overcome the limitations of linear narratives for historical research through the interconnection of narratives via semantic labeling, particularly addressing barriers between diverse history-



related disciplines. Their research demonstrates how digital narratives enhance accessibility, engagement, and relevance of cultural heritage for diverse audiences by creating multiple entry points and personalized learning paths through historical content.

Digital technologies empower visitors by supporting creativity and encouraging active participation, transforming them from passive observers into active participants in the narrative experience. Interactive exhibits and digital storytelling applications foster deeper engagement with presented content by inviting visitor contribution and co-creation. The integration of digital technologies with physical artifacts enables the creation of richer thematic exhibition narratives, particularly valuable when dealing with cultural heritage objects that are geographically dispersed or have suffered partial loss. Virtual and augmented reality applications create immersive experiences that can transport visitors across time and space, providing contextual understanding that might otherwise be difficult to convey.

Barbara et al. (2021) examine how interactive digital narratives in cultural heritage contexts provide multi-layered narrative fields, establish diverse matrices of participants, and bridge temporal and spatial gaps in understanding cultural artifacts. Their research suggests that these approaches can lead to more comprehensive and dynamic appreciation of cultural heritage by connecting disparate elements into coherent experiences. Mitchell's (1994) foundational work on the relationship between verbal and visual representation provides important theoretical underpinnings for understanding how these multimedia approaches to storytelling function in museum contexts.

Oe and Yamaoka's (2022) research on the digital preservation of cultural heritage offers valuable insights into how traditional narratives can be transformed through digital archiving technologies. Their examination of the Ohyaama Pilgrimage demonstrates how interactive digital storytelling can bridge historical spiritual practices with contemporary applications, creating immersive experiences that make ancient wisdom accessible to modern audiences. This digital transformation of cultural narratives aligns with our framework of how digital technologies can preserve, reimagine, and revitalize traditional meaning-making systems while maintaining their cultural integrity.

#### *Digital Narratives in Healthcare and Therapeutic Applications*

The healthcare sector demonstrates growing interest in digital narratives for patient education, fostering empathy, and promoting well-being. Research in this domain analyzes the effectiveness of digital storytelling in enhancing patient understanding of medical conditions, particularly complex or stigmatized illnesses. Digital narratives can present medical information in accessible, engaging formats that improve comprehension and retention compared to traditional informational materials. They also serve a vital role in raising awareness about mental health issues and reducing illness-related stigma by humanizing experiences that might otherwise remain abstract or misunderstood by the general public.

Personal narratives shared through digital media have proven particularly effective in eliciting empathy and compassion among viewers. De Jager et al. (2017) found that individuals recounting their lived experiences through digital stories can create profound connections with audiences, fostering greater understanding and emotional resonance with health

challenges. Their systematic review identified that digital storytelling in research was especially appropriate for use with marginalized groups and frequently employed in this context, though with variations in how closely different applications adhered to original developmental principles.

Beyond audience impact, the process of creating digital stories offers therapeutic benefits for the storytellers themselves. This creative process provides outlets for catharsis, facilitates emotional healing, and fosters a sense of personal agency among individuals facing health challenges. The act of structuring one's experiences into a narrative can help patients make meaning from difficult circumstances, while sharing these stories can reduce isolation and build supportive communities.

Research has also examined specific applications for vulnerable populations such as older adults and individuals with dementia. Digital storytelling interventions have shown promise in promoting mental health in these groups, enhancing their connections with the community, improving digital literacy skills, and mitigating the negative effects of ageism. The opportunity to reminisce and share life stories through digital formats can foster a sense of purpose and strengthen social connections for individuals who might otherwise face isolation or diminished social roles.

#### *Digital Narratives and Social Justice*

Digital narratives serve as powerful instruments for challenging dominant societal narratives, promoting inclusivity, and advocating for social justice. Miller et al. (2020) examine how marginalized communities utilize digital storytelling to articulate their lived experiences, counter prevailing negative stereotypes, and foster a sense of community and solidarity. These digital stories frequently function as "counter-narratives" that provide alternative perspectives and interpretations, challenging established, often hegemonic viewpoints that reinforce existing power structures. By providing platforms for voices that are traditionally silenced or overlooked, digital storytelling contributes to a more comprehensive and equitable understanding of complex social issues.

The creation and sharing of digital narratives empowers individuals and communities through self-representation and agency assertion. This empowerment can lead to increased awareness of social injustices, cultivation of empathy among diverse groups, and mobilization toward meaningful social change. Mariani et al. (2023) emphasize how interactive digital narratives can be employed to share perspectives and experiences allowing self-expression, capitalizing on engagement, immersion, and participation. Their work highlights how IDNs provide opportunities for counter-hegemonic narratives and expressions of identity in ways that traditional media often cannot accommodate.

Ethical considerations remain paramount in this domain, as researchers and practitioners must address power dynamics and ensure storyteller control over their narratives. Koenitz et al. (2023) stress the importance of informed consent, privacy protection, and avoidance of exploitation when representing vulnerable populations through digital narratives. Building on this work, Bakk et al. (2023) have developed an ethics framework specifically for interactive digital narrative authoring, providing guidelines for responsible creation practices that respect the dignity and agency of those whose stories are being told.



Digital narratives offer powerful tools for facilitating social inclusion and knowledge sharing across cultural boundaries. Oe, Yamaoka, and Minamino (2022) demonstrate how digital storytelling functions as an effective form of social prescribing, enabling immigrants and social workers to share lived experiences through digital platforms. Their research reveals that interactive digital narratives create safe spaces for cultural exchange and mutual understanding, addressing social inequities while building community resilience through collaborative digital meaning-making processes.

#### *Digital Narratives in Emerging Media (VR, AR, Podcasts, Social Media)*

The convergence of digital narratives with evolving media technologies creates new frontiers in storytelling and user engagement. Holloway-Attaway and Fawcus (2023) analyze how virtual and augmented reality technologies offer immersive environments that significantly enhance audience engagement and presence within narrative worlds. Their research on audio-based narrative experiences demonstrates how AR can combine physical objects with virtual elements to create hybrid story spaces that engage multiple senses simultaneously. These immersive technologies can effectively transport users into the heart of story worlds, enabling more direct interaction and heightened emotional connection with narrative elements.

Podcasts have emerged as significant forms of digital audio storytelling, creating intimate connections between storytellers and listeners. The inherently personal nature of audio content, often consumed through headphones in private settings, can forge powerful relationships between content creators and their audiences. This medium has seen substantial growth and diversification in recent years, with narrative podcasts exploring both fictional storytelling and innovative approaches to non-fiction narratives.

Social media platforms have become crucial spaces for the creation, sharing, and interactive engagement with diverse narrative forms. These digital environments facilitate participatory culture, enabling swift dissemination and collaborative co-creation of narratives among users. Vosmeer and Schouten (2014) examined how social media contexts can enable new forms of interactive storytelling while maintaining key narrative elements. More recently, Koenitz (2023) has proposed that interactive digital narratives provide specific expressions for complex times, offering ways to represent and engage with the intricate issues of the 21st century through these emerging media technologies.

#### **Cross-Cutting Themes in Digital Narrative Research**

##### *Authoring Tools and the Creator's Perspective*

Research on digital narratives examines the tools, platforms, and processes involved in creating these interactive experiences across various media forms. Vegi et al. (2023) present innovative approaches to conceiving digital storytelling in applied research, positioning their work within illustration, animation, and creative arts in education. Their research addresses the needs and challenges encountered by authors of digital narratives, including technical skill acquisition, creative process management, and effective integration of interactivity within storytelling frameworks. Spierling and Szilas (2009) identified that authoring challenges extend beyond the technical capabilities of available tools, encompassing conceptual and creative hurdles that must be addressed to fully realize the potential of interactive narratives.

The development of user-friendly authoring tools emerges as a crucial factor in enabling broader participation in digital storytelling. Systems designed with intuitive interfaces and minimal coding requirements can empower individuals from diverse backgrounds to create and share their narratives, democratizing access to this powerful form of expression. These accessible tools are particularly important for educational applications and community-based storytelling initiatives, where technical expertise cannot be assumed and where diverse voices should be encouraged.

Cavazza et al. (2008) emphasized the importance of integrating research in interactive storytelling across disciplinary boundaries, noting how collaborative approaches between artists, technologists, and researchers can advance both theoretical understanding and practical implementations. More recent work by Koenitz, Barbara, and Bakk (2023) has proposed ethical frameworks for interactive digital narrative authoring, addressing the complex considerations that arise when creating experiences that engage users in potentially sensitive content or that represent marginalized perspectives.

#### *User Experience, Engagement, and Immersion*

Research on digital narratives focuses extensively on how users interact with these narrative forms and the factors that contribute to their overall experience, level of engagement, and sense of immersion. Nelson and Hull (2008) examined how self-presentation through multimedia creates distinctive relationships between creators, audiences, and the narrative itself, highlighting the importance of considering user experience from multiple perspectives. Their work emphasizes how interactivity, multimedia elements, and narrative design collectively shape user experiences, creating opportunities for deeper engagement than passive media consumption.

Studies have demonstrated that interactive narratives offer significant benefits in increasing audience attention spans and improving content retention. By allowing users to actively participate in and influence the unfolding of stories through their choices, these narratives create more dynamic and engaging experiences compared to traditional, non-interactive forms of storytelling. Nilsson (2010) demonstrated that digital narratives can serve as versatile ways for users to have a voice, enhancing both engagement and agency. Similarly, O'Byrne et al. (2018) examined digital storytelling as a motivational tool that draws students' attention and increases their interest in seeking new ideas, showing how engagement with interactive content can foster curiosity and self-directed learning.

The strategic use of visual storytelling through images, videos, and interactive graphics has proven to be a powerful method for enhancing audience engagement across digital platforms. Visual elements can capture and sustain attention more effectively than text alone, while interactive features encourage active rather than passive consumption. Understanding these dynamics is essential for designing digital narratives that effectively communicate their intended messages while providing satisfying user experiences.

#### *Ethical Considerations in the Digital Age of Storytelling*

The ethical dimensions surrounding the creation, distribution, and consumption of digital narratives constitute a critical cross-cutting theme within the research literature. This area explores issues of consent, ethical representation, manipulation potential, data privacy, and

embedded biases that may appear in digital narrative forms. The widespread accessibility and reach of digital narratives in contemporary media landscapes heighten the importance of adhering to robust ethical guidelines in their creation and use.

Given their potential for wide dissemination and influence, digital narratives carry significant responsibility to avoid causing harm through misinformation or misrepresentation of individuals or groups. Koenitz et al. (2023) highlight the heightened importance of ethical guidelines given the widespread accessibility and broad reach of digital media. Their research emphasizes that creators must consider not only their intentions but also potential unintended consequences of their narrative choices, particularly when representing vulnerable or marginalized populations.

In journalistic contexts, the digital age has introduced unique ethical dilemmas related to reporting speed, accuracy verification, and blurred boundaries between professional and citizen journalism. Maintaining public trust and professional credibility in these evolving media environments requires continuous navigation of complex ethical considerations. Koenitz, Barbara, and Bakk (2023) have developed an ethics framework for interactive digital narrative authoring that addresses these challenges, providing guidelines for responsible creation and use of digital narratives across all domains. Their work suggests that ethical storytelling requires ongoing critical reflection and the establishment of best practices that respect both creators and audiences.

Figure 2 provides a comprehensive mapping of the diverse application domains and cross-cutting themes in digital narrative research. The visualization illustrates how digital narrative research branches into seven distinct application domains: education, games and interactive fiction, and journalism (shown in blue) focusing on informational contexts; museums and cultural heritage, healthcare and therapy, and social justice (shown in red) highlighting social and cultural impacts; and emerging media technologies including VR, AR, and podcasts (shown in orange) representing technological innovation. Each domain is accompanied by key citations from seminal researchers and characteristic features. The diagram also identifies three fundamental cross-cutting themes (authoring tools, user experience, and ethical considerations) that permeate all application domains. This structural representation demonstrates the interdisciplinary nature of digital narrative research while emphasizing the interconnections between theoretical foundations and practical applications across multiple fields.

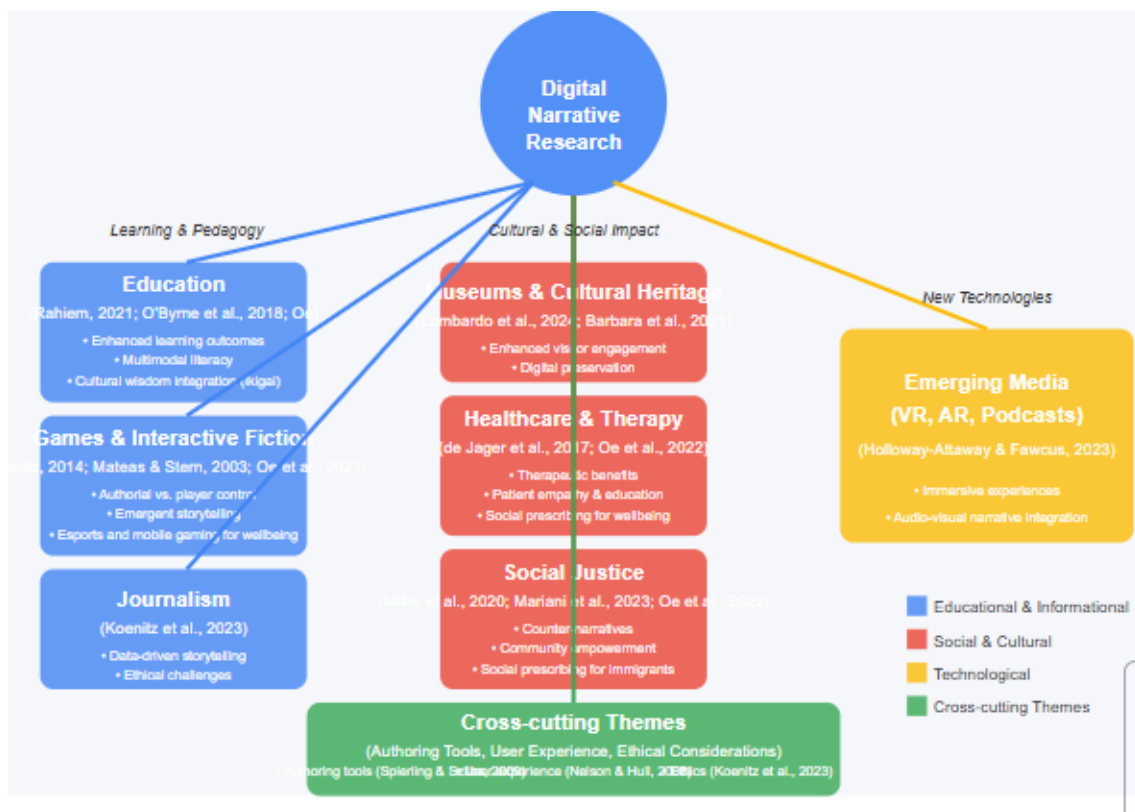


Figure 2 Application Domains and Cross-cutting Themes in Digital Narrative Research: A Comprehensive Mapping

## Conclusion

### *Theoretical and Contextual Contributions*

This thematic classification research makes several significant theoretical and contextual contributions to the field of digital narrative studies. Theoretically, it advances understanding by synthesizing previously fragmented knowledge across disciplinary boundaries, providing a unified conceptual framework that bridges technological, creative, and social dimensions of digital storytelling. By identifying the seven key application domains and three cross-cutting themes, this work creates a comprehensive taxonomy that can serve as a foundation for more nuanced theoretical development. Contextually, this research responds to the rapidly evolving digital media landscape, offering timely insights into how emerging technologies transform narrative practices across sectors from education to healthcare. The interdisciplinary nature of this classification acknowledges the complex interplay between technology development, creative practices, and societal needs, positioning digital narratives as powerful tools for addressing contemporary challenges. By mapping both established applications and emerging trends, this work enables practitioners, educators, and researchers to situate their work within broader theoretical contexts, fostering more intentional and informed approaches to digital narrative creation and analysis.

## Limitations

Despite the comprehensive nature of this thematic classification, several limitations warrant acknowledgment. First, the rapidly evolving nature of digital technology means that any classification framework risks becoming outdated as new narrative forms emerge. The categorization presented may not fully capture innovative narrative approaches currently in development or those that blur boundaries between established domains. Second, the

predominant focus on English-language academic literature potentially overlooks valuable contributions from non-English speaking regions, particularly from East Asian and Global South contexts where unique digital narrative traditions and applications may exist. As Koenitz (2023) acknowledges, Western conceptual frameworks may not adequately reflect the diversity of narrative practices worldwide.

Methodologically, the study's reliance on published academic literature means that cutting-edge industry practices or community-led innovations may be underrepresented if they have not yet been documented in scholarly publications. The classification also faces challenges in addressing the inherent hybridity of many digital narrative applications that simultaneously operate across multiple domains. For instance, educational games with cultural heritage themes or healthcare applications with social justice dimensions may not fit neatly within single categories. Additionally, the rapid pace of technological change in areas like artificial intelligence and extended reality creates a moving target for researchers attempting to classify emerging narrative forms, potentially limiting the long-term applicability of current frameworks.

### **Future Research Opportunities**

The limitations identified above point toward several promising directions for future research. Cross-cultural and comparative studies represent a particularly fertile area for investigation, examining how digital narrative practices vary across different cultural, linguistic, and geographical contexts. Such research could enrich theoretical understanding by incorporating diverse perspectives and narrative traditions that may challenge or extend Western conceptual frameworks. Additionally, longitudinal studies tracking the evolution of digital narrative forms over time would provide valuable insights into how technological innovations shape storytelling practices and how narrative conventions develop within emerging media. The intersection of artificial intelligence with digital narratives presents another compelling avenue for future research. As generative AI tools become increasingly sophisticated, questions arise about co-creation between human and machine authors, algorithmic narrative generation, and the implications for authorship and creative expression. Furthermore, empirical research measuring the impact of different digital narrative approaches across various domains would strengthen the evidence base for their effectiveness. This might include controlled studies comparing learning outcomes in educational applications, therapeutic benefits in healthcare contexts, or engagement metrics across different narrative designs.

Interdisciplinary collaborations between technologists, artists, social scientists, and humanities scholars offer opportunities to develop more nuanced theoretical frameworks that can better account for the complexity of digital narratives. As Tsampoulatidis et al. (2023) suggest, the field would benefit from methodological innovations that bridge qualitative and quantitative approaches, combining computational analysis with interpretive methods to understand both the technical aspects and experiential dimensions of digital storytelling. Finally, practice-based research involving the creation and evaluation of experimental digital narratives could advance understanding of the creative processes and design principles that underpin effective storytelling in digital environments, while simultaneously producing innovative narrative works that push the boundaries of existing forms.

## References

- Bakk, Á. K., Barbara, J., & Koenitz, H. (2023). An ethics framework for interactive digital narrative authoring. In C. Hargood, D. E. Millard, A. Mitchell, & U. Spierling (Eds.), *The authoring problem: Challenges in supporting authoring for interactive digital narratives* (pp. 335-351). Springer International Publishing.
- Barbara, J., Koenitz, H., & Bakk, Á. K. (2021). The ethics of virtual reality interactive digital narratives in cultural heritage. In *Interactive Storytelling: 14th International Conference on Interactive Digital Storytelling, ICIDS 2021* (pp. 288-292). Springer-Verlag.
- Barthes, R., Gottdiener, M., Boklund-Lagopoulou, K., & Lagopoulos, A. P. (1972). *Semiotics*. Paladin.
- Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry*, 18(1), 1-21.
- Cavazza, M., Donikian, S., Christie, M., Spierling, U., Szilas, N., Vorderer, P., Hartmann, T., Klimmt, C., André, E., Champagnat, R., Petta, P., & Olivier, P. (2008). The IRIS Network of Excellence: Integrating Research in Interactive Storytelling. In U. Spierling & N. Szilas (Eds.), *Interactive Storytelling* (LNCS Vol. 5334, pp. 14-19). Springer.
- Danielson, K. E. (2008). Digital storytelling in language arts. In K. McFerrin, R. Weber, R. Carlsen, & D. Willis (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 865-869). AACE.
- Jager, A., Fogarty, A., Tewson, A., Lenette, C., & Boydell, K. M. (2017). Digital storytelling in research: A systematic review. *The Qualitative Report*, 22(10), 2548-2582.
- Eco, U. (1979). *A theory of semiotics* (Vol. 217). Indiana University Press.
- Holloway-Attaway, L., & Fawcus, J. (2023). Designing Sisters: Creating Audio-Based Narratives to Generate Affective Connections and Material Story Worlds. In *Proceedings of ICIDS 2023*. Springer.
- Hopkins, L., Brookes, F., & Green, J. (2013). Books, bytes and brains: The implications of new knowledge for children's early literacy learning. *Australasian Journal of Early Childhood*, 38(1), 23-28.
- Juul, J. (1999). A clash between game and narrative. Danish Literature.
- Koenitz, H. (2010). Towards a Theoretical Framework for Interactive Digital Narrative. In R. Aylett, M.Y. Lim, S. Louchart, P. Petta, & M. Riedl (Eds.), *Interactive Storytelling* (LNCS Vol. 6432, pp. 176-185). Springer.
- Koenitz, H. (2014). Five theses for interactive digital narrative. In A. Mitchell, C. Fernández-Vara, & D. Thue (Eds.), *Interactive Storytelling* (LNCS Vol. 8832). Springer.
- Koenitz, H. (2023). *Understanding Interactive Digital Narratives: Immersive Expressions for a Complex Time*. Routledge.
- Koenitz, H., Barbara, J., & Eladhari, M. P. (2023). Interactive digital narrative (IDN)—new ways to represent complexity and facilitate digitally empowered citizens. *New Review of Hypermedia and Multimedia*, 28(3-4), 76-96.
- Koenitz, H., & Eladhari, M. P. (2019). Challenges of IDN research and teaching. In R. E. Cardona-Rivera, A. Sullivan, & R. M. Young (Eds.), *Interactive Storytelling: 12th International Conference on Interactive Digital Storytelling, ICIDS 2019* (pp. 26-39). Springer Nature.
- Koenitz, H., Eladhari, M. P., Louchart, S., & Nack, F. (2020). INDCOR White Paper 1: A shared vocabulary for IDN (interactive digital narratives). *arXiv preprint*. arXiv:2010.10135.
- Koenitz, H., Haahr, M., Ferri, G., & Sezen, T. I. (2013). First steps towards a unified theory for interactive digital narrative. In Z. Pan, A. D. Cheok, W. Müller, I. Iurgel, P. Petta, & B. Urban (Eds.), *Transactions on Edutainment X* (LNCS Vol. 7775, pp. 20-35). Springer.



- Koenitz, H., Ferri, G., Haahr, M., Sezen, D., & Sezen, T. I. (Eds.). (2015). *Interactive digital narrative: History, theory and practice*. Routledge.
- Kulla-Abbott, T., & Polman, J. L. (2008). Engaging student voice and fulfilling curriculum goals with digital stories. *THEN: Technology, Humanities, Education & Narrative*, 5, 38-60.
- Lambert, J. (2009). *Digital storytelling: Capturing lives, creating community* (3rd ed.). Digital Diner Press.
- Lombardo, V., Damiano, R., Lieto, A., Tonelli, S., Martini, F., & Barbara, J. (2024). Interactive Digital Narratives for Modern Historical Research. In J. T. Murray & M. C. Reyes (Eds.), *Interactive Storytelling, ICIDS 2024* (LNCS Vol. 15468). Springer.
- Louchart, S., & Aylett, R. S. (2004). Narrative theory and emergent interactive narrative. *International Journal of Continuing Engineering Education and Life-long Learning*, 14(6), 506-518.
- Mariani, I., Cincia, M., & Ackermann, J. (2023). Interactive Digital Narratives: Counter-Hegemonic Narratives and Expression of Identity. *G/A/M/E – Games as Art, Media, Entertainment*, 11.
- Mateas, M., & Stern, A. (2003). Façade: An experiment in building a fully-realized interactive drama. *Game Developers Conference*.
- Miller, R., Liu, K., & Ball, A. F. (2020). Critical Counter-Narrative as Transformative Methodology for Educational Equity. *Review of Research in Education*, 44(1), 269-300.
- Mitchell, W. J. T. (1994). *Picture theory: Essays on verbal and visual representation*. University of Chicago Press.
- Montfort, N. (2003). *Twisty little passages: An approach to interactive fiction*. MIT Press.
- Murray, J. (1997). *Hamlet on the Holodeck: The future of narrative in cyberspace*. Free Press.
- Murray, J. (2005). The last word on ludology v narratology in game studies. Preface to keynote talk at DiGRA 2005: Changing Views: Worlds in Play.
- Nelson, M. E., & Hull, G. A. (2008). Self-presentation through multimedia: A Bakhtinian perspective on digital storytelling. In K. Lundby (Ed.), *Digital storytelling, mediatized stories: Self-representations in new media* (pp. 123-144). Peter Lang.
- Nilsson, M. (2010). Developing voice in digital storytelling through creativity, narrative and multimodality. *Seminar.net: International Journal of Media, Technology and Lifelong Learning*, 6(2), 148-160.
- O'Byrne, W. I., Houser, K., Stone, R., & White, M. (2018). Digital storytelling in early childhood: Student illustrations shaping social interactions. *Frontiers in Psychology*, 9, 1800.
- Oe, H., Weeks, M., & Tanaka, K. (2021). An Exploratory Discussion of Online Game as Computing Entertainment: Esport Perspectives Using Mobile Gaming Devices. *SSRN*, (9 December 2021).
- Oe, H., & Yamaoka, Y. (2022, April 27). Messages of Well-Being for Modern People across Time and Space: From the Jomon Cultural Heritage to the Ohyama Pilgrimage in the Edo Period [Presentation]. *Narrative, Culture and Community Research Centre, Bournemouth University, Bournemouth, UK*.
- Oe, H., Yamaoka, Y., & Minamino, N. (2022, November). Digital narratives and storytelling to share experiences: social prescribing for social workers and immigrants. In *2022 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME)* (pp. 1-6). IEEE.
- Oe, H. (2025). Understanding Ikigai and Educational Practice: Bridging the Wisdom of Japanese Culture with Contemporary Society. *International Journal of Academic*

- Research in Progressive Education and Development*, 14(1), 2517-2530.  
<https://doi.org/10.6007/IJARPED/v14-i1/25066>
- Rahiem, M. D. H. (2021). Storytelling in early childhood education: Time to go digital. *International Journal of Child Care and Education Policy*, 15(1), 1-20.
- Spierling, U., & Szilas, N. (2009). Authoring issues beyond tools. In I. A. Iurgel, N. Zagalo, & P. Petta (Eds.), *ICIDS 2009* (LNCS Vol. 5915, pp. 50-61). Springer.
- Tsampoulatidis, I., Papadopoulos, S., & Kompatsiaris, I. (2023). A survey on computational and emergent digital storytelling. *Heritage*, 6(2), 68.
- Vegi, A., Yang, Y., & Palchick, A. (2023). What Digital Storytelling Means to the New Generation of Researchers. *Social Sciences*, 12(9), 485.
- Vosmeer, M., & Schouten, B. (2014). Interactive Cinema: Engagement and Interaction. In A. Mitchell, C. Fernández-Vara, & D. Thue (Eds.), *Interactive Storytelling* (LNCS Vol. 8832, pp. 140-147). Springer.
- Wang, J. (2023). Semiotic narrative research in digital media art. *Frontiers in Art Research*, 5(9), 1-7.
- Yulian, R., & Putri, M. D. (2023). Digital Storytelling for English Teaching in Early Childhood: Integrating STEAM. *Early Childhood Education Journal*, 1-10.