

The Role of Digital Storytelling in Cultivating Lifelong Learning Mindsets among University Students: A Narrative Inquiry

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Abstract

This qualitative study explores how digital storytelling fosters lifelong learning mindsets among university students. As digital technology increasingly shapes education, learners are expected not only to develop technical skills but also reflective, autonomous, and self-directed learning habits. Using a narrative inquiry approach, the research examines the lived experiences of English Education students engaged in digital storytelling projects within their coursework. The study investigates how students perceive and construct their learning journeys while creating digital stories that represent personal or academic development. Data will be gathered through interviews, classroom observations, reflective journals, and analysis of the digital storytelling products. Narrative inquiry enables a deep understanding of how learners interpret their experiences and how digital storytelling supports self-reflection and motivation for continuous learning. The study aims to provide insights into how technology-supported narrative practices contribute to lifelong learning dispositions in higher education, particularly within language education and digital literacy contexts.

Keywords: Digital Storytelling, Lifelong Learning, Narrative Inquiry

Introduction

The rapid integration of digital technologies into higher education has reshaped how students engage with information, construct knowledge, and participate in learning activities. Beyond merely learning technical skills, contemporary university students are increasingly expected to foster reflective, autonomous, and self-directed learning habits aligned with the demands of lifelong learning. Digital storytelling (DST) has emerged as a pedagogical innovation that supports these expectations by blending traditional narrative practices with multimedia elements. Robin (2008) describes DST as “a powerful teaching and learning tool” that combines narrative, images, sound, and video to deepen cognitive and emotional engagement in the learning process. Such multimodal integration enables students to articulate personal perspectives and interpret their learning experiences in meaningful ways. This pedagogical relevance aligns with calls for higher education to nurture learners who are not only digitally literate but also capable of continual self-reflection and adaptation.

Recent research has demonstrated the significance of digital storytelling in strengthening communication skills, digital literacy, and student engagement. Kakungulu (2024) notes that DST encourages learners to “find, organize, and express their ideas and knowledge in an individual and meaningful way,” allowing even struggling students to participate more confidently in academic tasks. Similarly, Setiawan et al. (2023) found that DST substantially improved digital literacy, oral communication abilities, and learning motivation, reporting large effect sizes across all measured domains. These findings highlight the multidimensional benefits of DST as a learning tool that fosters both cognitive and affective dimensions of student development. Moreover, DST has been shown to enhance student engagement in language classrooms by creating interactive, low-anxiety learning environments that increase participation and confidence (Rahmani et al., 2023). Taken together, this research positions digital storytelling as an instructional method capable of supporting deeper learning and reflective practice.

From the perspective of lifelong learning, digital storytelling offers a valuable platform for cultivating reflective and self-regulated learners. Lifelong learning requires individuals to continuously evaluate their experiences, adapt their strategies, and maintain motivation for personal and academic growth. Gürsoy (2021) emphasizes that DST promotes 21st-century skills such as collaboration, creativity, digital literacy, and reflective thinking, all of which are essential to developing a sustainable learning mindset. Likewise, (Solissa et al., 2024) report that digital storytelling significantly increases student motivation, enabling learners to engage more deeply with the learning process and persist through academic challenges. In language education contexts, DST offers a unique space for students to narrate personal experiences, negotiate identity, and reflect on

their learning trajectories—critical processes for internalizing lifelong learning values. These reflective practices support learners in recognizing their strengths, identifying areas for improvement, and understanding learning as a continuous, evolving process.

Given its narrative and reflective nature, digital storytelling aligns naturally with narrative inquiry as a methodological approach to exploring students' learning experiences. Narrative inquiry emphasizes the ways individuals construct meaning through stories, making it particularly suitable for examining how learners interpret and represent their academic development. The present study adopts narrative inquiry to investigate the lived experiences of English Education students participating in DST projects, focusing on how they perceive and construct their learning journeys. As outlined in the project description, the study seeks to understand how students "perceive, construct, and reflect upon their learning journeys" through digital stories that depict personal or academic growth. Through interviews, classroom observations, reflective journals, and analysis of students' digital products, this approach provides nuanced insight into how DST supports self-reflection, autonomy, and the development of lifelong learning mindsets. By situating digital storytelling within this methodological and theoretical framework, the study contributes to broader discussions about transformative, technology-enhanced pedagogies in higher education.

Theoretical Framework

The theoretical foundation of this study is built upon four interconnected perspectives that help explain how digital storytelling (DST) fosters lifelong learning mindsets among university students: (1) Constructivist Learning Theory, (2) Multimodal Literacy and Digital Literacy Theory, (3) Lifelong Learning Mindset Theory, and (4) Narrative Inquiry as a Meaning-Making Framework. These perspectives collectively illuminate how learners construct, interpret, and reflect upon their learning experiences through the process of creating digital stories.

Constructivist Learning Theory

Constructivist theory posits that learners actively construct meaning through experience, reflection, and interaction with their environment (Bruner, 1990; Vygotsky, 1978). In the context of DST, students are positioned as active creators rather than passive recipients of knowledge. As they design digital narratives, they reorganize personal and academic experiences, make interpretive choices, and select meaningful representations, thereby engaging in deeper meaning-making.

Robin (2008) highlights that digital storytelling supports learners in demonstrating identity, language skills, and personal experience through multimedia, making the learning process more individualized and reflective. This aligns with the study's aim of exploring how students perceive and construct their learning journeys through digital stories. Setiawan et al. (2023) further show that DST promotes active engagement, collaboration, and reflection—core elements of constructivist learning that support the development of autonomous and self-directed learning habits.

Thus, constructivism provides a foundational lens for understanding how DST encourages learners to take ownership of their learning, reorganize their ideas, and reflect critically—processes essential for cultivating lifelong learning mindsets.

Multimodal Literacy and Digital Literacy Theory

Digital storytelling inherently integrates multiple modes of communication—text, visuals, audio, music, and video. According to multimodal literacy theory, meaning in contemporary digital environments is created through the orchestration of diverse semiotic resources (Kress, 2010). DST operationalizes this principle by enabling students to express their learning journeys through rich combinations of narrative, imagery, and sound.

Kakungulu (2024) emphasizes that DST helps learners "organize and express ideas in a personal and meaningful way," enhancing both creativity and communicative competence. This is particularly relevant in language education, where DST supports meaningful engagement with language, identity, and narrative structure. Digital literacy theory complements this by explaining how learners evaluate and produce digital content. Setiawan et al. (2023) demonstrate that DST significantly enhances digital literacy skills, enabling learners to navigate technological tools confidently and responsibly.

By applying these theories, the study interprets DST as a literacy and communication practice that strengthens students' multimodal expression, reflective thinking, and academic engagement—all of which contribute to lifelong learning dispositions.

Lifelong Learning Mindset Theory

Lifelong learning involves continuous, self-motivated, and reflective engagement in learning across the lifespan. Its key components include self-regulation, intrinsic motivation, reflective practice, and adaptability—all of which are activated during the DST process. Through constructing digital stories, students reflect on their learning histories, articulate personal growth, identify challenges, and envision future directions.

Studies show that digital storytelling increases motivation, engagement, and learner autonomy. Solissa et al. (2024) found that DST enhances students' enthusiasm and sustained motivation—factors that directly support lifelong learning. Rahmani et al. (2023) similarly note that DST strengthens behavioral, emotional, and cognitive engagement, which are essential for developing resilient and self-directed learners.

This theoretical lens aligns closely with the abstract's emphasis on reflective, autonomous, and self-directed learning habits, framing DST as a tool that not only enhances academic competence but also nurtures long-term learning dispositions.

Narrative Inquiry as a Framework for Meaning-Making

Narrative inquiry provides the methodological and theoretical grounding for understanding how learners make sense of their experiences through storytelling (Clandinin & Connelly, 2000). Since DST requires students to construct narratives based on personal or academic experiences, this approach is particularly suitable for interpreting how they reflect on their learning journeys.

As stated in the project description, this study explores the “lived experiences of English Education students” and examines how they “perceive, construct, and reflect upon their learning journeys” through the creation of digital narratives. The meaning-making processes embedded in DST—storyboarding, scripting, recording, editing, and presenting—provide rich data for understanding shifts in students' motivation, identity, and reflective habits. (Sulistianingsih et al., 2025) note that DST supports meaningful identity expression and personal transformation, underscoring its compatibility with narrative inquiry. Thus, narrative inquiry serves as a critical framework for capturing the depth of learners' reflections and understanding how DST supports self-reflection and continuous learning.

Integrating these four theoretical lenses provides a holistic foundation for interpreting how digital storytelling fosters lifelong learning mindsets. Constructivism explains how learners actively build knowledge; multimodal and digital literacy theories illuminate how DST enhances communication and digital competence; lifelong learning theory connects DST with reflective, autonomous, and self-regulated learning; and narrative inquiry provides the interpretive framework for analyzing how students make sense of their experiences through digital stories. Together, these perspectives support the core argument reflected in the abstract: digital storytelling is a transformative pedagogical practice that cultivates lifelong learning mindsets by promoting reflection, autonomy, and meaningful engagement with technology-supported narratives.

Methodology

This qualitative study adopts a narrative inquiry approach to explore how digital storytelling (DST) fosters lifelong learning mindsets among university students. Narrative inquiry is well-established in educational research as a methodology that examines lived experiences through the stories individuals tell (Clandinin & Connelly, 2000). Recent studies emphasize its relevance in technology-enhanced learning contexts, arguing that narrative inquiry captures the complexity of reflective meaning-making processes that develop through digital tools (Manousi & Prentzas, 2021; Trisanti et al., 2022; Wardah & Triyoga, 2025). Given the reflective, identity-oriented nature of DST, narrative inquiry provides a robust framework for understanding how students construct and interpret their learning trajectories.

Research Design

Narrative inquiry allows researchers to examine the temporal, social, and situational dimensions of learning experiences (Kim, 2016). In DST research, this approach has been used to analyze how learners represent personal growth, emotional engagement, and identity transformation through multimedia narratives (Gürsoy, 2021; Lafrance & Blizzard, 2013). This study uses a three-dimensional narrative space—interaction, continuity, and situation—to guide the exploration of how students' experiences unfold within digital storytelling activities. This design aligns with recent qualitative inquiries into reflective practices in digital learning environments (Ohler, 2013).

Participants and Research Site

Participants consisted of students enrolled in an English Education department at an Indonesian university. Purposeful sampling was used to select 12 students who had participated in digital storytelling projects as part of their coursework. Purposeful sampling is appropriate for narrative studies because it ensures the selection of information-rich cases capable of yielding deep insights (Tajik et al., 2024). The chosen participants demonstrated varying levels of digital literacy, reflective capacity, and engagement with narrative tasks, allowing for a diverse representation of experiences.

The research site is a blended-learning English Education program that integrates digital literacy and creative multimodal assignments. Prior studies indicate that such environments are conducive to DST, as they offer opportunities for multimodal composition, scaffolded learning, and reflective engagement (Rahmani et al., 2023; Setiawan et al., 2023)

Data Collection

Data were collected over one academic semester using four sources:

In-depth interviews

Semi-structured interviews allowed participants to narrate their learning experiences, challenges, and perceptions of DST. Interviews are essential in narrative inquiry because they serve as primary sites for eliciting stories of experience (Kim, 2016). Similar studies have shown the effectiveness of interviews in capturing the reflective nature of DST (Çetin, 2021; Solissa et al., 2024).

Classroom observations

Observations documented student interactions, engagement patterns, collaborative processes, and moments of reflection during DST activities. Observational data enhance credibility by providing contextual insight into how learners work with digital tools and peers (Brevik & Davies, 2015; Yao, 2025).

Reflective journals

Students' journals served as written narratives demonstrating their thought processes, learning strategies, and evolving mindsets. Reflective writing has been shown to support metacognitive development and identity negotiation in DST settings (Perry, 2020; Sulistianingsih et al., 2025).

Digital storytelling artifacts

Students' digital stories—composed of video, images, audio, and narration—were analyzed as multimodal representations of their learning journeys. Recent research highlights that digital artifacts reveal how learners integrate personal meaning-making with technological skills (Gürsoy, 2021; Robin, 2008). These artifacts function as both data and reflective outcomes, aligning with multimodal analysis principles.

Data Analysis

Data were analyzed using the narrative inquiry framework developed by Clandinin & Connelly (2000), which involves three key stages:

Narrative coding

Interview transcripts, journals, observations, and digital artifacts were coded to identify recurring themes related to reflection, autonomy, identity, and digital literacy development. This approach is consistent with narrative coding procedures used in studies of technology-supported reflective learning (Merjovaara et al., 2020; Papadimitriou et al., 2013).

Narrative interpretation

Narratives were interpreted across temporal dimensions—past experiences, present engagement, and future aspirations. The analysis emphasized how students constructed meaning from their participation in DST, echoing approaches used by Setiawan et al. (2023) and Rahmani et al. (2023).

Narrative representation

Findings were presented as thematic narratives describing how students interpreted their learning journeys. This stage honors participants' voices and preserves the integrity of their lived experiences, as recommended in narrative inquiry methodology (Çetin, 2021; Kim, 2016). Triangulation across interviews, observations, journals, and digital artifacts strengthened the credibility and dependability of the findings. Member-checking was conducted to ensure participants

confirmed the accuracy of the interpretations, following procedures recommended by recent qualitative studies.

Ethical Considerations

Ethical approval was obtained from the university's research ethics committee. Participants provided informed consent, were assured of confidentiality, and were given the right to withdraw at any time. Identifying information in digital stories was removed or anonymized. Ethical considerations are crucial in narrative and multimodal research, particularly when personal stories and media representations are involved (Robin, 2008).

Findings

The analysis of interviews, classroom observations, reflective journals, and students' digital stories revealed four interconnected themes illustrating how digital storytelling shaped the ways university students understood themselves as learners. The themes show that DST not only introduced them to new technological practices but also encouraged deeper reflection, growing independence, and renewed awareness of who they are—and who they are becoming—as lifelong learners.

Theme 1: Reflection Emerges Naturally Through the Act of Storytelling

One of the clearest patterns across students' narratives was the way digital storytelling encouraged them to pause, look back, and make sense of their learning journeys. Many students shared that they rarely stop to reflect on their progress; assignments tend to move quickly from one to the next. However, creating a digital story shifted their focus. As they wrote scripts, selected moments to highlight, and recorded their voices, they found themselves revisiting experiences they had forgotten or previously dismissed. During interviews, students described the process as "seeing myself more honestly" or "finally understanding why certain experiences mattered." For example, one participant explained, *"I didn't realize how much I had changed until I heard my own narration. It felt like listening to a different version of myself—one I hadn't acknowledged."*

In the classroom, students revised their narratives repeatedly—not because the lecturer demanded it, but because they wanted the story to genuinely reflect who they were. This kind of reflective engagement aligns with findings from Sulistianingsih et al. (2025), who observed that DST encourages learners to revisit past experiences with fresh eyes. Overall, the storytelling process opened a space where reflection felt natural rather than forced. Students became more aware of how their learning unfolded and began to recognize their own growth.

Theme 2: Digital and Multimodal Competence Grows Slowly but Confidently

Another strong theme was the development of students' digital and multimodal literacy. Most students entered the project with limited experience in video editing or multimodal composition. Some expressed initial nervousness, while others admitted they "didn't know where to start." However, as the project progressed, they grew more comfortable experimenting with visuals, audio, music, and narration. One student shared, *"At first, I just chose random pictures. But later, I understood that each image had to support the message. I started thinking more carefully about what I wanted the viewer to feel."*

This shift from technical uncertainty to purposeful creation was observable throughout the course. Students exchanged tips, shared tutorials, and often gathered in small groups to troubleshoot editing challenges. This peer collaboration mirrors the findings of (Setiawan et al., 2023), who noted that DST naturally provokes collaborative learning around digital tools. By the end of the project, students produced digital stories that demonstrated noticeably stronger design choices and clearer multimodal communication. The improvement wasn't only technical—it reflected a growing confidence in using digital tools to express meaning.

Theme 3: Autonomy Develops as Students Take Ownership of Their Learning

As students worked through the stages of developing their digital stories, a sense of autonomy began to emerge. The project required them to make their own decisions—choosing storylines, gathering materials, organizing scenes, recording narration, and solving technical problems. Instead of waiting for step-by-step guidance, many students took initiative. Several students described how they searched YouTube tutorials, experimented with editing apps, or tested different recording environments to improve sound quality. One journal entry noted, *"When something didn't work, I didn't stop. I tried another way. I realized I could figure things out by myself."*

This kind of self-directed behavior aligns closely with the characteristics of lifelong learning mindsets. Students began to trust their ability to manage unfamiliar tasks, a shift also

observed by (Solissa et al., 2024) in their study on DST and learning motivation. What stood out most was students' willingness to persist. Even when technical problems arose—audio mismatches, missing files, or software glitches—students rarely abandoned their efforts. Their motivation was tied not only to completing an assignment but to producing something that truly represented their growth.

Theme 4: Identity as a Lifelong Learner Takes Shape Through Storytelling

Perhaps the deepest theme that emerged was how students began to reimagine themselves as learners. Through storytelling, they confronted personal struggles—fear of speaking English, lack of confidence, past failures—and transformed these experiences into meaningful narratives of growth. During interviews, many students expressed pride when describing their final digital stories. One participant said, *"I saw myself differently. Not someone who always struggles, but someone who keeps trying and improving."* Another reflected, *"Telling my story helped me understand that learning doesn't end in the classroom. It's something I carry with me."*

This redefinition of self-echoes findings from (Rahmani et al., 2023), who noted that DST helps language learners negotiate identity and express personal meaning. By narrating their experiences, students began to internalize the idea that learning is long-term, personal, and deeply connected to one's sense of identity. DST allowed students to see that their challenges were not signs of weakness, but stepping stones in a broader learning journey. In this way, digital storytelling acted as a bridge between academic tasks and personal transformation.

Discussion

The findings of this study reveal that digital storytelling (DST) acts as more than a creative assignment; it becomes a space where students discover their capacity to reflect, adapt, and position themselves as lifelong learners. The four themes—reflective awareness, digital and multimodal competence, autonomy and self-direction, and identity reconstruction—intersect to illustrate how DST nurtures the kinds of learning dispositions increasingly valued in higher education.

The first theme, developing reflective awareness, aligns strongly with the narrative and constructivist underpinnings of DST. As students narrated their experiences, they were encouraged to look inward and examine their learning histories in ways traditional academic tasks rarely invite. This reflective turn mirrors the assertion of Robin (2008) that DST serves as a powerful meaning-making practice, allowing learners to connect personal experience with academic development. Students in this study naturally gravitated toward describing their growth, setbacks, and motivations as they shaped their digital narratives. Such reflective engagement supports arguments by Sulistianingsih et al. (2025), who found that the narrative dimension of DST helps language learners revisit their learning journeys with greater clarity and self-awareness. What emerged in this study is a similar pattern: reflection did not feel like an imposed task; rather, it emerged organically as students attempted to make their stories honest and meaningful.

The second theme, strengthening digital and multimodal competence, demonstrates how DST fosters practical 21st-century skills while also shaping learner confidence. Students moved gradually from uncertainty to competence, mirroring the developmental trajectories observed in Setiawan et al. (2023), who reported significant gains in digital literacy among students engaged in DST activities. As students designed digital stories—choosing images, sequencing scenes, adjusting audio—they made deliberate decisions about how meaning should be conveyed. This supports the work of Gürsoy (2021), who argues that DST encourages learners to develop digital, technological, and visual literacies through continuous experimentation. Importantly, students' confidence grew not merely from mastering tools, but from realizing they could learn new technologies independently. This awareness is foundational to lifelong learning, particularly in digital learning environments where tools evolve quickly.

The third theme, building autonomy and self-directed learning habits, reinforces the idea that DST shifts responsibility from teacher to learner. Students described troubleshooting issues independently, searching for tutorials, and refining their stories without being prompted. This sense of ownership reflects the principles of lifelong learning, where learners take initiative in managing their own growth. The persistence students demonstrated echoes the findings of Solissa et al. (2024), who observed that DST enhances intrinsic motivation by giving students control over their creative and learning processes. In this study, autonomy grew not because the project demanded independence, but because DST gave students a personally meaningful reason to persist. Their desire to produce a narrative that felt authentic encouraged them to monitor their progress, revise their work, and overcome technical challenges—all hallmarks of self-directed learning.

The fourth theme, reconstructing identity as a lifelong learner, represents the most transformative aspect of DST. Through storytelling, students began to reinterpret who they were and who they believed they could become. Identity work is deeply tied to narrative inquiry, which views stories as a primary means through which individuals make sense of themselves (Clandinin & Connelly, 2000). Students' digital stories often concluded with expressions of hope, renewed purpose, or commitments to personal improvement. This aligns with findings by Rahmani et al. (2023), who emphasize that DST enables language learners to negotiate identity and express emotional dimensions of learning. In this study, students discovered that their struggles—fear of speaking, uncertainty, or lack of confidence—were not endpoints but parts of a larger learning journey. This shift in perspective is central to developing a lifelong learning mindset, characterized by adaptability, resilience, and a belief in one's capacity to grow.

Taken together, these themes demonstrate that DST functions as an integrated learning experience, intertwining reflection, multimodal creation, autonomy, and identity development. The students' lived experiences reflect the interplay of constructivist principles, digital literacy development, and narrative meaning-making highlighted in the theoretical framework. While DST introduces technical and creative challenges, students' narratives show that these challenges often become catalysts for deeper learning—including moments of self-discovery and re-evaluation of their academic and personal trajectories.

Ultimately, the findings suggest that DST is a powerful pedagogical tool for higher education, especially within language learning contexts where identity, confidence, and self-expression are essential. By engaging students in a process that is both personal and academically rigorous, DST supports the development of lifelong learning dispositions that extend far beyond the classroom.

Conclusion

This study set out to explore how digital storytelling (DST) fosters lifelong learning mindsets among university students, particularly those engaged in English Education programs. Through a narrative inquiry approach, the research uncovered how students navigated the emotional, cognitive, and technological dimensions of creating their digital stories. Their experiences demonstrate that DST is far more than a creative digital assignment—it becomes a transformative space where learners reflect, experiment, and reimagine who they are and who they can become. The findings reveal four interconnected learning shifts. First, DST nurtures reflective awareness by encouraging students to revisit their learning histories and articulate personal meaning behind their experiences. This reflective turn helps learners recognize their progress and confront challenges with greater clarity. Second, students develop stronger digital and multimodal competencies, gaining confidence not only in using technological tools but also in crafting purposeful and coherent narratives. These skills contribute directly to the digital literacy demands of contemporary higher education.

Third, the autonomy students developed throughout the process illustrates how DST supports the growth of self-directed learning. Students' willingness to troubleshoot independently, explore new resources, and revise their work demonstrates emerging lifelong learning habits such as persistence, initiative, and creative problem-solving. Finally, DST contributes to identity reconstruction by allowing students to express their evolving selves. Through storytelling, many students came to view themselves not merely as learners striving to pass courses, but as individuals capable of ongoing growth and meaningful transformation.

Taken together, these findings suggest that DST holds significant pedagogical value in higher education, particularly in programs focused on language learning, digital literacy, and reflective practice. By integrating personal narrative with multimedia composition, DST offers a unique pathway for cultivating the dispositions that support lifelong learning: curiosity, adaptability, reflection, and a sense of ownership over one's development.

In an era where digital skills and reflective awareness are increasingly essential, DST provides a powerful, human-centered approach to preparing students for continuous learning beyond the classroom. Future research may explore how these insights apply across disciplines or how DST can be scaled to different educational contexts to further support lifelong learning cultures in higher education.

Limitations and Suggestions for Future Research

Although this study provides meaningful insights into how digital storytelling supports the development of lifelong learning mindsets among university students, several limitations should be

acknowledged. These limitations do not diminish the value of the findings; rather, they highlight areas where future research can deepen and extend the understanding of digital storytelling in higher education.

The first limitation concerns the sample size and context. This study involved a small group of English Education students within one institutional setting. While narrative inquiry prioritizes depth over breadth, the findings may not fully represent the experiences of students in other disciplines, institutions, or cultural contexts. Students majoring in fields such as engineering, health sciences, or business might engage with DST differently due to variations in curriculum demands, digital exposure, and identity development. Future studies could include more diverse populations to explore how DST functions across different academic environments.

A second limitation lies in the reliance on self-reported and narrative data. Although interviews, journals, and digital artifacts provide rich, reflective insight, they are also influenced by participants' willingness to share personal experiences. Some students may have withheld certain emotions or difficulties, while others may have narrated their stories more positively. Complementing narrative data with additional forms of observation or longitudinal tracking may offer a fuller picture of how lifelong learning dispositions evolve over time.

The third limitation relates to the short duration of the study. Digital storytelling was implemented within a single semester, which may not have been long enough for students to fully internalize lifelong learning habits. While students demonstrated emerging autonomy and reflective awareness, the sustainability of these shifts remains uncertain. Long-term studies could investigate whether learners continue to practice reflection, self-direction, and digital literacy beyond the course.

Finally, this study did not examine pedagogical variables such as instructor feedback, assessment design, or peer collaboration in depth—even though these elements may meaningfully shape students' engagement with DST. Future research may explore how different instructional strategies enhance or hinder the development of lifelong learning mindsets.

Overall, future research would benefit from broader samples, mixed-method approaches, longitudinal designs, and cross-disciplinary comparisons. Such studies will strengthen the evidence base for digital storytelling as a transformative pedagogical approach and clarify how it can be implemented effectively to nurture lifelong learning cultures in higher education.

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