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## Empowering Marginalized Voices: Digital Storytelling as a Tool for Inclusive Higher Education Pedagogy

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### ABSTRACT

This study examines the integration of Digital Storytelling (DST) as a Universal Design for Learning (UDL)-aligned pedagogical strategy to enhance inclusion and engagement in higher education for rural, first-generation students in Pakistan. Using a reflective, qualitative case study approach, this research explores DST as a narrative-based, low-tech intervention that amplifies students' voices and cultural identities. Addressing structural challenges such as linguistic mismatch, digital inequity, and inflexible curricula in public-sector universities, undergraduate students used accessible mobile tools over a five-week period to create personal digital narratives, drawing from UDL's principles of multiple means of engagement, representation, and expression. Data were collected through student artifacts, reflective journals, and instructor observations. Thematic analysis revealed increased learner agency, emotional resonance, and participation in otherwise passive learning spaces. While based on a small sample, the study provides contextually grounded insights into inclusive pedagogy for under-resourced tertiary institutions. The findings affirm DST's value as a context-sensitive, inclusive pedagogy in resource-constrained environments. Situated within the framework of Sustainable Development Goal 4 (Quality Education), this study highlights how even small-scale, student-centered interventions can challenge exclusionary structures and promote equitable participation in tertiary education. These findings offer practical implications for educators and policymakers seeking scalable and inclusive teaching strategies in low-resource higher education environments worldwide.

### INTRODUCTION

In the evolving discourse on equitable higher education, ensuring the inclusion of learners from rural, low-income, and first-generation backgrounds remains a persistent and complex challenge particularly across South Asia. In Pakistan, such students routinely face a nexus of systemic barriers, including digital exclusion, linguistic disconnects between home and academic languages, rigid assessment structures, and limited exposure to inclusive pedagogical models. These challenges are especially pronounced in public-sector universities, where outdated curricula, infrastructural deficits, and a lack of instructional reform often constrain meaningful student engagement and suppress learner agency.

To address these disparities, contemporary pedagogical frameworks increasingly emphasize learner agency, multimodal participation, and culturally responsive instruction as cornerstones of inclusive education. One approach gaining traction in this context is Digital Storytelling (DST) a narrative-based method that enables learners to create and share stories using voice recordings, visuals, and basic digital tools. DST fosters reflection, creativity, and connection factors associated with student engagement and empowerment (Fletcher & Mullett, 2016; Thomas & Manalil, 2025). Its underlying principles are closely aligned with the Universal Design for Learning (UDL) framework, which advocates for the provision of multiple means of engagement, representation, and expression to accommodate diverse learner profiles and

abilities (CAST, 2018; Meyer *et al.*, 2014).

Despite a growing international evidence base, the use of DST in South Asian higher education particularly within Pakistani public universities remains limited. Rural and linguistically diverse classrooms continue to rely heavily on didactic, text-centric teaching approaches, often neglecting narrative or multimodal strategies that promote student voice. Curricular reforms in such settings have historically prioritized content transmission and standardized testing, with minimal space for creative or reflective pedagogies (HEC, 2024). Similarly, while UDL is referenced in emerging policy frameworks, its translation into everyday teaching practice is rare hampered by insufficient faculty development, lack of technological support, and institutional inertia (Aijaz, 2024; Priyadharsini & Sahaya Mary, 2024). Similar implementation gaps have been observed across other LMICs, where contextual, culturally responsive innovations remain underexplored (Moriña *et al.*, 2025).

This study seeks to bridge these gaps by examining the integration of DST within a UDL-informed instructional design at a public-sector university in Punjab, Pakistan. It investigates two core questions: (1) How does DST empower first-generation rural students to articulate their lived experiences and build academic confidence? and (2) How can multimodal, inclusive learning environments foster deeper engagement and participation in constrained classroom contexts? By foregrounding student voice and contextual realities, this study contributes empirically

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grounded insights into low-tech, scalable strategies for inclusive teaching in higher education. The research also directly supports the aims of Sustainable Development Goal 4 (SDG 4), which advocates for inclusive, equitable, and quality education for all (UNESCO, 2019).

## LITERATURE REVIEW

### Digital Storytelling as a Pedagogical Tool in Higher Education

Digital Storytelling (DST) has emerged as a pedagogical approach grounded in constructivist and socio-cultural learning theories. It enables students to combine voice, visuals, and digital media to express personal and academic narratives, promoting reflective thinking and emotional engagement (Austen *et al.*, 2021; Lambert, 2021). In higher education, DST has been recognized for its capacity to humanize learning by fostering agency and authenticity particularly among students who have traditionally been marginalized in formal academic discourse (Thomas & Manalil, 2025).

Empirical studies from high-resource contexts demonstrate that DST enhances self-authorship, identity development, and inclusive participation. For instance, Thomas and Manalil (2025) found that first-generation and rural university students used DST to reclaim narrative authority and connect emotionally with academic content, thereby improving classroom engagement. Similarly, Fletcher and Mullett (2016) reported that DST projects enabled marginalized and multilingual learners to navigate language barriers and communicate meaningfully in diverse learning environments.

In contrast, DST remains underutilized in Pakistani higher education, where it is often treated as a co-curricular or supplementary activity. Aijaz (2024) documented improved engagement and conceptual understanding among students in a DST-integrated science module but noted a lack of institutional support and formal curricular integration. Despite these challenges, studies such as Nair and Md Yunus (2022) demonstrate that even in resource-limited environments, DST can yield significant learning gains provided the approach is contextually adapted and intentionally embedded into course design.

### Universal Design for Learning (UDL) and Inclusive Pedagogy

Universal Design for Learning (UDL) is a research-based framework developed by CAST (2018) to proactively accommodate learner diversity through flexible instruction. UDL promotes three core principles: multiple means of engagement, representation, and expression. These principles draw on cognitive neuroscience and educational psychology to reduce barriers and support varied learner needs across cultural, linguistic, and cognitive domains (Meyer *et al.*, 2014).

In tertiary education, UDL has been linked to increased academic resilience, autonomy, and persistence, particularly in culturally diverse or under-resourced classrooms (Priyadharsini & Sahaya Mary, 2024). Arias

*et al.* (2023) emphasize that UDL fosters equitable access and differentiated learning when integrated into institutional pedagogical frameworks. Supporting this, Gallego (2023) found that applying UDL principles in a General Psychology course at a Philippine university significantly improved student performance and engagement through varied content delivery and flexible assessments. Similarly, Phan *et al.* (2025) reported that integrating diverse assessment modes, such as audio-visual outputs and project-based evaluation, in online tertiary classrooms improved learner motivation and inclusivity—echoing UDL's emphasis on multiple means of expression. However, in South Asia, UDL's practical uptake remains limited. Ahmad *et al.* (2023) highlight barriers such as rigid curricular structures, limited digital access, and a lack of faculty development opportunities. At the school level, promising models are emerging. Javed *et al.* (2024) found that UDL-informed teaching using storyboards and roleplay increased student attendance and participation in low-income primary schools. Yet these innovations rarely translate into higher education due to institutional inertia and minimal resource allocation for inclusive design. Even where national policy supports inclusive education as seen in the Higher Education Commission's (HEC, 2024) curriculum reforms the implementation of UDL principles remains fragmented and inconsistent.

### The Synergy Between DST and UDL in Low-Resource Contexts

Though often discussed separately, DST and UDL share significant conceptual synergy. DST's inherently multimodal nature aligns closely with UDL's emphasis on providing multiple pathways for expression, engagement, and representation (Lv *et al.*, 2024). The combination allows students to draw upon linguistic, cultural, and creative resources to demonstrate learning in ways that are personally meaningful and contextually relevant.

Recent global studies confirm the efficacy of this synergy. Fletcher and Mullett (2016) show that students with diverse language backgrounds produced more confident and nuanced narratives when DST was scaffolded using UDL-informed strategies. These hybrid pedagogies foster inclusive learning environments by normalizing variation and validating student experience (Thomas & Manalil, 2025).

However, much of this evidence originates from well-funded institutions with reliable digital infrastructure. In low- and middle-income countries (LMICs), including Pakistan, such integration remains rare. While the Higher Education Commission (HEC, 2024) has outlined inclusive goals, faculty often lack training or resources to implement multimodal, student-centered approaches. Aijaz (2024) notes that DST and UDL are often viewed as abstract ideals rather than actionable practices within resource-constrained classrooms. This underscores the need for locally grounded models that demonstrate feasibility and impact in low-tech environments.

### Addressing Gaps Through Contextualized Practice

The literature reveals critical gaps in both scholarship and practice. Empirical research on DST in South Asian higher education is sparse, particularly in rural or multilingual institutions. Similarly, while UDL is widely cited in policy documents, its actual implementation in Pakistani universities is rare and largely unmonitored. Most significantly, there is a lack of integrated models that draw on both DST and UDL to promote inclusive engagement within the structural limitations of public-sector universities.

This study responds to those gaps by piloting a DST-based intervention, explicitly aligned with UDL principles, in a rural teacher education university in Pakistan. It offers not only empirical insights into student voice and engagement but also practical guidance for designing scalable, low-cost, and inclusive pedagogies. The findings contribute to global literature on inclusive education and respond directly to regional calls for innovation in under-resourced tertiary settings.

### MATERIALS AND METHODS

This qualitative case study employed a reflective design to explore how Digital Storytelling (DST), grounded in Universal Design for Learning (UDL) principles, could foster inclusion, voice, and engagement in a rural tertiary classroom. A reflective case study was considered particularly appropriate for this under-researched context, as it allows the researcher to capture lived pedagogical

realities while implementing an applied instructional intervention (Yin, 2018). The approach enabled the integration of both researcher reflection and student experiences, creating a holistic understanding of inclusive pedagogical practice.

### Setting and Participants

The research was conducted at a rural public-sector teacher education university in Punjab, Pakistan, which primarily serves linguistically diverse, low-income students from semi-urban and rural districts. A purposive sample of 18 undergraduate students enrolled in a compulsory “Educational Technology” course participated in the study. All participants were first-generation university attendees, and most had limited prior exposure to digital tools or multimodal learning environments.

### Intervention Design: Pedagogical Implementation

The DST-UDL intervention was embedded within the existing curriculum and spanned five weeks. Its design was explicitly informed by the three core principles of Universal Design for Learning: multiple means of engagement, representation, and expression (CAST, 2018). Rather than treating DST as an ancillary activity, it was positioned as the central pedagogical strategy to foster student voice, creativity, and academic relevance. Each week followed a structured yet flexible format to support scaffolding and student autonomy:

**Table 1:** Weekly Pedagogical Flow of the DST-UDL Intervention

| Week | Focus Area                      | Activities   |
|------|---------------------------------|--|
| 1    | Introduction to DST and UDL     | Orientation on inclusive pedagogy; DST exemplars; class discussion       |
| 2    | Story Ideation and Scripting    | Brainstorming themes; individual storyboarding; peer/instructor feedback |
| 3    | Voice and Visual Development    | Mobile audio training; collection of photos, illustrations, or drawings  |
| 4    | Multimedia Assembly and Editing | Integration of voice, visuals, and text using free editing tools         |
| 5    | Story Sharing and Reflection    | Class presentations, peer critique, guided reflective journaling         |

Students primarily used smartphones, voice recording apps, hand-drawn visuals, and basic editing software (e.g., InShot, Kinemaster). To support the pedagogical implementation, the instructor adopted a reflective teaching model journaling key classroom interaction, adaptation strategies, and challenges faced throughout the intervention.

### Data Collection

Multiple qualitative data sources were used to triangulate perspectives and enhance the study’s trustworthiness:

#### Student Reflective Journals

Students completed weekly journal entries that captured their individual experiences, emotional responses, and learning outcomes related to the DST process. These reflections provided insight into personal growth, perceived inclusion, and engagement.

#### Semi-Structured Interviews

Post-intervention interviews were conducted with 10 students and the course instructor. Interviews explored perceptions of inclusion, academic confidence, digital fluency, and identity expression. Conducted in either English or Urdu (as preferred by participants), all interviews were audio-recorded with consent and transcribed for analysis.

#### Classroom Observations and Instructor Reflections

Non-participant classroom observations were carried out during all five weeks of the intervention, with field notes focusing on student collaboration, participation, and adaptation to digital tasks. These were supplemented by the instructor’s reflective journal, which documented pedagogical adjustments, student responses, and contextual constraints.

### Data Analysis

Data were analyzed thematically using Braun and Clarke (2006) six-phase framework. This approach supported both inductive and deductive coding, with the UDL principles serving as an analytical lens to examine how students engaged with the intervention across cognitive, emotional, and expressive domains.

NVivo software was used to organize and manage the data. Codes and themes were refined through multiple iterative cycles, with triangulation across journals, interviews, and observations. Member checking was conducted with five participants to validate initial themes, and peer debriefing helped mitigate researcher bias. Peer debriefing was also employed to ensure analytical credibility.

### Ethical Considerations

This study was conducted in accordance with institutional norms for low-risk educational research. As no invasive procedures or sensitive personal data were involved, formal Institutional Review Board (IRB) clearance was not required at the time of data collection. Verbal informed consent was obtained from all participants after clearly explaining the study's purpose, voluntary nature, and assurance of anonymity and confidentiality. Students were informed that their participation would have no bearing on their grades or academic standing and that they could withdraw at any point without penalty. All identifiable information was anonymized during analysis and reporting.

### Limitations

While the study offers contextually rich insights into inclusive pedagogical practice, it is limited by its small sample size, single-institution scope, and absence of quantitative outcome measures. Thus, findings are not broadly generalizable but are intended to inform future implementation of low-cost, inclusive strategies in similarly constrained settings. Additionally, variability in student digital literacy and instructor facilitation may influence the scalability and replicability of the intervention.

## RESULTS AND DISCUSSION

This exploratory case study presents evidence on how Digital Storytelling (DST), implemented within a Universal Design for Learning (UDL) framework, supported inclusion, engagement, and identity development among first-generation university students in a rural Pakistani higher education context. Drawing on student reflective journals, interviews, classroom observations, and instructor reflections, four dominant themes emerged that reflect the pedagogical and emotional impact of the DST-UDL intervention.

### Amplifying Student Voice and Identity Expression

A key outcome of the intervention was the empowerment of students to articulate personal narratives, often for the first time in academic settings. Through scripting

and voice recording, students were able to reclaim their stories and position themselves not merely as learners, but as knowledge producers with lived expertise.

“For the first time, I was telling my own story in a class and it felt like my voice mattered.”

This theme aligns with UDL's principle of multiple means of engagement, which emphasizes the emotional investment learners demonstrate when content connects with their lived realities (CAST, 2018). The DST process, by centering student-authored content, enabled deeper reflection and fostered narrative agency a feature well-documented in literature on inclusive pedagogies (Fletcher & Mullett, 2016; Thomas & Manalil, 2025).

Several students spoke about previously untold experiences ranging from intergenerational family expectations to rural educational struggles that were often silenced in conventional classrooms. One female participant recounted the resistance she faced from her family in pursuing higher education, noting that DST provided her with a space to “speak with pride, not guilt.” These expressions resonate with the argument by Ng-A-Fook *et al.* (2013) that DST fosters psychological safety and validates marginalized identities in formal learning spaces. These findings also echo Riessman (2008) assertion that narrative methods offer marginalized individuals' agency through structured self-representation in institutional settings. This also echoes Alterio and McDrury (2013) concept of “learning through storytelling,” where reflective narrative becomes a conduit for identity development and epistemic confidence in higher education. This highlights the value of integrating DST in teacher education to promote culturally relevant pedagogy.

### Emotional and Multimodal Engagement through Inclusive Expression

Despite infrastructural limitations such as outdated devices, poor internet access, and low baseline digital literacy students found innovative ways to express themselves using basic technology. Most participants used smartphones, voice notes, hand-drawn illustrations, and free mobile apps like InShot or Kinemaster to assemble their stories.

“I felt like I had learned something new and was capable of delivering my message.”

This emotional resonance affirms UDL's principle of multiple means of expression, enabling students to move beyond traditional linguistic barriers. Lv *et al.* (2024) and Priyadharsini and Sahaya Mary (2024) similarly argue that multimodal platforms promote student agency, especially for those constrained by rigid academic language norms. In this study, students blended Urdu, Punjabi, and English with voiceovers, cultural idioms, family photos, and background music to express themselves more fully.

One student created a DST artifact centered on her late grandmother, using her own sketches and voice narration a submission that deeply moved her peers. Such emotionally anchored, multimodal expression

underscores the importance of flexibility in content creation, particularly for students in linguistically and culturally diverse environments (Fletcher & Mullett, 2016). These narratives show how low-tech tools can become gateways to high-engagement learning, validating differentiated expression as both academically rigorous and personally meaningful. Such low-tech multimodal practices could be scaled across other Global South contexts to foster meaningful engagement.

**Building Peer Solidarity and Collaborative Belonging**

Beyond individual expression, the DST process catalyzed strong peer relationships and collective empathy. Students described how collaborative activities such as storyboarding and peer review restructured classroom dynamics into more inclusive and emotionally safe environments.

“We were all interested in each other’s stories. The class became more friendly.”

These moments reflect UDL’s emphasis on engagement through community, where interaction and social recognition drive motivation. Student-to-student critique became a generative space for support, enabling feedback loops built on mutual respect rather than formal academic competition.

This mirrors findings by Dutta and Keith (2023) who advocate for storytelling in higher education as a tool to foster peer empathy and deeper social bonding. One classroom observation revealed that a typically withdrawn male student became highly participative when offering feedback on a peer’s story about rural–urban migration. Such behavioral shifts suggest that storytelling can build relational belonging, a key factor in tertiary student retention (Strayhorn, 2019).

Riessman (2008) notes that narrative exchange is not only a form of knowledge production but also an act of collective meaning-making an insight well reflected in the classroom atmosphere during this intervention.

Peer solidarity through storytelling shows promise for reducing dropout risk among first-gen learners.

**Contextual Feasibility and Pedagogical Scalability**

A significant contribution of this study lies in its demonstration of how DST can be feasibly adapted in low-resource, rural higher education settings. Students navigated digital constraints using everyday devices and free or locally available tools, yet the quality and depth of expression remained high.

“I only had a basic phone, but I still managed to create my story.”

This finding underscores that technological sophistication is not a prerequisite for inclusive practice. What matters more is intentional instructional design and a willingness to adapt tools creatively. The success of the DST-UDL model supports Priyadharsini and Sahaya Mary (2024) assertion that contextual adaptation is often more sustainable and culturally relevant than imported digital pedagogies.

Students also expressed interest in extending DST to other courses, believing it helped them internalize academic concepts through real-life examples. However, some voiced hesitation about whether faculty would perceive storytelling as “academic enough” highlighting an institutional resistance to non-traditional outputs. The findings also align with Phan *et al.*, (2025) conclusion that context-sensitive, multimodal assessment strategies significantly enhance engagement and participation in resource-constrained tertiary environments.

These tensions align with Aijaz (2024) and Ahmad *et al.* (2023) who critique the dominance of rigid assessment structures in Pakistani higher education that often marginalize alternative forms of expression. Nevertheless, the students’ positive response suggests a readiness for pedagogical innovation, even if institutional acceptance lags behind. This demonstrates the practicality of inclusive pedagogy in underfunded institutions without reliance on complex technologies.

**Table 2:** Summary of Thematic Findings

| Theme                            | Key Insight  |
|----------------------------------|--|
| Amplifying Voice and Identity    | Students developed confidence and agency through personal narrative    |
| Multimodal Emotional Engagement  | Low-tech storytelling enabled deeper emotional and expressive learning |
| Peer Belonging and Collaboration | Shared narratives fostered empathy, trust, and active participation    |
| Contextual Feasibility           | DST proved adaptable and scalable within rural higher education        |

**Implications and Novel Contributions**

This study presents one of the first empirical accounts of implementing DST within a UDL framework in a rural Pakistani university setting. While global literature has lauded DST’s capacity for fostering inclusion, its application in low-income, linguistically diverse South Asian contexts remains underexplored. By demonstrating how DST can be effectively used with limited resources, this study contributes a novel, culturally grounded model for inclusive tertiary pedagogy.

Moreover, the research directly supports the objectives of

Sustainable Development Goal 4 (SDG 4), advocating for inclusive and equitable quality education. It demonstrates that meaningful engagement, identity expression, and academic confidence can be cultivated without expensive technology simply by centering student voice and embracing multimodal design.

**CONCLUSIONS**

This study demonstrates that Digital Storytelling (DST), when grounded in Universal Design for Learning (UDL), offers an effective and affordable strategy to

enhance inclusion and engagement in under-resourced higher education settings. Conducted at a rural Pakistani university, the intervention empowered first-generation students to narrate their lived experiences, fostering agency, identity expression, and academic belonging through accessible tools like smartphones and free apps. The synergy between DST's narrative openness and UDL's flexible engagement pathways enabled students to participate meaningfully, despite infrastructural and linguistic barriers. The approach aligns with Sustainable Development Goal 4 (SDG 4) by showcasing how pedagogical innovation—not just technology—can support equitable learning opportunities. While limited in scale and generalizability, the study highlights promising directions for future research, including mixed-method or longitudinal investigations across multilingual and postcolonial contexts.

Educators, curriculum developers, and policymakers in the Global South are encouraged to integrate DST within faculty training, teacher education, and inclusive assessment practices. This model affirms student voices, validates cultural identities, and reimagines classrooms as responsive, empowering spaces—especially where resources are limited. With thoughtful adaptation, DST can serve as a systemic tool for inclusion across similarly constrained educational contexts.

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