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Smartphones as pedagogical tools: Transforming analog classrooms through digital storytelling

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Abstract

The integration of digital technology into language learning environments has shifted pedagogical approaches towards more immersive, student-centered methods. Despite this, many classrooms remain anchored in traditional, analog methodologies. This study explores the innovative integration of digital storytelling in such environments by leveraging smartphones for educational purposes. Using a mixed methods research approach, the study combined classroom and fieldwork observations with surveys and debriefing interviews. Students demonstrated a high degree of adaptability, utilizing their smartphones effectively, even in the absence of a technology-rich classroom environment. The results challenge conventional beliefs that tech-centric projects demand tech-intensive settings. The study indicates the potential benefits of incorporating digital storytelling, especially in language learning contexts, promoting engagement, skill development, and higher-order thinking. It further emphasizes the pedagogical advantages of digital storytelling and advocates for its broader implementation in diverse educational contexts. Future research might explore the long-term effects of digital storytelling on student performance and its applicability across various disciplines.

Keywords: digital storytelling, smartphones, analog classrooms

Introduction

The rise of digital technology and its integration into language learning environments have significantly transformed teaching and learning practices, ushering in a paradigm shift from traditional pedagogical approaches to more immersive,

student-centered ones (Jonassen, Howland, Moore, & Marra, 2003). However, it is important to acknowledge that the reach of this digital transformation is not consistent across all educational landscapes. Numerous classrooms still predominantly adhere to analog methodologies, with minimal integration of technological tools.

In this evolving educational landscape, the analog nature of many classrooms, far from being a hindrance, can be effectively leveraged for innovative project-based learning tasks like digital storytelling. Digital storytelling tasks can create a blend of traditional and digital learning, thus bringing the benefits of digitization to every classroom. Digital storytelling merges narrative techniques with digital media, such as images and videos, to create digital narratives. In language learning, one example is a Cultural Exchange Project (O'Dowd & Dooly, 2020), where students collaborate with native speakers to craft digital stories about their local customs and daily life in the target language, enhancing linguistic skills and cultural insights. Another instance is Personal Journey Narratives (Robin, 2006), where learners narrate significant personal experiences in the target language, using personal photos and music, thereby deepening their language proficiency through emotionally engaging content. Digital storytelling in language learning merges the digital and traditional, enhancing education without needing advanced technology. It makes learning more dynamic and student-focused, enriching language acquisition, cultural insights, and oral proficiency through engaging narratives (Robin, 2006; Vinogradova et al., 2011; Kim, 2014).

Moreover, the ubiquitous presence of smartphones renders the integration of digital storytelling into traditional classrooms increasingly feasible and accessible. Smartphones not only offer a familiar tool for students but also eliminate many logistical barriers such as the need for extensive equipment and resources, previously associated with digital storytelling projects (Churchill, 2009).

Despite the potential benefits of digital storytelling, educators may feel reluctant to implement such initiatives in analog classrooms. This reluctance often stems from perceived barriers such as lack of technical expertise, concerns about time management, fear of distraction, and worries about inequitable access to technology among students. (Dogan & Robin, 2008)

To begin with, the fear of inadequate technical expertise is often cited as a significant deterrent for educators (Ertmer, 2005). Many teachers feel they lack the necessary digital literacy skills to guide students through a digital storytelling project. However, this concern may be overestimated. With today's intuitive and user-friendly smartphone apps, creating digital stories has become far less technically demanding than in the past. Moreover, teachers are not required to be technology experts. Their primary role remains as facilitators in the learning process, helping students to find, evaluate, and apply information in a meaningful way (Crompton, 2017). In addition, students are often already adept at creating digital narratives, mainly due to their extensive involvement with social media platforms. These platforms encourage the use of images, videos, and text to communicate personal stories, ideas, and experiences, thus enabling young people

to instinctively engage with digital storytelling from an early age (Jenkins, et al. 2009).

Concerns about time management are also prevalent. Designing, implementing, and evaluating digital storytelling projects can be time-consuming, and many educators worry about fitting these projects into an already-packed curriculum (Hixon & So, 2009). However, it's important to remember that digital storytelling projects can be seamlessly integrated into existing curricula as a creative means for students to demonstrate an understanding of core topics. These projects can replace traditional assignments, rather than being an add-on, thereby eliminating the need for additional time allocation. For language learners, in particular, this integration can provide a multifaceted platform to practice and showcase their linguistic and communicative skills dynamically.

Another common concern among educators is the fear of distraction caused by allowing students to use their smartphones in class. According to Beland and Murphy (2016), there is a worry that students might misuse them for non-educational purposes during class time. However, multiple studies have shown that when used with clear guidelines and engaging tasks, smartphones can greatly enhance learning, rather than detract from it (Kuznekoff & Titsworth, 2013; Chen et al., 2015; Sung et al., 2016). Thus, setting clear expectations and guidelines for smartphone use can help alleviate this concern.

Finally, concerns regarding equitable access to technology can discourage the implementation of digital storytelling in the classroom (Warschauer & Matuchniak, 2010). Yet, with the widespread adoption of smartphones, many students now have access to high-quality recording and editing tools right in their pockets. Furthermore, for students who may not own a smartphone, educators can cultivate a collaborative environment where resources are shared, or they can leverage school-provided technology.

This paper explores the implementation and educational outcomes of digital storytelling in traditional classrooms, examining its impact on language learning and student engagement. The primary focus is to show that smartphones can be used to facilitate digital storytelling within traditional learning environments. This paper highlights the possibility of fusing digital innovation with conventional pedagogy, generating insightful implications for educators navigating this blended learning terrain. By adopting this approach, the results described in this paper provide a fresh perspective on the potential for educators to turn traditional classrooms into dynamic learning hubs.

Method

This study employed a mixed methods research design, integrating both qualitative and quantitative methodologies to obtain a comprehensive understanding of the effects of digital storytelling in a traditional classroom. The research strategy involved classroom and fieldwork observation, alongside survey data collection and debriefing interviews.

The participants in this study were 79 first and second-year university students in Japan who were studying English. The participants were enrolled in required English courses that focused on listening and speaking skills. The main instrument for data collection was an anonymous survey, designed to elicit self-reported evaluations from students regarding the effect of the digital storytelling project on their motivation, task engagement, contribution to language learning, and collaborative practices. The survey employed a 5-point Likert scale to ask students the degree to which they agreed with five statements provided by the researcher. The survey was designed to ensure clarity, relevance, and comprehensibility for the participants.

Classroom procedures were carefully structured to incorporate the digital storytelling project into the learning process. Initially, students were shown examples of digital storytelling projects to set a benchmark and provide inspiration for their work. Working in small groups, students then undertook research on a cultural asset or location of significant historic value in the community, using this research as the foundation for creating a script to introduce their chosen subject.

Following the research and scriptwriting phase, students were guided to create a storyboard, a crucial step in organizing their narratives visually and temporally. The storyboard served as a roadmap for the final stage of the process: video creation. The videos served to introduce their research topics, amalgamating the students' investigative work, collaborative efforts, and creative abilities.

For the qualitative part of this mixed methods study, fieldwork observations were conducted during the various stages of the project, and debriefing interviews were carried out after the completion of the videos. These qualitative data provided rich, context-specific insights into the students' experiences throughout the project. Given the emphasis on the nuanced use of the target language (English) and the dynamics of group collaboration observed, a content analysis approach was used to dissect the qualitative data (Krippendorff, 2018). This method enabled a systematic quantification and interpretation of language use and collaborative interactions within the student groups.

The mixed methods approach, encompassing the anonymous survey, fieldwork observation, and debriefing interviews, provided a multi-faceted view of the impacts of digital storytelling on student engagement, learning, and collaboration, providing valuable findings for further discussions and implications.

Results and discussion

Table 1 below shows results from the self-assessment survey students completed at the end of the digital storytelling projects. A preliminary version of the results presented in Table 1 can be found in Irwin (2019).

Table 1

Self-assessment survey results

	Strongly disagree			Strongly agree		Mean (SD)
	1	2	3	4	5	
This project motivated me to learn English.	0	0	11	34	34	4.3 (0.70)
This project improved my English.	0	1	5	27	46	4.5 (0.68)
I used English when filming this project.	3	8	21	29	18	3.7 (1.06)
I used English when writing the script.	0	4	12	27	36	4.2 (0.88)
I used English when researching this project.	6	16	11	26	20	3.5 (1.28)

The study revealed very high levels of motivation and task engagement among students. Students strongly agreed that the digital storytelling project motivated them to learn English (M=4.3) and that their English improved (M=4.5). The quality of the videos they produced stood as a testament to their absorbed involvement in the task and reflected the sense of ownership they took over their learning. These findings align with prior research demonstrating that digital storytelling fosters motivation and engagement in the learning process. For instance, a study by Robin (2008) indicated that digital storytelling has the potential to increase students' motivation and engagement, by making learning tasks more appealing and meaningful.

Survey data further showed that students felt they used English during the research (M=3.5) and filming (M=3.7) processes. This resonates with the findings of Yang and Wu (2012), who reported an improvement in target language use among students who participated in digital storytelling activities. Notably, students strongly agreed that they made an effort to use English while writing their scripts (M=4.2). Because students also reported that they rehearsed the narration several times when recording to increase their speaking fluency and comprehensibility, it is evident that they engaged deeply with language usage and structure. The narration component of the task also provided an opportunity for oral language practice.

In the qualitative feedback gathered from the debriefing interviews, a common theme that emerged was the positive impact of the project on students' social skills. For instance, several students mentioned how the collaborative nature of the project enhanced their ability to work effectively in teams. One student noted, 'I learned how to listen more carefully to others' ideas and contribute constructively during discussions.' Another example includes a student who highlighted the improvement in conflict resolution skills, stating, 'We had different

ideas of what to include in the project. We learned how to resolve disagreements by discussing with our ideas with each other.' This finding is consistent with previous studies, such as the one conducted by Smeda, Dakich, and Sharda (2014), which posited that digital storytelling could foster social skills and promote student interaction.

Interestingly, this study also found that digital storytelling promoted higher-order thinking skills, a finding that echoes the results of research by Howland et al. (2013), who argued that technology-integrated learning encourages students to engage in higher-order thinking skills such as analysis, synthesis, and evaluation. The process of creating a digital story obliged students to critically analyze their research topic, synthesize information, and make evaluative decisions throughout the story construction process. These higher-order thinking skills were seen during classroom observation of the research and storyboarding activities.

A remarkable observation from the end of project debriefing interviews was the lack of any negative feedback from students regarding the implementation of a digital storytelling project within an analog classroom environment. Participants didn't view the absence of a technology-rich setting as a hindrance. Instead, they successfully navigated the given environment to produce impactful digital stories using their devices, namely smartphones. This highlights the adaptability and resourcefulness of students in the present digital age, where constraints of the physical environment might not be as limiting as previously thought for certain digital tasks.

The quality and effectiveness of the finished projects further confirmed that the absence of a technologically advanced classroom did not compromise the integrity or outcomes of the digital storytelling process. In fact, some might argue that the analog setting forced students to be more creative, self-reliant, and efficient, honing not just their digital storytelling skills but also enhancing their problem-solving capabilities. This study's results thus challenge the conventional belief that tech-intensive projects necessarily require tech-intensive environments, reinforcing the idea that meaningful learning can occur even when resources are limited.

Classroom implementation

Successfully integrating digital storytelling using smartphones into an analog classroom begins with careful planning. According to Howland et al. (2013), the first step requires educators to develop a clear understanding of the learning objectives and then design the digital storytelling assignment around these objectives. The assignment can take various forms, including personal narratives, recounting historical events, explaining complex concepts, or creative fiction writing.

Once the assignment is structured, educators should familiarize students with the basics of digital storytelling. Consistent with Robin (2008), understanding narrative development, scriptwriting, storyboard creation, image and audio

usage, and the ethical considerations of digital content are all important aspects of digital literacy. It's also crucial that educators select a suitable digital storytelling application, compatible with students' smartphones. Tools such as Storybird, Shadow Puppet Edu, or Adobe Spark have been recommended by Ohler (2013). For the project described in this paper, students used 'Clips' which is an application exclusive to iOS, iMovie, and Adobe Spark.

Promoting collaboration is a key aspect of this process. By organizing students into small groups and assigning different roles, educators can encourage the development of teamwork skills alongside a diverse range of technical and creative skills. This aligns with the findings by Yang and Wu (2012), which highlight the role of collaborative digital storytelling in enhancing interpersonal skills.

Before students start creating their digital stories, educators should guide them to create a storyboard that outlines their narrative, including visuals and audio elements. This process aids students in organizing their thoughts more coherently (Robin, 2008). The creation and revision phase requires ample time, with educators providing guidance and feedback, ensuring the process remains focused on learning objectives.

The sharing and reflection phase is a crucial part of the process. Lambert (2010) noted that hosting a 'film festival' for students to share their digital stories can be a rewarding experience that allows them to take pride in their work. Encouraging students to reflect on their learning journey, as suggested by Robin (2008), can deepen their understanding of the subject matter.

Finally, it is essential to have an established rubric to evaluate students' digital stories. As shown by Smeda, Dakich, and Sharda (2014), a comprehensive rubric can encompass a variety of elements such as adherence to the topic, clarity of the narrative, quality of visuals and audio, creativity, and reflection.

Conclusion

This study is not without its limitations. Due to the research setting and the nature of the participants, the results might not be generalized to all contexts or age groups. The study was conducted within a specific educational environment, characterized by its unique cultural, socio-economic, and educational dynamics, which may not be representative of other settings. For example, the resources available, teaching methodologies employed, and the institutional culture can significantly influence the outcomes of educational interventions, making it challenging to apply the findings universally. Furthermore, the participant group was comprised of individuals from a narrow age range, limiting the applicability of the results to this demographic. The developmental stages, interests, and learning capacities of students can vary widely across different age groups, potentially affecting the relevance and impact of the project's outcomes. Consequently, the specific context in which this study was conducted, coupled with the homogeneous participant demographics, restricts the extent to which the findings can be extrapolated to broader populations or diverse educational settings.

Despite these limitations, the findings of this study have important implications. The results provide valuable insights into the potential benefits of incorporating digital storytelling in higher education classrooms, especially for language learning. It underscores the role of digital storytelling in enhancing students' engagement, motivation, language skills, social skills, and higher-order thinking skills, offering a potent case for more widespread application of such pedagogical strategies in education.

This study also illuminates the transformative potential of integrating digital storytelling into traditional, analog classrooms, particularly for language learning. By leveraging personal devices, the study finds that students not only become more engaged and motivated but also show significant improvement in language skills, social interactions, and higher-order thinking. The findings debunk common concerns around technical challenges, time management, and classroom distraction, suggesting that with thoughtful planning and execution, digital storytelling can enliven traditional pedagogical methods. This presents compelling evidence for the wider adoption of such innovative approaches in educational settings, even when resources are limited.

Future research could consider studying the long-term effects of digital storytelling on students' academic performance and skill development. Further, exploring how digital storytelling might be adapted and implemented in different educational contexts or across various disciplines would also be valuable.

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Author bio

Bradley Irwin has written extensively about corrective and formative feedback practices and innovative approaches to technology use in language learning. His research interests include language learner identity, autonomous learning, CALL, and AI.