Does Experiential Digital Storytelling Help Pre-Service Teachers Learn Digital Literacies in Indonesia?

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Sections Info	ABSTRACT
Article history: Submitted: November 30, 2024 Final Revised: December 01, 2024 Accepted: December 09, 2024 Published: December 09, 2024 *Keywords:* Digital storytelling Digital literacy Preservice teachers Teaching practicum	***Objective:*** *This study aims to document the practices of preservice English teachers (PSETs) in integrating digital storytelling (DST) during their teaching practicum. It seeks to identify challenges, opportunities, and the pedagogical knowledge required to utilize DST effectively in English language teaching.* ***Method:*** *The study involved three preservice English teachers who implemented DST projects in three public secondary schools in Indonesia. Data collection was conducted through observation and interviews. The data were analyzed using thematic content analysis to explore technical, pedagogical, and practical aspects of DST integration.* ***Results:*** *The findings highlight three key areas: (1) Technical challenges associated with software design and use, (2) Opportunities and challenges in utilizing DST as a teaching partner, (3) The pedagogical content knowledge necessary for effective DST integration. The results suggest that equipping preservice teachers with DST knowledge and providing scaffolding can enhance the effectiveness of teaching practices.* ***Novelty:*** *This study contributes to the limited body of research on integrating DST in English language teaching in the Indonesian context. It emphasizes the need for further studies to evaluate the impact of English teacher education on learning outcomes and recommends developing educational programs that focus on DST.*

INTRODUCTION

Teacher education is one of the key factors that significantly influences the future practice of preservice teachers (PSTs). To shape their identity as educators, teaching practice is a bridge to integrating preservice teachers into the education profession in real contexts [1]. In university-based teacher education programs, practicum experiences are usually focused on the learning process but also prepare teachers to meet the ever-growing demands of education and serve diverse student populations. Before starting a teaching career, preservice teachers must understand complex everyday educational experiences [2]. At the pedagogical curriculum level, preservice teachers must engage in real teaching experiences in school contexts and reflect on their teaching activities with the support of collaborative teachers and supervising lecturers [3]. Therefore, teacher education must ensure that preservice teachers have the appropriate competencies to face challenges in various work environments. At the pedagogical curriculum level, preservice teachers must engage in real teaching experiences in school contexts and reflect on their teaching activities, with support from collaborative teachers and supervising lecturers [4] [3].

Teacher education needs to ensure that preservice teachers are equipped with appropriate and contextual competencies to face challenges in various work

environments [2], [5]. Teaching practice experience is essential to understanding and formulating the lives and work of teachers, and this experience can be conveyed through digital storytelling, which serves as a reflective or pedagogical tool [3]. Digital storytelling is a promising and effective teaching medium in various contexts [6], [7], [8]. When people share digital storytelling with others, they can observe others' reactions, enrich their reflections on the meaning of the schema, and see themselves from new perspectives. Thus, digital storytelling promotes self-understanding [6] [9]. Digital storytelling helps students understand themselves better and develop their understanding [6], [10]. Novice teachers use digital storytelling to relate experiences they encounter in their professional lives, and teaching practices can be used in teacher education to investigate how novice teachers' professional self-understanding develops through digital storytelling.

In using DST created by pre-service teachers in teacher education, it is important to address these questions in a case study of pre-service teachers' self-reflection during the teaching practicum, where pre-service teachers are positioned as the audience, to uncover how pre-service teachers interpret the DST to answer the research question. Case studies of pre-service teachers' self-reflection seek to understand and uncover how audiences make meaning of digital media rather than predicting audience preferences or media effects [11], [12]. Therefore, the current case study aims to explore how integrating preservice teachers made Digital storytelling projects influence their professional self-understanding during teaching practice experiences.

RESEARCH METHOD

This study explores how integrating Digital Storytelling (DST) projects created by pre-service teachers affects their professional understanding during a three-month teaching practice experience. The main focus of this study is to determine their attitudes toward learning and teaching based on their opinions after undergoing digital storytelling practice. To achieve this goal, pre-service English teachers were encouraged to create their own digital stories by telling stories through images using various programs, such as Windows Movie Maker, FlipaClip, Canva, PowerPoint, and CapCut. The main design of this qualitative study is a case study, which is an empirical investigation of a contemporary phenomenon in a real-life context, especially when the boundaries between phenomenon and context are difficult to determine [13], [14]The researcher chose this case study design because of a unique partnership between the English Language Education Department at a university in Indonesia and several schools. This partnership aims to improve the quality of pre-service teachers' teaching competencies through digital storytelling in teaching practicum.

This study was conducted over three months at an East Java, Indonesia, university. The participants were pre-service teachers enrolled in the teaching practicum program, with 144 pre-service teachers placed across 12 different schools. Each school hosted 8 pre-service teachers who were mentored by a cooperating teacher and supervised by a

lecturer or researcher. The mentors and supervisors provided guidance during the practicum, assisting with lesson planning and classroom activities. Every two weeks, pre-service teachers met with their supervisor and cooperating teacher to reflect on and discuss their teaching experiences. One of the authors supervised 8 pre-service teachers, but only 3 volunteered to participate in this study — the program aimed to support pre-service teachers' identity development as future educators. Participants were assigned to a public senior high school selected for its accessibility and established partnerships with the university. Some pre-service teachers taught tenth-grade students (aged 15–16), while others taught eleventh-grade students (aged 16–17).

The three-month teaching practicum, conducted from October to December 2023, began with a one-week school orientation program. This orientation, organized by the vice principal, introduced pre-service teachers to the school's staff, students, policies, curriculum, and environment. Supervisors and cooperating teachers jointly observed the pre-service teachers' classes during the practicum. The cooperating teacher focused on fostering the development of personal practicum theories. At the same time, the supervising lecturer guided participants in interpreting their experiences based on expertise in TEFL, ELT Curriculum, and Instructional Design. Supervisors visited classrooms daily and conducted joint supervision during regular class hours, observing grade ten and eleven classes weekly.

Three female pre-service English teachers teaching at a public senior and junior high school voluntarily participated in the study. They expressed interest in integrating technology into teaching and exploring digital storytelling. Pseudonyms were used to protect their identities, and the participants' backgrounds included experiences with technology integration in both public and vocational high schools. Observations revealed that while schools had access to technological resources such as laptops, smartphones, smart TVs, online learning management systems, and internet connectivity, effective integration of these tools into lessons remained limited. Teachers faced challenges in selecting appropriate technologies for educational contexts. Technology is only effective in the hands of skilled educators [15]. By introducing digital storytelling, the study aimed to equip pre-service teachers with the skills to integrate technology meaningfully and enhance future teaching practices.

The present study underwent two stages: a pilot study and a main one. The one-week pilot study was conducted to assess the feasibility of activities and identify potential issues. Based on the findings, adjustments were made before proceeding with the seven-week main study. The pilot study involved three pre-service English teachers from a private university. Digital storytelling was designed following Widodo's framework during the pilot, using tools like PowerPoint, CamScanner, CapCut, FlipaClip, Canva, and PhotoStory3 [16]. Data were collected through the researcher's field notes and participants' reflections. Pre-service teachers also shared their opinions on the activities, which informed revisions to the procedure plan and data collection tools. The finalized

seven-week implementation occurred during the teaching practicum course in the 2023–2024 academic year. Figure 1 outlines the digital storytelling implementation plan.
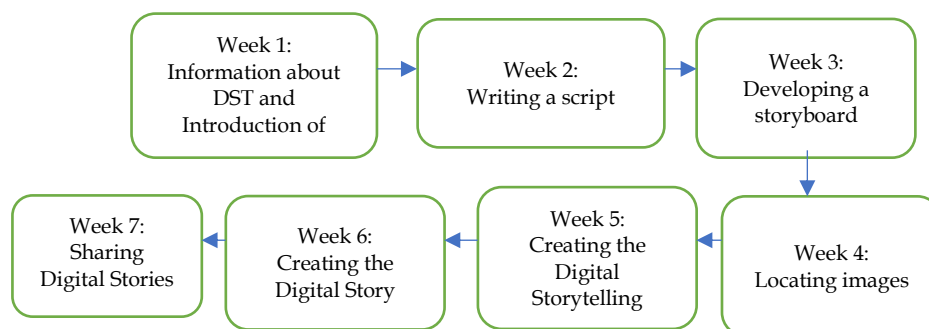

Figure 1. Weekly implementation plan.

The pre-service teachers created digital storytelling as teaching materials aligned with curriculum objectives. To prepare, they received training on digital storytelling from the researcher and were guided to design stories that reflected the themes and objectives they would teach in their future classrooms. A literacy education expert provided an overview of these themes and objectives, and feedback from field experts was sought throughout the process. During implementation, the digital storytelling design followed the steps outlined [17]. Weekly implementation plans were developed based on these steps to ensure systematic progress.

The authors developed a weekly implementation plan, incorporating expert feedback from the pilot study. Adjustments included limiting the word count in the stories, extending the time for digital storytelling, and assigning homework to encourage learning beyond the classroom. Pre-service teachers provided reflections biweekly while we maintained field notes during classroom practice. After the implementation phase, participants were interviewed using a semi-structured format. Various software tools, such as FlipaClip, Powtoon, CapCut, Canva, Kinemaster, and Photo Story 3, were explored for designing digital stories. FlipaClip, Canva, and CapCut were selected for this study due to their versatility in enabling users to modify locations, characters, music, and speech and adjust the story's pace—an important feature considering the age of the research group. The completed digital stories were saved in MP4 format for future use.

In a qualitative case study, commonly used data collection tools include interviews, field notes, document analysis, and observations [14], [18]. This study adopted semi-structured interviews, pre-service teachers' reflections (from document analysis), and the researcher's field notes from observations as qualitative data collection instruments. The semi-structured interviews included open-ended questions to allow participants to express their views freely. The responses were recorded as voice notes and later transcribed for analysis. Observations were conducted in the participants' teaching environments, with the researcher taking detailed field notes based on findings from interviews, observations, and document analysis—the importance of using such field notes in a case study to contextualize and triangulate data [14]. Document analysis

included self-reflections submitted by the participants and personal notes, letters, and diaries, which are valuable qualitative data sources [13]. These self-reflections provided additional insight into the participants' experiences and were integrated with other data to enrich the analysis. After all the data were collected, we managed all the data by the following steps: (1) selecting relevant data and (2) transcribing and translating the sorted data into English. In particular, it underwent these steps: (1) listening to talking data, (2) shaping talking data, (3) communicating data with an interpretative intent, (4) reproducing or (re)constructing the talking data, and (5) building data credibility [19].

RESULTS AND DISCUSSION
Result

This research yielded three key findings. First, the analysis highlighted preservice English teachers' technological literacy, particularly in software design and usage. Second, challenges and opportunities: digital storytelling as a foe or friend. Finally, creating digital stories as part of their professional development positively influenced preservice teachers' teaching practicum experiences, enhancing their understanding of the benefits of digital composition. This experience also prepared them to consider how digital storytelling could be used in their future classrooms to foster student engagement and support learning.

In this study, pre-service teachers' technological literacy can be classified into two main categories: software design and usage. Participants encountered specific challenges in software design, including dubbing, adjusting character movements, and creating a storyboard. Software usage also presented distinct difficulties. This theme encompasses pre-service teachers' reflections on various digital storytelling software applications, such as PowerPoint, Kinemaster, Canva, FlipClip, CapCut, PicsArt, and VN. These tools were selected for their capacity to allow users to design digital stories by modifying elements like location, character actions, and dialogue flow, which are beneficial given the study group's age range. The choice of software is critical to compelling digital storytelling, as overly simplistic tools may result in boredom. In contrast, overly complex software can cause frustration and lead to negative attitudes toward the technology.

The responses to the open-ended question, designed to gather individual opinions from the three pre-service teachers regarding the digital story creation process, were analyzed using content analysis. The resulting codes are presented as follows:

The most challenging stage is adjusting the motion and audio of the animated images, then choosing ideas so that it does not become a medium that will be boring for students (PST1; Interview: 22.10.2023).

This suggests that challenges with software functionality and features were the most frequently mentioned difficulties in the pre-service teachers' responses regarding digital story creation. A similar statement reflecting this theme is as follows:

The most challenging stage when creating digital storytelling is when I want to make the animation move or, for example, the image move. Sometimes, I have difficulty adjusting between

the audio speaking and the image; maybe that is difficult for the others, but it can be handled well (PST3; Interview: 06.02.2004).

Pre-service teachers were permitted to utilize any software that met their specific needs, with no restrictions on the types of software allowed. The most commonly used applications included PowerPoint, Kinemaster, Canva, FlipClip, CapCut, PicsArt, and VN. Additionally, another challenge encountered during the design process was dubbing. One of the participants noted this difficulty and elaborated on its complexity.

The most challenging stage is dubbing because it requires time and a quiet atmosphere (PST2: Interview: 15.12.2023).

It indicates that dubbing has difficulties because it requires more time and a quiet atmosphere to make the sound clear and distinct. Another pre-service teacher also described her difficulty in writing digital stories. She said:

I think the most challenging thing is writing the story or loading the story idea (PST2: Interview: 15.12.2023).

It indicates that participants experienced various challenges related to the design and use of DST software. Many expressed difficulties in operating the software, which caused frustration and disrupted their motivation to implement DST in teaching.

Based on these statements, it appears that pre-service teachers primarily faced challenges related to scriptwriting and technical issues. However, by the end of the process, they overcame these obstacles, as reflected in their digital story assessments. The difficulties in topic selection and scriptwriting stemmed from the need to create an impactful narrative, as their digital stories were intended to raise awareness or convey informative content. Consequently, pre-service English teachers focused on crafting effective scenarios to achieve this goal. Fewer responses to this open-ended question indicated difficulties with group work dynamics.

The challenges and opportunities of digital storytelling can be divided into four main categories: the contributions of digital storytelling, the difficult stages encountered, strategies for coping with these difficulties, and the weaknesses of digital stories. This framework encompasses positive and negative perspectives from participants based on their experiences with digital storytelling. Examining participants' experiences through implementation, interviews, and self-reflection will facilitate improvements in future applications. Each study may uncover unique insights that may not emerge in other research, contributing to a more comprehensive understanding of digital storytelling practices.

The contributions of digital storytelling can be categorized into four main areas: providing entertainment, enhancing language skills, improving technological proficiency, and introducing a new method for teaching subject content. The most frequently cited category is entertainment, indicating that pre-service teachers enjoyed the digital storytelling process and considered it the most significant benefit. An illustrative example from participant responses is as follows:

… when using this digital story media, students are more interested because the images are more playful and colourful. Also, children can listen to the audio of the conversation on the animation, such as when a teacher's voice and then a friend's voice fills the media and will attract students' attention (PST1; Interview: 22.11.2003).

Similarly, with other participants, she described:

The contribution of digital storytelling is a very big contribution for me as a preservice teacher because I do not need to read again, so the students have to listen to the audio from storytelling that I have made students who often on other hand they listen to and read the text in the video and enjoy the animations that move on the video so they do not get bored (PST3; Interview: 06.02.2024).

The problematic stages encountered can be grouped into three categories, with the most common challenge being the use of software. This indicates that pre-service English teachers frequently struggled with software functionality. Two illustrative examples from participants' responses are as follows:

The limitations in using the application that I mentioned earlier include in the background eraser that makes the respiration on the background, there is still a watermark, so I have to use a small image, then later it will be saved and can be cropped to remove the watermark (PST1; Interview: 22.11.2023).

Canva is good at designing animations for video backgrounds but cannot edit videos professionally, while Filmora is very good at editing videos professionally, but I cannot create good backgrounds and animations, so I combined the two applications (PST2; Interview: 15.12.2023).

Another category under the weaknesses of digital storytelling is the reliance on external resources, particularly YouTube and Google searches. This trend indicates that pre-service English teachers frequently addressed challenges by consulting YouTube tutorials and performing Google searches when they encountered difficulties. An example response from participants is as follows:

To overcome the difficulties that I have found so far, of course, I search on Google so that I can find the solution well (PST3; Interview: 06.02.2024).

cooperate with other people such as lecturers or friends when doing video text (PST1: Interview: 22.11.2023).

I overcame the difficulties by searching YouTube or other sources on Google (PST2; Interview: 15.12.2023).

Another weakness of digital storytelling identified by participants is the time-consuming nature of the design process. This response suggests that pre-service English teachers view the time required to create digital stories as a significant drawback. An illustrative example from participant feedback is as follows:

…. There are still many difficulties experienced when making digital storytelling at the process stage, such as animating animations and then stringing them together, which must take a long time to string several images (PST1; Interview: 22.11.2023).

There are no shortcomings because this digital media almost helps students understand more about the stories they listen to and read. Maybe the drawback is that it takes longer to make (PST3; Interview: 06.02.2024).

Digital storytelling was seen as a potential tool to support teaching. Some participants felt DST enriched their learning experience, while others struggled to create engaging and compelling narratives.

Discussion

This study makes a significant contribution to the literature on digital storytelling. Findings suggest that digital storytelling can enhance communication and collaboration among preservice English teachers and create a more engaging learning environment. However, challenges related to scenarios, voice-overs, software, and technical delays were noted as areas requiring further attention. The findings suggested that digital storytelling could benefit literacy education in Indonesia, given its emphasis on verbal language and the importance of speaking, writing, and visual images. Participants expressed enthusiasm for using digital storytelling in their teaching practicum, emphasizing the importance of screenplay, voiceover, and appropriateness for the target audience. Researchers recommended age-appropriate software due to its complexity [20].

The literature review reveals several studies that align with the findings of this study. Pre-service English teachers faced voice-filling and story-creation challenges during digital storytelling [6]. However, digital storytelling positively impacted motivation, permanent learning, technology use, and writing skills. Del-Moral et al. observed difficulties in creating scenarios and pronouncing words in digital story design, but it improved written and verbal communication, narration skills, and digital competence [21]. It concluded that digital storytelling enhances information and communication technology literacy in Initial Teacher Education and improves technological abilities [22]. Walters et al. reported that shared digital storytelling by pre-service English teachers enhanced student content comprehension, engagement, digital literacy, and motivation [11].

The findings indicate that pre-service English teachers found digital storytelling entertaining and wanted to use it in the future. However, they faced challenges finding the right person or a quiet voiceover environment and encountered software editing difficulties. Designing digital stories was perceived as time-consuming, possibly due to their lack of familiarity with the software and the language used. Technical obstacles might have also played a role. Most participants experienced difficulties using the software, which was attributed to the newness of the experience and the software's complexity. Previous studies support these findings, highlighting the need for technical support and acknowledging the challenges for first-time software users in education [23]. Digital storytelling improved learning and communication but emphasized the necessity of technical support during the process [24]. Technical support and meeting software and hardware needs are essential to enhance the teaching process.

The key findings of this study highlight the importance of fostering a sense of agency, self-confidence, autonomy, and understanding of praxis—topics that teacher

educators should prioritize within a teaching practicum program. Our findings suggest that the teaching practicum offers pre-service teachers valuable opportunities to exercise agency as active participants in curriculum and classroom policy, develop teacher autonomy, experiment with diverse teaching strategies, and apply their pedagogical content knowledge in practice. Furthermore, the practicum supports pre-service English teachers' emotional and professional growth. It is essential that pre-service teachers not only acquire pedagogical competence but also develop additional skills, including subject-specific knowledge and technological proficiency, such as the ability to create digital storytelling [17].

This study examined the experiences of three pre-service English teachers during their teaching practicum, explicitly focusing on their use of digital storytelling. It investigated their understanding of digital storytelling as an instructional tool and its impact on their perspectives regarding technology integration in the classroom. The findings indicate that the pre-service teachers derived substantial benefits from the project, including improved technological skills, a deeper awareness of intentional design choices to support their intended meanings, and an appreciation for the instructional value of incorporating digital storytelling into the practicum. These results are consistent with previous research, highlighting the educational benefits of digital storytelling in teacher training programs [7].

This study contributes to the growing body of research on the role of digital storytelling in pre-service English teacher education [5], [25], underscoring the importance of equipping pre-service teachers with the skills to integrate technology into their teaching practices effectively [7], [26]. Digital storytelling projects provide immersive and authentic experiences that not only enhance pre-service teachers' instructional capabilities but also benefit their future students [27], [28]. Additionally, this study highlights how digital storytelling functions as a tool for emotional expression and the reflection of sociocultural identity in teacher education settings, aligning with previous findings by Cappello [29]. Given the relationship between digital storytelling and teacher identity development, as well as the need to foster positive attitudes toward technology integration in primary education, this research offers valuable insights and guidelines for future studies aimed at integrating technology into teacher education programs [5], [7], [26], [30].

CONCLUSION

Fundamental Finding : Integrating multimodal teaching practices, particularly digital storytelling (DST), into teacher education programs enhances pre-service English teachers' professional development by improving their knowledge, skills, and perceptions. This approach empowers these teachers to effectively engage with technology and foster digital literacy in their future classrooms. **Implication :** The incorporation of DST in teacher education has practical implications, as purposeful course designs and assignments can equip pre-service teachers with the skills to create

and analyze digital stories. This integration could influence curriculum development and professional training programs to better prepare teachers for technology-driven teaching environments. **Limitation :** This study is limited by its narrow focus on pre-service English teachers, which may restrict the generalizability of the findings to broader educational contexts. Additionally, challenges in providing sufficient technical support and resources during training may impact the effectiveness of DST integration in teacher education programs. **Future Research :** Future research should explore the wider applications of DST, particularly its impact on student learning outcomes across different subjects and educational levels. Such studies could contribute to developing innovative and effective teacher education curricula, especially in Indonesia, while encouraging creative teaching practices that align with 21st-century learning demands.

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