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Needs Analysis for Using Digital Storytelling to Improve Elementary School Students' Story-Writing Skills

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Abstract: Digital storytelling can strengthen story-writing instruction by integrating text, images, sound, narrative structure, and digital production. However, its use in elementary schools requires a needs analysis so that developed materials address pedagogical problems rather than function only as visual media. This study analyzed teachers' and students' needs for digital storytelling to improve elementary students' story-writing skills. A descriptive qualitative needs-analysis design involved 10 teachers and 60 elementary students in Pandeglang Regency selected purposively. Data were collected through classroom observations, semi-structured interviews, student responses, and document review, using instruments validated through content validity. Data analysis included condensation, display, conclusion drawing, and verification through source and technique triangulation. Five needs emerged: multimodal writing media, staged writing activities, digital materials connected to students' experiences, practical teacher guidance, and clear story-writing assessment rubrics. The novelty lies in positioning digital storytelling as a needs-based writing-learning ecosystem that integrates story stimuli, narrative scaffolding, simple digital production, reflection, and feedback. These findings provide a foundation for developing digital storytelling materials for elementary story-writing instruction.

Keywords: Digital Storytelling, Story-Writing Skills, Elementary School, Needs Analysis, Language Learning.

INTRODUCTION

Language learning in elementary schools faces new demands as digital learning, distance learning, and blended learning have become part of everyday educational experience. These changes have not only altered the media used to deliver content but have also required teachers to design learning that gives students opportunities to read, observe, speak, write, and construct meaning through multiple modes. In story-writing instruction, this need is increasingly important because students should not only receive model texts. They also need to experience the gradual process of generating ideas, organizing plots, selecting vocabulary, constructing characters, and revising their writing (Korosidou & Griva, 2024; Mukarromah et al., 2025).

Story-writing skill is a complex productive ability. Students must connect experience, imagination, language knowledge, story structure, and the ability to organize ideas into written text. In conventional instruction, writing activities are often reduced to copying, completing sentences, or writing from dictation. These practices may train mechanical accuracy, but they

are insufficient for developing ideas and building a coherent narrative structure. Recent findings indicate that effective writing instruction requires multimodal stimuli, pre-writing activities, story-structure modeling, collaboration, and feedback that supports gradual text improvement (Nuroh & Adiyawati, 2023; Uslu & Uslu, 2021).

Digital storytelling is a relevant alternative because it combines storytelling with simple digital tools such as images, short texts, voice recordings, video, light animation, and publication of students' work. In writing instruction, digital storytelling does not merely attract attention. It can also guide students from understanding a story to producing one. Selecting images, arranging scene sequences, writing scripts, recording narration, and presenting work can help students understand the relationships among ideas, text structure, language choices, and audience (Rahiem, 2021; Setyawati, 2024).

Recent studies show that digital storytelling can contribute positively to narrative writing, creativity, vocabulary mastery, learning engagement, and critical thinking. Studies with elementary students have found that digital storytelling projects can improve narrative-writing performance because students gain more meaningful and structured writing experiences (Korosidou & Griva, 2024; Mukarromah et al., 2025). Findings from lower-grade contexts also indicate an influence on story-writing skills, while collaborative digital storytelling has been shown to strengthen creativity and communication (Nuroh & Adiyawati, 2023; Uslu & Uslu, 2021).

Nevertheless, previous studies leave an important gap. Much of the literature focuses on the effectiveness of digital storytelling after a product or intervention has been implemented, while preliminary studies of teachers' and students' needs before product development remain limited. Without a needs analysis, digital materials may become collections of videos or images without a clear pedagogical scenario. Another gap concerns the need to connect digital storytelling with local contexts, teacher readiness, device limitations, and story-writing assessment rubrics that fit elementary students' characteristics (Munajah et al., 2023; Ong et al., 2025).

Preliminary observations of offline and online learning in elementary schools showed that the media and teaching materials had changed very little. Teachers still relied on textbooks, student worksheets, online videos, images shared through messaging groups, and copying or dictation tasks. These conditions gave students limited space to construct ideas actively. They indicate an urgent need for digital storytelling materials that are not only visually engaging but also provide a clear writing-learning sequence, are practical for teachers, and fit elementary students' learning experiences (Kurniasari et al., 2025; Puspitasari et al., 2025).

Based on this background, the study analyzed the needs for using digital storytelling in elementary story-writing instruction. The focus covered patterns of media and teaching-material use, students' barriers in writing stories, teachers' needs for digital materials, and initial specifications for digital storytelling that are relevant to story-writing instruction. The study aimed to analyze teacher and student needs as a foundation for developing digital storytelling materials to improve elementary students' story-writing skills.

METHODS

Research Design

This study used a descriptive qualitative approach with a needs-analysis design. The design was selected because the study focused on mapping instructional conditions, user needs, pedagogical constraints, and initial specifications for digital storytelling materials before further product development. Needs analysis was positioned as the initial stage of instructional development so that the media design would respond not only to technological demands but also to the story-writing problems experienced by teachers and students. The qualitative approach enabled an in-depth interpretation of participants' experiences, practices, and needs

through observation, interviews, student responses, and documentation (Creswell & Creswell, 2023; Miles et al., 2020).

The research design followed five stages: identifying the learning context, collecting needs data, condensing the data, formulating need themes, and developing initial digital storytelling specifications. These stages ensured that the findings did not merely describe problems but also generated a conceptual basis for the development of teaching materials in subsequent research.

Table 1. Needs-Analysis Design Flow

Stage	Main Activity	Output
Context identification	Examine story-writing instruction in offline and online settings	Initial map of instructional practices
Data collection	Classroom observation, teacher interviews, student responses, and document review	Data on teacher and student needs
Data condensation	Select, simplify, and code relevant data	Initial codes and categories
Data display	Organize themes in a needs matrix	Main need themes
Verification	Triangulate sources and techniques and draw conclusions	Initial digital storytelling specifications

Participants

The participants consisted of 10 elementary school teachers and 60 elementary school students in Pandeglang Regency. They were selected purposively. Teacher criteria included experience teaching story writing in offline and online settings, use of Indonesian-language teaching materials in lower grades or transition grades, and willingness to provide information about instructional practices. The students had participated in story-writing lessons and were able to provide simple responses about their writing-learning experiences. Purposive selection was used to ensure that the data were relevant to the focus on digital storytelling needs in story-writing instruction (Creswell & Guetterman, 2021; Miles et al., 2020).

Data Collection and Instruments

Data were collected through classroom observation, semi-structured teacher interviews, student responses, and review of instructional documentation. Observation was used to examine patterns of media use, writing activities, teacher-student interaction, and student engagement. Interviews explored teachers' constraints, experiences with digital media, material needs, and expectations for digital storytelling. Student responses captured writing-learning experiences, perceived difficulties, and preferred media forms. Documentation review covered student worksheets, textbooks, writing assignments, images, videos, and other teaching materials used by teachers.

Table 2. Research Instrument Blueprint

Instrument	Aspect Observed/Explored	Indicators
Observation sheet	Story-writing instructional practices	Types of media, pre-writing activities, writing activities, student responses, and forms of feedback
Teacher interview guide	Teachers' needs for digital storytelling	Media constraints, digital readiness, need for guidance, assessment needs, and expectations for material development
Student response guide	Students' experiences in story writing	Interest in writing, difficulty generating ideas, difficulty sequencing events, and interest in images/audio/video
Document review sheet	Alignment of materials and writing tasks	Alignment with objectives, availability of story examples, staged exercises, and clarity of assessment

Instrument validity was maintained through content validity. The indicators were developed from the research objectives, characteristics of story-writing instruction, and digital storytelling development needs, and were reviewed for construct alignment, language clarity, and measurability. Data trustworthiness was strengthened through source triangulation, technique triangulation, rechecking findings with key informants, and systematic documentation of the analytical process. These strategies reduced dependence on a single source or data-collection technique (Creswell & Creswell, 2023; Saldana, 2021).

Data Analysis

Data analysis used an interactive model comprising data condensation, data display, and conclusion drawing or verification. Data condensation involved selecting information relevant to the research focus, coding findings, and grouping codes into need categories. Data were displayed through narrative descriptions and a needs matrix to show the links among instructional problems, field evidence, and digital storytelling specifications. Conclusions were drawn gradually by comparing observation, interview, student-response, and documentation data. Verification continued until consistent need themes were obtained and could be used as a basis for developing digital storytelling materials (Miles et al., 2020; Saldana, 2021).

RESULTS AND DISCUSSION

The findings are presented as need themes rather than as a list of raw data so that they directly address the research objective of analyzing the requirements for digital storytelling in elementary story-writing instruction.

Media and Learning Material Use

The first finding showed that story-writing instruction still depended on printed materials, while digital media played a supplementary role. In offline learning, teachers used textbooks, student worksheets, whiteboards, and storybooks as the main resources. In online learning, teachers shared images, links to online videos, or instructions through messaging groups. The shift in learning mode was not followed by a corresponding redesign of writing activities. Digital media functioned mainly as a tool for distributing material rather than as a space where students could plan, develop, and present stories.

This pattern indicates that the primary need is not merely access to digital devices. Teachers need teaching materials that transform writing into a staged process. The required media should help students examine story examples, sequence scenes, write short scripts, improve texts, and publish stories in simple formats.

These findings confirm that the central problem in elementary story-writing instruction is not simply limited technology but a weak pedagogical design connecting media with the writing process. When teachers only distribute videos, images, or digital links without pre-writing activities and story-structure scaffolding, students remain recipients of content. Digital storytelling should instead guide students in transforming experiences, images, and sounds into narrative texts. Recent studies similarly show stronger effects when students participate in story planning, script development, vocabulary building, and reflection on their work (Korosidou & Griva, 2024; Mukarromah et al., 2025).

Students' Barriers and the Need for Multimodal Scaffolding

The second finding showed that students faced difficulties in generating ideas, sequencing events, selecting vocabulary, and developing sentences. Writing activities dominated by copying and dictation gave students too little opportunity to construct their own ideas. Students tended to wait for teacher examples, follow existing sentence patterns, or write very short stories because they lacked visual stimuli and a clear workflow.

These barriers show the need for materials that provide multimodal stimuli. Sequential images, sound, light animation, and short narrative examples can bridge students' concrete experiences and the stories they are expected to write. Digital storytelling should therefore include pre-writing, outlining, draft writing, simple editing, and publication activities.

The need for multimodal stimuli is consistent with the characteristics of elementary students, who still benefit from concrete support when developing ideas. Images, audio, and scene sequences can help students understand relationships among characters, settings, events, problems, and resolutions. This finding aligns with studies showing that digital storytelling can strengthen narrative writing by providing idea stimulation, opportunities to organize plots, and more meaningful writing experiences (Nuroh & Adiyawati, 2023; Ngoi et al., 2024).

Local context is also important. Digital storytelling based on students' own experiences can strengthen emotional engagement and make story ideas easier to generate. Stories about family, school, games, the environment, local habits, and daily experiences offer more realistic starting points than contexts far removed from students' lives. Studies of local-wisdom-based digital storytelling also indicate that teachers view this approach as relevant because students can write from experiences they understand (Madinah & Nuroh, 2025; Munajah et al., 2023).

Teachers' Needs and Operational Guidance

Teachers need digital storytelling that is easy to use, does not require complex equipment, and can be implemented in both offline and online learning. Their needs include story examples, step-by-step instructional guidance, age-appropriate visual media, worksheets that scaffold the writing process, assessment rubrics, and alternative modes of use when internet connections are limited. Teachers also need brief training on managing digital storytelling activities so that writing lessons do not become passive video-viewing sessions.

The need for operational guidance is critical because the success of digital storytelling depends on teachers' ability to transform media into learning activities. Without a clear instructional scenario, digital storytelling may be used only for passive viewing. A more appropriate model guides students through story exploration, script writing, simple media production, presentation, and feedback. Research in elementary and language-learning contexts likewise shows that digital storytelling can strengthen engagement when it is implemented through structured and product-oriented tasks (Fan & Chen, 2023; Rahiem, 2021).

Product Needs and Assessment

Table 3. Matrix of Findings and Digital Storytelling Needs

Finding Theme	Core Problem	Learning Need	Initial Product Specification
Learning media	Digital media still mainly distribute material	Active and directed multimodal media	Digital stories containing images, text, audio, and scene sequences
Writing activities	Writing is still dominated by copying and dictation	Systematic writing stages	Pre-writing worksheets, story outlines, drafts, revision, and publication
Student engagement	Students are passive and become bored quickly	Exploratory and contextual activities	Selection of characters, settings, simple conflicts, and narration recording
Teacher readiness	Teachers have limited capacity to develop digital materials	Operational guidance and examples	Teacher guidebook, learning scenarios, and offline alternatives
Assessment	Writing assessment does not yet use detailed rubrics	Clear and practical rubrics	Rubrics for story content, structure, vocabulary, sentences, spelling, and creativity

The matrix identifies five characteristics required in digital storytelling for story-writing instruction. First, the media should be multimodal but remain simple. Second, the activities should guide students from ideas to written texts. Third, stories should connect with students' experiences and culture. Fourth, teachers need practical and flexible guidance. Fifth, assessment should balance the writing process and the final product.

The need for an assessment rubric also shows that story writing should not be judged only by text length or handwriting neatness. Teachers need to assess content relevance, completeness of story structure, vocabulary accuracy, sentence cohesion, spelling, creativity, and students' ability to connect written text with digital elements. A clear rubric supports more specific feedback and helps students identify aspects of their writing that require improvement. This finding is consistent with research emphasizing performance and process assessment in digital storytelling because digital stories combine language, visuals, sound, and narrative organization (Bilici & Yilmaz, 2024; Ong et al., 2025).

Theoretical Contribution, Practical Implications, and Novelty

Theoretically, the findings extend the view that digital storytelling in story-writing instruction should not be positioned only as digital media. It should be treated as a multimodal learning ecosystem that integrates stimuli, structure, production, collaboration, reflection, and assessment. The broader implication is that elementary story-writing instruction becomes stronger when digital media are designed to clarify the thinking process behind writing rather than merely to make content delivery more attractive. This interpretation supports systematic evidence that digital storytelling strengthens writing when teachers integrate collaborative, reflective, and text-production-oriented activities (Alyuvany & Pratiwi, 2025; Setyawati, 2024).

Practically, the findings support the development of digital storytelling materials equipped with a teacher guide, staged student worksheets, digital story examples, assessment rubrics, and alternatives for use with simple devices. Teachers can begin with accessible formats such as digital sequential images, voice recordings, or story slides before moving to more complex applications. Schools also need to support teacher training, device management, and digital-learning policies that emphasize the quality of learning activities rather than technology use alone (Kurniasari et al., 2025; Maarouf, 2025).

The novelty of this study lies in deriving an initial digital storytelling design from an integrated needs analysis of teachers, students, instructional practices, and documentation before product development. The findings specify digital storytelling as a writing-learning ecosystem with five connected requirements: simple multimodal media, staged writing scaffolds, contextual stories, operational teacher guidance, and balanced assessment. This needs-based configuration offers a concrete conceptual foundation for subsequent material development and testing in elementary story-writing instruction.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This study concludes that elementary school teachers and students need digital storytelling as multimodal teaching material that strengthens the process of writing stories. The required design includes engaging and easy-to-use media, staged writing activities, stories connected to students' experiences, operational guidance for teachers, and clear assessment rubrics. These findings answer the research objective by showing that digital storytelling should be developed from pedagogical needs rather than from the availability of digital devices alone.

Relevant digital storytelling for elementary story-writing instruction should operate as a learning ecosystem. It should combine visual and audio stimuli, narrative-structure scaffolding, worksheets from pre-writing through revision, simple digital production, presentation, reflection, and feedback. Such a design has the potential to help students generate ideas,

organize plots, develop vocabulary, improve their writing, and experience a more meaningful writing process. The findings provide a basis for developing and testing needs-based digital storytelling materials in subsequent research.

Limitations

This study has three main limitations. First, it was conducted as a needs analysis and therefore did not measure the effectiveness of digital storytelling in improving story-writing scores. Second, the participants were limited to teachers and students in the study area, so statistical generalization is not possible. Third, student data were obtained through simple responses and observation and therefore do not describe individual development longitudinally. The findings should be interpreted within these boundaries.

Recommendations

Future research should develop digital storytelling materials from these findings, validate the product through expert review, assess its practicality with teachers and students, and test its effectiveness through experimental or more comprehensive research-and-development designs. Subsequent studies should also examine content feasibility, design, language, usability, and effects on elementary students' story-writing skills across broader settings.

Author Contributions

As the sole author, Robiatul Munajah was responsible for the study conceptualization, data collection, data analysis, interpretation of the findings, manuscript preparation, scholarly revision, and approval of the final manuscript.

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