

Needs analysis for educational comic media as a learning tool in elementary schools

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ABSTRACT

Advancements in technology have driven innovation in learning media; however, its utilization at the elementary school level remains limited. Some institutions lack media that align with the characteristics and needs of fifth-grade students. The absence of media integrating visual and narrative elements hinders the enhancement of student motivation and comprehension. This study aims to analyze the needs for educational comic media as a learning tool in elementary schools to improve students' interest, engagement, and learning effectiveness. The research employs a descriptive qualitative approach to examine the needs for educational comic media in primary education through observations, interviews, and document analysis. Data analysis follows Miles and Huberman's interactive model, involving data reduction, presentation, and verification, with validity reinforced through triangulation. The study indicates that digital comics play a strategic role in enhancing students' learning interest, engagement, and holistic character education. By integrating text, visuals, and context-based storytelling, this medium makes literacy active and enjoyable. Despite challenges like limited technology access and teacher readiness, solutions such as professional training, teacher-parent collaboration, and digital design tools enable educators to create creative, student-friendly media, fostering an inclusive, interactive, and effective learning environment while promoting literacy culture and character development. The study contributes by demonstrating that digital comics not only improve interest and engagement but also support holistic character education. The findings emphasize the importance of integrating text, visuals, and contextual storytelling in learning media and offer practical guidance for teachers to design creative, inclusive, and interactive instructional materials.



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INTRODUCTION

One of the main challenges in elementary school learning is students' low motivation, especially in subjects perceived as difficult or less engaging. Lavrijsen et al. (2021) and Xia et al. (2022) argue that low motivation affects students' engagement in classroom activities, which in turn impacts academic achievement, as emphasized by Bergmark and Westman (2018). Katona et al. (2023) highlight the importance of using appropriate learning media to create a more enjoyable and motivating learning environment. Since elementary education serves as the foundation for higher educational levels, improving learning quality at this stage is crucial (Asmawadi, 2021). Rina et al. (2020) consider educational comics suitable for the characteristics of elementary school students. Dwijayani (2019) explains that comics combine visuals, narratives, and text in an engaging format, enhancing comprehension and stimulating imagination. Narestuti et al. (2021) and Hakim et al. (2024) find that comics effectively help fourth-grade students understand abstract concepts according to their cognitive development. Therefore, educational comics are a strategic alternative to enhance students' motivation, engagement, and understanding.

Previous studies have emphasized the importance of developing comic-based media to enhance the academic skills of elementary school students. Ananda et al. (2023) argue that integrating children's story comics with Student Worksheets (LKPD) through the ADDIE model can significantly improve students' narrative writing skills. Miranda & Dafit (2024) highlight that using the 4D model to develop digital comics has the potential to enhance reading comprehension among fourth-grade students. Additionally, Oktaviana & Ramadhani (2023) point out that digital comics can increase learning motivation and the effectiveness of science education, particularly through visual and narrative approaches that engage students. However, Hayat et al. (2024) and Fitri et al. (2025) emphasize that most previous research has focused on media development for academic skill enhancement without thoroughly analyzing students' actual needs for digital comics as learning media. This indicates a gap between media development and understanding the contextual learning needs in elementary schools.

Based on the preliminary review, there is a gap between the development of comic media and understanding the actual needs of elementary school students. Previous studies have focused more on enhancing academic skills, such as narrative writing and reading comprehension, without exploring the suitability of media for students' learning characteristics and needs. This indicates the necessity of analyzing students' perspectives, particularly regarding learning motivation and understanding of the material. Referring to the research objectives, this study examines the need for using comic media as a learning aid in private elementary schools. The primary focus is to explore the role of comics in increasing students' learning motivation and comprehension. Comics are considered highly potential because they combine visual elements, narratives, and engaging texts suitable for elementary school students, making them a strategic alternative to support an effective and enjoyable learning process.

This study examines the need for using comic media as a learning aid in private elementary schools. The primary focus is directed at identifying the role of comic media in increasing learning motivation and students' understanding of the subject matter, especially. Comics as a learning medium is considered to have great potential because it combines visual elements, stories, and interesting texts for elementary school-age students. This study is expected to provide a real contribution to the development of learning media that is more relevant to the conditions and needs of today's students, namely, media that is contextual, interactive, and in line with the development of digital technology. The benefits of this study include providing empirical data for teachers and media developers in designing educational comics based on student characteristics and being a reference for schools in integrating interesting digital media. The study's results also have the potential to support a curriculum that is adaptive to the challenges and needs of 21st-century learning.

Based on the research objectives, it can be hypothesized that there is a significant need for the use of comic media as a learning tool in private elementary schools, particularly in enhancing students' motivation and learning comprehension. Comics are considered an effective alternative because they combine visual elements, stories, and texts that align with the cognitive and

psychological development characteristics of 10-11-year-old students. Furthermore, this hypothesis assumes that using contextual and interactive digital comic media can provide a more enjoyable learning experience and increase students' active participation in the learning process. Thus, comics not only have the potential to improve cognitive learning outcomes but also promote innovation in the development of learning media and strengthen curricula that are adaptive to the challenges of digital-based learning.

RESEARCH METHOD

This study employs a qualitative approach with a descriptive design, which Hall and Liebenberg (2024) argue is suitable for deeply understanding complex contextual phenomena. This approach allows for the exploration of social issues in elementary schools, particularly concerning the need for educational comic media. Busetto et al. (2020) emphasize the effectiveness of qualitative methods in capturing social dynamics that are difficult to quantify, while Doyle et al. (2020) highlight that qualitative research focuses on natural contexts, using triangulation and the researcher as the main instrument. Davies et al. (2013) note that descriptive designs provide a factual and systematic depiction of classroom conditions. In line with these perspectives, this study is directed at analyzing three key aspects: the availability and completeness of educational comic reading materials, the integration of comic media in the learning process, and its strengths and weaknesses. This analysis aims to provide a comprehensive understanding of students' needs and support the development of effective learning media tailored to their characteristics.

The object of this study is children's comic media used as an alternative learning aid, while the subjects are elementary school students. The selection of subjects is based on the cognitive developmental characteristics of children at the concrete operational stage. Hayat et al. (2024) emphasize that at this stage, visual media such as comics are highly effective in helping students understand abstract concepts through contextual and engaging presentations. The study was conducted at SDIT Utsmanil Hakim, which represents an elementary school environment dominated by conventional teaching methods, such as lectures and textbook use. This situation highlights the urgent need for innovative learning media that are more engaging and aligned with students' current learning styles. Therefore, the research focuses on exploring students' learning experiences, teachers' perceptions, and classroom conditions. The ultimate goal is to design digital learning media that are effective, contextual, and capable of keeping pace with contemporary developments while optimally meeting students' learning needs.

Data collection in this study employed observation, interviews, and document analysis. Classroom observations were conducted to assess student engagement and evaluate the availability and completeness of educational comic media. Granström et al. (2024) emphasize that direct observation helps researchers understand the learning context and document students' behaviors and enthusiasm. Semi-structured interviews with teachers aimed to explore the integration of educational comic media into the learning process, challenges encountered, and teachers' perceptions of its effectiveness. McIntosh and Morse (2015) note that this interview format allows flexibility to investigate relevant issues. Document analysis included lesson plans, learning materials, and literacy records to examine the strengths and weaknesses of educational comic media (Amiraslani & Dragovich, 2022). Data validity was strengthened through triangulation across the three techniques, providing a more accurate and comprehensive understanding of the role of comic media in enhancing motivation, engagement, and comprehension among elementary school students.

This study employs Miles and Huberman's interactive data analysis model, which consists of three stages: data reduction, data display, and conclusion drawing or verification. According to Hashimov (2014) and Hastasari et al. (2022), this model allows researchers to manage data systematically. The first stage, data reduction, involves selecting and simplifying data from observations, interviews, and documents to align with the research focus, including the availability and completeness of educational comic reading materials, the integration of comic media in the learning process, and the analysis of the advantages and disadvantages of educational comic media

(Natow, 2019). Next, the reduced data are organized into descriptive narratives to clarify meaning and context (Guido et al., 2024). Systematic data display facilitates identifying relationships (Bingham, 2023). The final stage, conclusion drawing, is conducted through iterative verification to ensure consistency (Zamiri & Esmaeili, 2024). Source and technique triangulation, along with member checking, are used to validate findings, enhancing research credibility (Carter et al., 2014; Campbell et al., 2023) and supporting the identification of students' needs for educational comic media.

RESULTS AND DISCUSSION

Results

Availability and completeness of facilities for reading educational comic media

The results of interviews with teachers, the vice principal of curriculum, and the school principal indicate that the reading facilities for educational comic media at the school are adequate. The library and reading corners provide a complete collection of children's comics, fostering students' enthusiasm for reading. Teachers actively motivate students, form reading groups, and assign comic-based literacy tasks. However, challenges remain, such as inconsistent reading habits and the influence of technology. These findings confirm the availability of comprehensive comic reading facilities, but their effective use depends on teachers' strategies.

Table 1

Findings Related to Students' Reading Interests in Elementary Schools

No	Aspect	Main Findings
1	School Literacy Facilities	Libraries and reading corners are available and quite complete
2	Students' Reading Interest	The majority of students ($\pm 70\%$) have a fairly good interest in reading, but it is not evenly distributed
3	Teacher's Strategy in Coaching	Teachers provide motivation, read stories, and give light assignments, but they are not structured consistently
4	Classroom Literacy Activities	Activities such as reading groups, telling stories about books, and summarizing assignments have been carried out, but they are not routine and the results vary
5	Challenges in Reading Interest	The main challenge is the habit of reading that has not been formed, and the assumption that reading is a task
6	Teacher's Expectations	Teachers hope that students will enjoy reading through a creative and fun approach, as well as a collection of books that suit students' interests

Note: This data was obtained from the results of interviews with teachers, curriculum vice principals, and school principals

Field findings reveal that although literacy-supporting facilities such as libraries and reading corners are available and utilized, students' reading interest still faces various challenges. Reading habits are uneven, and some students still perceive reading as a burden. This indicates that the mere availability of facilities is insufficient without creative and consistent pedagogical strategies. Teachers play a crucial role in creating an enjoyable literacy environment through motivation, light assignments, and interactive activities such as storytelling and shared reading. Therefore, developing innovative learning media, such as engaging and relevant educational comics, is essential to bridge students' learning needs and strengthen a sustainable and effective literacy culture in elementary schools.

Media integration in the Indonesian language learning process

Based on interviews with classroom teachers and the school principal, in Indonesian language learning, teachers have implemented the Independent Curriculum using various active learning methods, such as discussions, cooperative learning, and project-based activities. Innovation is also evident through the integration of digital media and technology, including educational comics, which facilitate students' understanding of the material. However, teachers face challenges such as low reading motivation and limited instructional time. To address these issues, teachers employ creative learning media, including mind mapping, flashcards, and interactive applications. Non-cognitive

assessments indicate a predominance of visual learning styles among students, underscoring the importance of visual and contextual approaches in language learning.

Table 2
Integration of Indonesian Language Learning Media

No	Findings	Description
1	Curriculum and Learning Methods Used	Teachers use the Independent Curriculum with discussion methods, cooperative learning (Think-Pair-Share, Jigsaw), project-based, and active learning to increase student engagement.
2	Implementation of Indonesian Language Learning	Learning is carried out with the support of digital media such as videos, applications, and e-books. Students are also trained to write using computers to improve basic writing and technology skills.
3	Student Results and Enthusiasm	Student learning outcomes are quite good, most are able to read, write, and discuss. Student enthusiasm is high when using media or group activities, but there is still variation in student interests.
4	Learning Constraints	The main obstacles come from the lack of student interest and time constraints. Students sometimes feel bored when faced with long readings in Indonesian language learning materials.
5	Learning Styles and Non-Cognitive Assessment	The majority of students have a visual learning style, followed by auditory and kinesthetic. Non-cognitive assessments show that students develop well in responsibility, cooperation, and social attitudes.
6	Use of Learning Media on Difficult Materials	Difficult materials such as writing fictional texts and determining main ideas are taught with the help of media such as mind mapping, short videos, flashcards, and interactive applications such as Kahoot! and Quizizz.

Note: This data was taken from the results of interviews with class teachers and the principal

Based on Table 2, Indonesian language learning in Grade IV has undergone a positive transformation through the implementation of innovative methods and the use of digital media. With the Independent Curriculum and an active learning approach, student engagement has increased. However, challenges such as low reading motivation, limited instructional time, and difficulty in understanding complex material remain. Teachers' readiness to adapt creative media serves as a key solution. The predominance of visual learning styles among students necessitates a consistently visual and interactive approach. Therefore, systematic and sustainable strategies are required, including the provision of contextual materials and the strengthening of literacy through enjoyable and adaptive methods. These findings underscore the importance of continuous innovation to effectively address students' learning needs.

Problems of using educational comic media in elementary schools

Based on interviews with elementary school teachers, the information describes various challenges they encounter when using educational comic media in Indonesian language learning. The interviews reveal that although comics can capture students' learning interest, there are several issues that need attention to make their use more effective.

Table 3
Problems Using Educational Comic Media

No	Problems / Obstacles	Explanation
1	Students' focus is diverted	Students tend to pay more attention to the images than to the learning material they are supposed to understand.
2	Limited information	Comics present material concisely, making it difficult to explain complex concepts.
3	Difficulty in access	Not all schools have educational comics that are curriculum-aligned and high-quality.
4	Differences in reading ability	Students with low reading skills may have difficulty understanding the stories and messages in comics
5	Teacher preparation time	Teachers need to select or prepare appropriate comics, which requires additional time and effort.

Note: The data was obtained by researchers from the results of interviews with class teachers

The limitations of educational comic media can significantly affect students' comprehension of learning material. Because the information is often presented briefly, it may be insufficient to fully explain complex or abstract concepts, requiring teachers to provide additional oral explanations or supplementary activities. Moreover, students' high visual interest in illustrations can sometimes distract them from focusing on the core content, necessitating teaching strategies that balance visual appeal with learning objectives. Variations in students' reading abilities also present challenges, as some learners may require extra guidance or scaffolding to engage effectively with the material. Additionally, access to educational comics that are aligned with the curriculum remains limited, and teachers often need extra preparation time to adapt or create suitable content. Addressing these challenges requires a holistic approach, including instructional planning, differentiated support, and careful integration of comics into lesson design, to ensure that this media can be utilized effectively and meaningfully.

Discussions

The potential of digital comic media in increasing students' interest in learning

Engaging and enjoyable media play an important role in increasing students' interest in reading, and digital comics are considered effective because they combine visual and textual content that supports various learning styles. Belda-Medina (2024) emphasizes that this combination not only facilitates comprehension but also stimulates students' learning interest. Findings by Dewaele and Li (2021) show that approximately 70% of fifth-grade students were more enthusiastic about reading when involved in structured reading activities or given designated reading time, indicating that the success of learning media depends on both the content and the systematic, engaging way it is presented. Naeem et al. (2023) stress the importance of integrating creative and interactive elements to make reading more meaningful, while Hsbollah and Hassan (2022) observed positive student responses when enjoyment and creativity were incorporated into the learning environment. Indriani and Suteja (2023) add that structured reading exposure with visual content improves focus and fosters long-term literacy interest. Thus, digital comics are not merely entertainment but serve as catalysts for active engagement and a reading culture in the classroom.

As a unique blend of visual and verbal elements, comics play a strategic role in making educational content more accessible and engaging for students. Fitria et al. (2023) highlight that integrating vivid illustrations with written text not only sparks curiosity but also stimulates imagination, transforming reading into an exploratory experience rather than a passive task. This aligns with Nanwani (2021), who observed that visual approaches assist young learners struggling with traditional textual materials. Axelrod and Kahn (2024) add that presenting lessons as illustrated stories creates an immersive and emotionally engaging learning environment, while Ginting et al. (2022) note that narratives and visuals allow students to associate reading with excitement and discovery rather than academic pressure. Therefore, digital comics effectively bridge the gap between reading as a mechanical task and learning as an enjoyable, meaningful experience, while accommodating various learning styles through contextual and story-based approaches.

Several studies support the use of digital comics as practical learning tools. Artanegara et al. (2024) found that implementing Problem-Based Learning with digital comics significantly improved students' learning outcomes and engagement. Similarly, Hijriyah et al. (2022) observed that using e-comics in Qira'ah instruction enhanced students' attention and motivation. These findings suggest that digital comics are not merely supplementary media but active learning tools capable of transforming classroom dynamics, as noted by Saputri et al. (2021). Comics encourage interactivity and imagination, motivating students to share ideas, discuss narratives, and relate content to their own experiences, as Pulimeno et al. (2020) highlight. According to Cents-Boonstra et al. (2020), such active engagement leads to deeper understanding and greater enthusiasm for the subject matter. When applied thoughtfully, comic-based learning can transform a dull classroom into a vibrant learning community, where students absorb information while being emotionally and cognitively engaged in the learning process.

Effectiveness and challenges in the use of digital comics as learning media

Referring to Mayer's (2002) multimedia learning theory, the combination of text and images in comics enhances students' cognitive processing by engaging both verbal and visual channels. Apostolou and Linardatos (2023) argue that using these dual channels allows students to understand abstract or complex concepts more concretely and easily visualized. Jang and Ha (2025) add that integrating images with text can strengthen memory retention, especially for learners who rely heavily on visual cues, while von Reumont and Budke (2020) highlight that comics make learning more dynamic and context-rich, benefiting young students who struggle with dense textual material. Matuk et al. (2021) emphasize that this visual-verbal format not only supports comprehension but also increases learning motivation because information is presented in an engaging and relevant way. Thus, comics serve as a strategic learning tool, offering an inclusive approach that meets diverse student needs while reducing extraneous cognitive load and enhancing meaningful engagement in multimedia learning.

Despite their educational benefits, implementing digital comics in schools faces practical challenges. Graves et al. (2021) point out that limited access to digital devices such as tablets, laptops, or stable internet, particularly in under-resourced schools, is a significant barrier. Furthermore, Zhang (2022) emphasizes that not all teachers possess the skills to design or effectively integrate comics into lesson plans, making it difficult for many educators to adopt technology-based approaches without adequate training. Dewahrani et al. (2024) add that teacher readiness and infrastructure availability are critical factors in the successful use of digital media. These obstacles underline the importance of systemic solutions, including professional development programs for teachers focusing on media creation and digital pedagogy (Theodorio, 2024), as well as school investments in adequate infrastructure. Without such support, the full potential of digital comics to enhance student engagement and learning outcomes may not be realized.

To address implementation challenges, the use of digital design tools such as Canva can be a practical solution. Firdayanti et al. (2024) emphasize that this platform helps teachers create engaging and student-friendly comics, while Fitria (2023) notes that Canva's user-friendly interface enables educators to produce high-quality visual media without advanced graphic design skills. Todino (2025) adds that the platform aligns with current educational technology trends, allowing teachers to tailor media to students' digital habits and preferences. Empirical validation also supports the effectiveness of this media; Manik (2019) notes that the quality of comic-based materials improves student understanding, and Thelma et al. (2024) affirm that well-designed comic media can significantly enhance learning outcomes. With proper training and tools, teachers can become not only content deliverers but also creative media developers, creating engaging, effective, and inclusive learning environments while strengthening student engagement.

Solutions for utilizing educational comic media for learning in elementary schools

The use of educational comic media in elementary schools functions not only as an academic tool but also as an effective means for character education. Suwanda et al. (2023) emphasize that comics designed with a character education approach can subtly instill moral values, while Kurniawan et al. (2024) add that embedding values such as honesty, responsibility, empathy, and perseverance within storylines tends to have a greater impact than direct instruction. This perspective aligns with findings at SDIT Utsmanil Hakim, where Suma et al. (2024) show that adapting comic content to reflect local cultural and moral values makes the learning experience more relevant to students' daily lives. According to Bergin et al. (2024) and Kim et al. (2024), this approach not only enhances moral understanding but also supports social-emotional development, critical thinking, and ethical reasoning. Thus, educational comics can be seen as a medium that combines academic effectiveness with value internalization, providing a more meaningful and contextualized learning approach for students.

Another key solution in utilizing digital comics in elementary schools is ensuring contextual relevance and visual appeal. Clark (2017) argues that integrating themes, characters, and settings that

reflect students' real-life environments strengthens the connection between learning materials and daily experiences, making learning more meaningful. This approach aligns with Dubovi and Tabak (2021), who emphasize that relevant context increases students' emotional and cognitive engagement compared to abstract or generic materials. Kelly et al. (2021) and Rosser & Soler (2024) add that such contextual connections support the development of a literacy culture that is not only academic but also social and cultural, making literacy part of students' lived experiences. Gambrell (2015) and Nurhayati & Najuan (2023) demonstrate that transitioning from passive to active literacy through relevant media helps students gain deeper understanding, naturally maintain reading habits, and increase overall learning motivation.

The success of implementing educational comics in elementary schools depends not only on the quality of the media itself but also on collaboration between teachers and parents. Mamolo (2022) highlights that teachers play a crucial role in designing engaging, educational modules that align with academic standards, ensuring that comic media can effectively support learning objectives. However, as noted by Hadlington et al. (2019), access to technology at home is a determining factor because without adequate devices and connectivity, students cannot fully utilize digital media. This perspective is extended by Palioura & Dimoulas (2022) and Zakya et al. (2024), who show that synergy between teachers and parents creates an adaptive and innovative learning ecosystem, supporting continuous learning beyond the classroom. With combined academic and technological support, Golden (2023) argues that the use of educational comics not only enhances academic achievement but also strengthens character and fosters a holistic learning experience that prepares students to face future challenges.

CONCLUSION

Based on the discussion above, it can be concluded that digital comics play a strategic role in enhancing students' learning interest and engagement. Digital comics not only present academic content in an engaging manner through a combination of text and visuals but also instill moral and ethical values, supporting holistic character education. Their effectiveness is reinforced by contextual relevance, visual appeal, and a story-based approach that transforms literacy into an active and enjoyable experience. Nevertheless, the implementation of digital comics faces challenges such as limited access to technology and teacher readiness, requiring infrastructure support, training, and collaboration between teachers and parents. Practical solutions, including the use of digital design tools such as Canva, enable teachers to create creative and student-friendly media. With the right strategies, digital comics can foster an inclusive, interactive, and effective learning environment while cultivating strong literacy habits and character development in students.

Theoretically, these findings reaffirm Mayer's multimedia learning theory, which emphasizes the integration of text and visuals to enhance cognitive processing, comprehension of abstract concepts, and learning motivation. The use of digital comics also strengthens context- and story-based learning approaches, supporting active literacy and the internalization of moral values, thus contributing to the development of holistic literacy and character education theory. Practically, the implications highlight the need for teachers to design contextual, interactive, and engaging learning media, supported by digital design tools like Canva to produce high-quality comics without advanced design skills. Additionally, teacher-parent collaboration and adequate digital infrastructure are key to successful implementation. Consequently, digital comics can serve as an inclusive learning strategy that enhances engagement, understanding, and character development among elementary school students.

Although this study demonstrates the potential of digital comics to enhance learning interest, engagement, and character education, several limitations should be noted. First, most findings are conceptual or based on limited case studies, requiring caution when generalizing to broader elementary school contexts. Second, this research has yet to extensively assess the long-term impact of digital comics on academic achievement, literacy, and character development quantitatively. Third, variations in technological access and teacher readiness across schools may influence implementation

effectiveness, which has not been fully analyzed. Therefore, further research is recommended to conduct empirical studies with larger samples, using experimental or longitudinal designs to comprehensively evaluate the impact of digital comics. Future studies could also explore the integration of local cultural values and innovative digital pedagogy approaches to enhance the effectiveness of this media across diverse educational contexts.

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