

Enhancing Pancasila Education Through Flipbook-Based Digital Comics: A Learning Media Innovation for Fifth-Grade Students

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ABSTRACT

Teaching Pancasila Education in the digital era presents challenges, particularly in conveying abstract concepts to Grade V elementary school students who are in the concrete operational stage of cognitive development. To address this issue, innovative and engaging learning media are needed. This study aimed to develop and evaluate flipbook-based digital comic media to enhance student learning outcomes in Pancasila Education at SDN 04 Paduraksa Pemalang. A modified Borg and Gall Research and Development (R&D) model was employed, consisting of eight systematic stages, from problem identification to product testing. The development process included expert validation and user testing on two scales: a small group of 6 students and a larger group of 22 students. The media received high feasibility ratings from both material experts (85%) and media experts (93.73%), placing it in the "very good" category. Student and teacher response questionnaires showed very positive feedback, with satisfaction scores of 87% and 95%, respectively. Learning outcomes improved significantly, with the average pretest score increasing from 51.59 to 86.14 in the posttest. The calculated N-Gain score of 0.73 indicates a "moderately effective" level of improvement. The flipbook-based digital comic effectively integrates narration, visuals, and animation to simplify abstract Pancasila concepts, making them more accessible and engaging for elementary students. These findings suggest that this media provides a practical and enjoyable alternative to traditional learning methods, contributing to improved educational outcomes in civic education.

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1. INTRODUCTION

The 21st century is a digital century, an era marked by significant technological advancements, including the internet (Hesti et al., 2024). Technological advances have an impact on various aspects of human life, especially in the context of education (Boentolo et al., 2024). Education is an effort to improve the quality of human resources, which is very important for the operation of the state, society, and nation based on Pancasila. This is in line with the objectives of national education, which include helping students develop their capacity to become devout individuals who are devoted to God

Almighty, noble, healthy, intelligent, capable, creative, independent, and democratic as well as responsible citizens. Education needs to foster and assimilate the values of the country's cultural ideology as a whole, thoroughly, and periodically.

However, there is a significant research gap in the teaching methods of Pancasila Education in this digital era, especially for elementary school students. Previous research shows the limitations of conventional learning methods in teaching abstract values of Pancasila to students who are at the concrete operational stage of development (Modjo et al., 2024). The study conducted by (Mu'afifah et al., 2024) identified that elementary school students often have difficulty understanding the abstract concepts of Pancasila when delivered through lecture and discussion methods alone. This creates a need for a more innovative learning approach that matches the characteristics of students' cognitive development. In improving the quality of "Pancasila education", an educator must make new innovations in teaching (Zega et al., 2023). Some examples of new innovations in modern teaching that can increase student participation are the use of online learning platforms, educational applications, and social media by instilling values and national character to students, especially in online learning in the 4.0 era (Lukman et al., 2025). However, teaching Pancasila in grade V elementary school is not easy. Students at this age are in the concrete operational phase of development, where they begin to understand more complex and abstract concepts (Modjo et al., 2024). Thus, fifth-grade students have varying understandings of the abstract ideas taught in Pancasila learning. This can be a challenge for teachers in delivering material effectively, so a suitable approach is needed to help students better understand and internalise the values of Pancasila (Mu'afifah et al., 2024).

The novelty of this research lies in the development of flipbook-based digital comic media specifically designed for the context of Pancasila education, with a focus on the rights and obligations as school citizens. In contrast to previous studies that only focus on the use of digital media in general, this study integrates interactive features such as QR-Code and background in digital comic learning media flipbook, specifically aimed at improving understanding of abstract Pancasila material through concrete visualization set in the lives of students as school citizens. The learning approach used to increase activity in the student learning process can be more effective when supported by utilizing innovative learning media (Mu'afifah et al., 2024). Any medium that conveys information with the purpose of facilitating learning is considered a learning medium (Dewi & Wulandari, 2024). In the era of increasingly sophisticated technology, many creative applications and websites are available that can be used as learning media, one of the prominent choices is flipbook-based comic media. The use of flipbook-based comics in learning can provide a memorable and interesting experience for children involved in the learning process (Boentolo et al., 2024). Flipbook-based comics are multimedia that integrates narration, images, and animation in one format and allows visualization of abstract concepts in a way that is interesting and easily understood by students (Mu'afifah et al., 2024b; C. W. Rahayu & Wibawa, 2024).

According to previous research (Ramadanti & Bektiningsih, 2023), digital comics in the form of flipbooks can facilitate learning activities and enhance learning outcomes for students. Additionally, research has shown that digital comics presented in the form of flipbooks can inspire students to learn more (Afriliani et al., 2022). There is a pressing need to incorporate electronic media into the teaching and learning process, according to the results of interviews with teachers at SDN 04 Paduraksa. Teachers stated that the development of increasingly sophisticated times requires innovation in teaching methods. Currently, the learning media available in schools are still limited to printed books and PowerPoint presentations, while more innovative media such as learning videos and educational comics are rarely used. In learning Pancasila, teachers more often use lecture and discussion methods, which can make students less involved and lose interest in the material being learned, especially on concepts that require concrete visualization such as examples of the application of rights and obligations as school citizens.

This condition shows the need for alternative media that can increase student engagement and their critical thinking skills. One such approach is to utilize digital comic material in the style of flipbooks. Students will have an easier time understanding and internalizing the Pancasila values through the use of this media because it is both aesthetically pleasing and diverse. This phenomenon shows the need for

alternative media that can increase student engagement and their critical thinking skills. One solution that can be implemented is the use of flipbook-based digital comic media. This media is not only visually appealing but also effective and efficient, so it can help students understand and internalize Pancasila values in a more enjoyable way (Zega et al., 2023).

Based on the background and supporting research, this study is motivated by the need to develop innovative learning media that effectively deliver Pancasila Education to fifth-grade students at SDN 04 Paduraksa. The selected medium is a flipbook-based digital comic designed to address the difficulty of conveying abstract civic concepts to students at the concrete operational stage of cognitive development. This study adopts a Research and Development (R&D) approach. The novelty of this research lies in the development of digital comic media that incorporates contextual narratives reflecting students' lives as school citizens. The comics are designed with interactive features such as QR code access and audio backgrounds, offering a more engaging and immersive learning experience. These elements are expected to enhance students' interest and engagement, ultimately improving their comprehension of civic responsibilities and rights.

In light of this context, the research explores how flipbook-based digital comics can be effectively used to teach the concept of rights and responsibilities as school citizens within the Pancasila Education curriculum. It further investigates how fifth-grade students respond to the use of this media and examines its effectiveness in improving their understanding of the material. The primary objective is to design and develop digital comics that align with the learning needs and characteristics of elementary students while supporting curriculum goals. Additionally, the study seeks to evaluate student engagement and learning outcomes as indicators of the media's effectiveness.

This research is expected to contribute meaningfully to educational practice by providing teachers with a creative, efficient, and engaging alternative to conventional teaching methods. By facilitating a more interactive learning experience, the developed media can help improve the quality of civic education in elementary schools, particularly in the context of students' roles and responsibilities as members of the school community. Moreover, this work contributes to the broader field of learning media development and may serve as a theoretical reference for future studies involving digital comic-based instructional tools.

2. METHODS

Using the Borg and Gall approach, this study is a development study. The benefits of providing thorough and comprehensive stages led to the selection of the Borg and Gall model, so that it can be adjusted to the situation and conditions in the field (Waruwu, 2024). In the development process, this research implements a waterfall approach. This model has stages with 10 steps, namely: (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product trial 1, (7) product revision 1, (8) trial use, (9) product revision 2, (10) mass production (Ramadanti & Bektiningsih, 2023). The Borg and Gall model has 10 steps, but the researcher modified it to 8 steps. Given the existing limitations, namely time and availability of facilities and infrastructure to carry out mass production. In addition, researchers in this study only want to test the feasibility and effectiveness of flipbook-based digital comic learning media on student learning outcomes (Ramadanti & Bektiningsih, 2023). The eight stages include: (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product trial 1, (7) product revision 2, (8) trial use. According to (Ramadanti & Bektiningsih, 2023), the Borg and Gall development steps are not carried out entirely, but can also be modified into several stages according to the needs of the researcher.

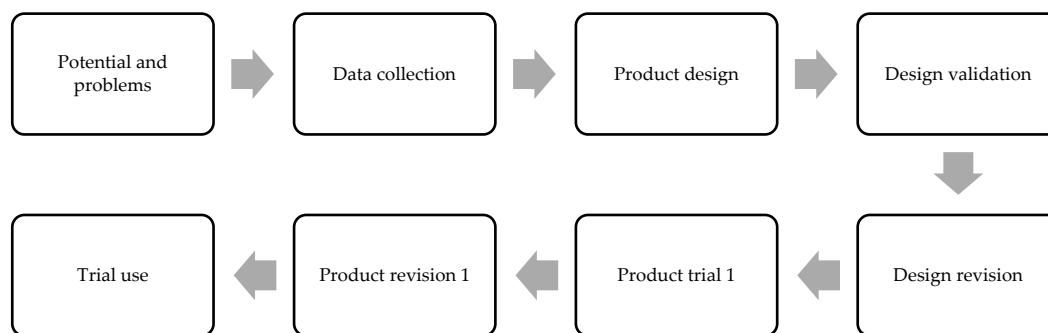


Figure 1. Borg and Gall Model

This research was conducted at SD Negeri 04 Paduraksa, located in the Pemalang District of Pemalang Regency, during the even semester of the 2024/2025 academic year. The study population consisted of 39 students, comprising 22 fifth-grade and 17 sixth-grade students. For the purposes of product testing, the population was divided into two groups: a large-scale group and a small-scale group. The large-scale group included all 22 fifth-grade students, while the small-scale group consisted of six sixth-grade students selected through purposive sampling. This sampling technique was employed to ensure representation across different academic ability levels: two students with high academic achievement, two with average performance, and two with lower academic performance.

Data collection employed both test and non-test techniques. The test technique involved administering a pre-test and post-test to assess students' conceptual understanding. These tests were specifically designed for upper elementary students (grades 4, 5, and 6), focusing on items that measure higher-order thinking skills (HOTS), particularly at cognitive levels C4 to C6. The test comprised 20 multiple-choice questions aligned with these cognitive domains, which are recognized for assessing analytical, evaluative, and creative thinking abilities (Gunartha et al., 2024). Prior to implementation, the test items underwent empirical validation, including assessments of construct and content validity, reliability, item difficulty, and discrimination power, to ensure the quality and accuracy of the instrument. The detailed results of these empirical tests are presented in Tables 1 and 2.

Table 1. Validity test results

Valid Question	Invalid Question
2, 4, 7, 8, 9, 11, 17, 22, 24, 31, 33, 37, 41, 42, 45, 46, 47, 48, 49, 50	1, 3, 5, 6, 10, 12, 13, 14, 15, 16, 18, 19, 20, 21, 23, 25, 26, 27, 28, 29, 30, 32, 34, 35, 36, 38, 39, 40, 43, 44

Table 2. Reliability test results

Score variance	Reliable Coefficient	Reliable status
34.25	0.951171	Reliable

Furthermore, non-test techniques in this study were carried out through observation, interviews, and questionnaires. Data analysis methods are used to gather information about the effectiveness of digital comic learning media based on flipbooks in “Pancasila Education” subjects, as well as information about the criteria for eligibility. In this study, there are three data analysis methods applied. First, qualitative descriptive analysis to examine various inputs and suggestions obtained from experts and responses from students and teachers regarding flipbook-based digital comic learning media in “Pancasila Education” Subjects.

Second, to analyze the results of the assessment in the form of scores given by experts, student and teacher responses to learning media, quantitative descriptive analysis is used. Media expert validators were carried out by lecturers of the UNNES PGSD study program who are experts in the field of media, namely Mr. Moh. Fathurrahman, S.Pd., M.Sn, while material validators were carried out by lecturers of the UNNES PGSD study program who are experts in the field of "Pancasila Education", namely Mr. Susilo Tri Widodo, S.Pd., M.H. In the data collection process, researchers used an instrument in the form of a questionnaire. The learning media eligibility category is as follows.

Table 3. Categories of media feasibility score assessment results

Percentage range	Category
76% - 100%	Very decent/very good
51% - 75%	Decent/Good
26% - 50%	Less feasible / Sufficient
0% - 25%	Not feasible/Lacking

(Nisaa' Novitaningtyas et al., 2024)

Third, the N-Gain test and t-test were conducted to determine the effectiveness of digital comic flipbook learning media for "Pancasila Education" courses. This test aims to determine whether the average student learning outcomes increase after using this media and to determine the effectiveness of its use. The results of the N-Gain analysis are presented in Table 4 below.

Table 4. N-Gain value categories

N-Gain Value	Category
$g > 0.7$	High
$0.3 \leq g \leq 0.7$	Medium
$g < 0/3$	Low

(Haka et al., 2022)

The categorization of the effectiveness of the N-Gain Score is presented in Table 5, as follows.

Table 5. Categories of interpretation of the effectiveness of the N-Gain score

Percentage (%)	Interpretation
< 40	Ineffective
40 - 55	Less effective
56 - 75	Effective enough
> 76	Effective

(Olivia Febrianti et al., 2024)

3. FINDINGS AND DISCUSSION

The goal of creating digital comics based on flip books was to enhance the "Pancasila Education" learning outcomes for fifth graders at SD Negeri 04 Paduraksa Pematang. The R&D approach, based on the development model proposed by Borg and Gall, is used in this study. The explanation of several stages in making flipbook-based digital comic media is as follows.

3.1. Findings

3.1.1. Potential and problems

Researchers begin their work by identifying both problems and potential opportunities. In obtaining preliminary data, researchers conducted pre-research using three data collection methods, namely observation, interviews, and documentation in class V of SD Negeri 04 Paduraksa Pematang.

Based on the pre-research, researchers can collect information about the potential that exists and the problems faced. Class V at SD Negeri 04 Paduraksa has a number of issues that require fixing, according to the data analysis. The most prominent problem is the lack of student interest in "Pancasila Education" subjects. The requirements analysis indicates that students find learning Pancasila tedious due to insufficient diverse learning materials. This is due to the suboptimal integration of information technology (IT) in educational media. Furthermore, pupils reported challenges in comprehending the concepts of rights and responsibility as school citizens within "Pancasila Education" curricula, and students find it easier if the material is delivered with more interesting media associated with daily life at school.

3.1.2. Data Collection

The second stage carried out by researchers is data collection. At this stage, starting with collecting various references commonly used by educators regarding the material of rights and obligations as school citizens, including examples of its application in everyday life. From the various examples of application, the most suitable one was chosen to be developed into a comic story. Next, the learning outcomes and objectives are determined, which will be the basis for creating a storyline related to the learning material. The process continues with making a synopsis of the story and determining the character of the comic character. The final stage is to determine the application that will be used in the development of learning media.

3.1.3. Product Design

The third stage carried out by researchers is product design. The design begins with making visual concepts and narrative flow of digital comics using editing applications such as *CorelDRAW* and *Canva*. The design is adjusted to the material and learning objectives that have been determined previously. The comics made use of the background atmosphere of learning implementation in the classroom and interaction in the school environment. Furthermore, the characters in the comic are made into six characters, consisting of five learners and one teacher. The five learners show differences in their characters regarding knowledge of their rights and obligations at school. With the differences in these characters, then the visual concept is made by compiling a storyboard using *Canva* with the aim of making digital comics easier. After the design is finished, the comic is converted into a flipbook using the *FlipHTML5* web and can be shared in the form of the following QR-ScanCode.



Figure 2. QR-ScanCode of digital comic learning media "Andi's Adventure"

3.1.4. Design Validation

The fourth stage in this research involves design validation. Once the product design is completed, evaluation is conducted by experts, including media specialists and subject matter authorities. For this validation process, various instruments were prepared, comprising inquiries and assertions pertaining to the developed products for evaluation by expert validators. The validation test results from these experts are presented in the following table of digital comic learning media feasibility test outcomes.

Table 6. Calculation of validation by experts

Assessment Aspect	Percentage	Category
Learning aspects	83%	Very Feasible
Language Aspect	83%	Very Feasible
Presentation aspect	87%	Very Feasible
Average percentage	85%	
Category	Very Feasible	

Table 7. Calculation of validation by media experts



Assessment Aspect	Percentage	Category
Presentation	93.7%	Very Feasible
Illustration	87%	Very Feasible
Storyline	100%	Very Feasible
Material	95%	Very Feasible
Language	95%	Very Feasible
Average percentage	93.73%	
Category	Very Feasible	

3.1.5. Design Revision

The fifth stage of this research involves design revision. Material and media experts conducted design validation to identify areas for improvement in suboptimal components prior to the trial phase. During this process, researchers incorporated suggestions and feedback from validators as guidelines for enhancing the digital comic learning media, including additional design steps for the digital comics. The results of revisions from media experts include the addition of pages consisting of comic title layouts, class descriptions, learning objectives, bios of supervisors, and media bibliographies.

Table 8. Revision Results

Initial Product	Final Product	Advice
<p>The initial cover features a blue background with a sun in the top left. It includes the title 'PENGEMBANGAN KOMIK DIGITAL "PETUALANGAN ANDI: BELAJAR HAK DAN KEWAJIBAN"' and a subtitle 'Hak dan Kewajiban sebagai warga sekolah'. It also lists the author 'Dina Nurrahma' and supervisor 'Dr. Akhmad Junaidi, M.Pd.' with their contact information. The illustration shows a group of diverse children sitting on a large red book that is flying through the air.</p>	<p>The final cover has a similar design but with a more vibrant blue background. The title is 'PENGEMBANGAN KOMIK DIGITAL "PETUALANGAN ANDI"'. The subtitle is 'Hak dan Kewajiban sebagai warga sekolah'. The author's name is 'Dina Nurrahma' and the supervisor is 'Dr. Akhmad Junaidi, M.Pd.'. The illustration is more detailed, showing the children on the flying book with a 'Kelas V' label in the bottom right corner.</p>	<p>Added class information and changed the layout of the author's name, supervisor, and material title.</p>
<p>-</p>	<p>This page is titled 'CAPAIAN PEMBELAJARAN' (Learning Outcomes). It contains a text box with a paragraph of Indonesian text. Below the text box is a small illustration of a girl pointing upwards. A yellow box with the number '2' is at the bottom.</p>	<p>Addition of learning outcome information.</p>
<p>-</p>	<p>This page is titled 'TUJUAN PEMBELAJARAN' (Learning Objectives). It contains two sections: 'PERTEMUAN PERTAMA' and 'PERTEMUAN KEDUA', each with a paragraph of Indonesian text. Below the text is a small illustration of a girl pointing upwards. A yellow box with the number '3' is at the bottom.</p>	<p>Addition of learning objective information</p>

Initial Product	Final Product	Advice
-		<p>Addition of the supervisor's biography after the author's biography.</p>
-		<p>Adding a bibliography for making digital comic media.</p>

3.1.6. Product Trial 1

In the sixth stage, researchers conducted a small-scale product trial in the sixth grade of SD Negeri 04 Paduraksa Elementary School. This trial employed a purposive sampling technique. According to the Bord and Gall model, development research of this nature only requires 6-12 subjects based on intellectual heterogeneity (Ramadanti & Bektiningsih, 2023). Due to subject limitations, the researchers selected 6 samples representing various intelligence levels: 2 students with the highest academic ranking, 2 students with middle rankings, and 2 students with the lowest rankings. The study gathered student feedback through questionnaires, with assessment results as follows:

Table 9. N-gain Test Results

Category	Value Average	The difference in average	Average ideal value	N-Gain	Interpretation
Pretest	64,833	22,33	35.166	0.6352	Effective enough
Posttest	87.166				

Table 10. Small-Scale Student Response Results

Number of students	Score	Max Score	Average	Description
6	409	480	85.20	Very feasible

3.1.7. Product Revision 1

The next stage is product revision. After knowing the results of the small-scale trial in the table above, researchers did not receive too much criticism or suggestions from students. Some responses from Grade VI students suggested that the font in the comic writing was less clear and too small, specifically with a size of seven, making it difficult to read. This response became the researcher's input, allowing the product to be revised by improving areas that were not optimal. According to the students in the small-scale trial, the digital comics developed using the flipbook-based approach were well-received.

3.1.8. Trial Use

After conducting small-scale trials and product revisions according to input on digital comic writing fonts, the next stage is product testing on a large scale. Large-scale trials were carried out on fifth-grade students of SD Negeri 04 Paduraksa with a total of 22 children. This test aims to assess the efficacy of flipbook-based digital comic learning media in enhancing student learning outcomes in "Pancasila Education", particularly regarding the material on rights and obligations as school citizens. The evaluation procedure involves administering an initial assessment (PreTest) and a concluding assessment (PostTest), alongside data gathering via instructor response surveys and student feedback on the created media.

Based on the data analysis from the extensive product trial, students showed improved learning outcomes during the trial period. This improvement was measured by comparing results before and after using the digital comic media with flipbook functionality. To obtain a more precise measurement of the enhancement in student performance, the research team utilized the N-Gain test methodology. The N-Gain test results for the large-scale participant group who used the flipbook-based digital comic learning materials are displayed in the table below:

Table 11. N-gain Test Results

Category	Value Average	The difference in average	Average ideal value	N-Gain	Interpretation
Pretest	51.5909	34.5455	48.4091	0.732465	Effective enough
Posttest	86.1364				

The analysis conducted through the N-Gain test on large-scale groups yielded positive outcomes. According to the best results, an average N-Gain value of 0.73 was achieved, which falls into the quite effective category. The data indicate a substantial improvement in average student learning outcomes, as evidenced by the comparison between pretest-posttest score. Consequently, it can be inferred that the implementation of flipbook-based digital comic media significantly improves student learning results.

Table 12. Results of student and teacher response analysis

Respondent	Total	Score	Max Score	Average	Category
Students	22	1548	1760	87.95	Very feasible
Teacher	1	76	80	95	Very feasible

Flipbook-based digital comic media received very good responses from 22 fifth-grade students of SD Negeri 04 Paduraksa. Based on the data analysis that has been carried out, the level of positive responses from students reached 87.95% and the acquisition of teacher responses of 95%. This percentage indicates that the developed learning media is highly suitable for implementation in the "Pancasila Education" curriculum regarding the rights and obligations of school citizens.

3.2. Discussion

The development of flipbook-based digital comic learning media for Pancasila Education in Grade V at SD Negeri 05 Paduraksa has demonstrated a significant positive impact on students' academic performance and engagement. One of the key findings of this study is the media's effectiveness in enhancing students' comprehension of rights and responsibilities as members of the school community. This improvement can be attributed to the design of the flipbook-based digital comic, which incorporates narrative elements and visuals that contextualize abstract concepts in relatable, everyday school scenarios. Validation by material experts confirmed that the content aligns well with the targeted competencies, ensuring that the materials are not only engaging but also pedagogically sound. The alignment of content with learning objectives plays a critical role in fostering deeper understanding among students, as it provides them with coherent, structured, and goal-oriented instruction.

This assertion is supported by previous studies which have shown that digital comics can significantly enhance students' comprehension of civics-related topics, particularly those involving abstract values such as rights and obligations (Septiana et al., 2024; Wulandari & Suniasih, 2022). The present study's use of digital comics infused with educational values underscores their dual role as both instructional tools and character-building media. Puniatmaja and Renda (2021) emphasized the importance of embedding character education in instructional content to promote moral development and civic responsibility. Similarly, Febriyandani (2021) and Hanifah et al. (2023) found that comic-based media are highly adaptable to a wide range of educational content and can be effectively integrated into classroom instruction, enabling students to absorb complex information in a more accessible format.

The effectiveness of the digital comic media is further reflected in qualitative student feedback. During post-implementation interviews, students expressed that the comic format helped them better understand abstract Pancasila concepts, particularly those related to school citizenship. One Grade V student noted, "It is easier for me to remember my rights and obligations at school because I can see examples in the comic story." This statement highlights the value of narrative-driven, visual media in supporting memory retention and concept internalization. Teachers also observed improved classroom discourse, with students referencing specific scenes from the comics to explain their understanding of civic duties. A fifth-grade teacher remarked, "Students often refer to specific scenes in the comics when discussing their rights and obligations at school, showing that they are not just memorizing but actually understanding the concept."

This anecdotal evidence is supported by empirical data. Prior to the implementation of the digital comic media, only 45% of students were able to provide examples of rights and obligations. After implementation, this figure rose to 78%, indicating a substantial increase in conceptual understanding. Additionally, the average student score improved from 51.59 in the pre-test to 86.14 in the post-test, with an N-Gain value of 0.73, which is classified as "moderately effective." These findings confirm that integrating digital comic media into civic education can significantly improve both learning outcomes and student engagement.

In addition to improving comprehension, the flipbook-based digital comic media also enhanced students' motivation to learn. Motivation is a crucial factor in educational success, and it is influenced by how students perceive the relevance and accessibility of the learning material. When the content of the comic story aligns with students' everyday experiences and interests, their motivation increases (Afriliani et al., 2022; Rahmawati et al., 2024). This study confirms that students are more enthusiastic and willing to participate in lessons that incorporate multimedia and relatable storytelling elements. Kurniawan and Wuryandani (2017) argue that effective learning media should stimulate not only cognition but also emotion and motivation to support an active and meaningful learning process.

Moreover, the use of technology-based media has emerged as a critical innovation in 21st-century education. Comics, defined as a combination of sequential narratives and visual illustrations, provide both entertainment and education, making them particularly suitable for young learners (Anggraeni et al., 2021; Takengon et al., 2020). Comic media are inherently engaging and possess the unique ability to

communicate complex concepts through harmoniously arranged storylines and compelling images. According to Amral and Sumiharti (2024) as well as Ramadhany et al. (2024), the sequential narrative structure of comics enhances comprehension while encouraging sustained reader interest.

Teacher observations during the implementation phase further confirm a shift in classroom dynamics. Students who were previously passive or reluctant to participate became actively involved in discussions, often initiating conversations about the scenarios presented in the digital comics. This behavioral transformation reflects an increase in not only cognitive engagement but also emotional investment in the subject matter. As a result, the use of flipbook-based digital comic media has proven to be an effective strategy for increasing student motivation and interaction, which are essential for achieving deeper learning outcomes.

Another key advantage of this media is its ability to create a more enjoyable and student-centered learning environment. Comics' inherently entertaining nature makes them effective in attracting students' attention and maintaining their focus during lessons. According to Saniyyah et al. (2024), digital comics serve as effective educational media by delivering instructional content through engaging narratives that foster a positive learning atmosphere. Anggraeni et al. (2021), Febriyandani (2021), and Rahmawati et al. (2024) similarly highlight that the entertaining aspect of comics, when combined with pedagogical objectives, results in higher levels of student engagement and satisfaction. This alignment between engaging content and assessment strategies ensures that students are not only enjoying the learning process but are also effectively absorbing and applying the material.

Additionally, the flipbook-based digital comic format supports multiple modes of learning through its visual and textual components. The multimedia nature of the platform caters to various learning styles, making the material more accessible to a diverse student population. As noted by Ayu et al. (2021) and Wulandari and Suniasih (2022), comic media are highly suitable for educational development because they improve learning outcomes by simplifying complex information and presenting it in a form that students find enjoyable and easy to process.

The technological design of the flipbook format further enhances its educational potential. Compared to traditional comics, flipbooks offer dynamic, interactive features and visually engaging layouts. These elements improve students' reading experiences and foster curiosity, creativity, and independent learning. Research by Fortune and Suranto (2023) and Nasution et al. (2024) supports this finding, noting that flipbooks can enhance comprehension, academic performance, and motivation. Purnomo et al. (2024) also found that flipbook technology increases student engagement by allowing access to learning materials across various digital platforms.

Flexibility is another key strength of this media. Students can access the comics via smartphones, tablets, laptops, or desktop computers, offering them the freedom to learn at their own pace and in environments where they feel most comfortable. This flexibility is especially relevant in modern educational contexts that increasingly value self-directed and technology-enhanced learning. By accommodating individual learning preferences and schedules, the media promotes autonomy and reinforces positive learning habits.

Overall, this study affirms that flipbook-based digital comic media provide an innovative, engaging, and effective instructional approach for teaching Pancasila Education in elementary schools. The media not only enhance students' academic achievement and motivation but also foster a deeper understanding of civic values. By integrating storytelling, visuals, interactivity, and accessibility, this learning tool addresses multiple dimensions of effective teaching and learning. Future research may explore the broader application of this media in other subjects or educational levels, as well as its long-term impact on students' character development and civic engagement.

4. CONCLUSION

In conclusion, the development of flipbook-based digital comic learning media for Pancasila Education, using the Borg and Gall model through eight systematic stages, has proven to be both feasible and moderately effective in enhancing fifth-grade students' understanding of their rights and obligations as school citizens. The media—designed with contextual narratives, QR-code access, and engaging features such as background music—received very high validation scores from both material experts (85%) and media experts (93.73%), along with positive responses from students (87.95%) and teachers (95%). It significantly improved student learning outcomes, as evidenced by the increase in average test scores from 51.59 to 86.14 and an N-Gain score of 0.73. However, this research is limited in scope due to its relatively small sample size and implementation in a single school context, which may affect the generalizability of the findings. Future research should consider broader and more diverse samples across different schools and regions, explore long-term impacts on student character development, and examine how digital comics can be adapted for other subjects. Additionally, researchers should investigate the integration of interactive features and teacher training strategies to maximize the pedagogical benefits of flipbook-based media in diverse educational environments.

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