The development of comic media based on Sekujang culture for elementary school students

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Abstract: Elementary students' cognitive learning outcomes remain a challenge, particularly in understanding, remembering, and applying taught concepts. Low cognitive achievement is often caused by a lack of student engagement, unappealing teaching methods, and minimal use of interactive and contextual learning media. This study aims to develop and assess the feasibility of Sekujang culture-based comic media and determine its effectiveness in enhancing students' cognitive learning outcomes in Bahasa Indonesia learning. Using the R&D method with the ADDIE model, this study found that the comic media met the "very feasible" criteria based on expert assessments. The material validation scores increased from 37 and 39 in stage 1 to 55 and 58 in stage 2, while the design validation scores improved from 35 to 53 and 55. The effectiveness test using a paired t-test yielded a significance value of 0.000, indicating a significant improvement in students' cognitive learning outcomes. The experimental class achieved a gain score of 0.3756 (moderate), while the control class only reached 0.1686 (low). These findings suggest that the Sekujang culture-based comic media is an effective and engaging learning tool for Bahasa Indonesia instruction in elementary schools.

Keywords: Comic media, Indonesian language learning, Sekujang culture

Abstrak: Hasil belajar kognitif siswa sekolah dasar masih menjadi tantangan, terutama dalam memahami, mengingat, dan menerapkan konsep yang diajarkan. Rendahnya pencapaian kognitif sering kali disebabkan oleh kurangnya keterlibatan siswa, metode pembelajaran yang kurang menarik, serta minimnya penggunaan media pembelajaran yang interaktif dan kontekstual. Penelitian ini bertujuan untuk mengembangkan dan mengetahui kelayakan media komik berbasis budaya Sekujang serta mengetahui keefektifan media komik terhadap hasil belajar kognitif siswa dalam pembelajaran Bahasa Indonesia. Peneliti menggunakan metode R&D dengan model ADDIE, penelitian ini menemukan bahwa media komik memenuhi kriteria "sangat layak" berdasarkan penilaian para ahli. Skor validasi materi meningkat dari 37 dan 39 pada tahap 1 menjadi 55 dan 58 pada tahap 2, sementara skor validasi desain meningkat dari 35 menjadi 53 dan 55. Uji efektivitas menggunakan *paired t-test* menghasilkan nilai signifikansi 0.000, yang mengindikasikan peningkatan signifikan dalam hasil belajar kognitif siswa. Kelas eksperimen memperoleh gain score sebesar 0.3756 (sedang), sedangkan kelas kontrol hanya mencapai 0.1686 (rendah). Temuan ini menunjukkan bahwa media komik berbasis budaya Sekujang merupakan media pembelajaran yang efektif dan menarik dalam pembelajaran Bahasa Indonesia di sekolah dasar.

Kata kunci: Media komik, budaya Sekujang, pembelajaran bahasa Indonesia

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INTRODUCTION

Education plays a crucial role in shaping the character and understanding of the younger generation towards the cultural values around them. In Indonesia, the rich cultural diversity needs to be preserved, one of which is through the introduction and learning of local culture to children from an early age, particularly at the primary school level. Aulia and Susanti (2021) state that multicultural education can influence the character of students, especially at the primary education level. Various implementations of multicultural

education contribute to the formation of positive character in students. Darmansyah and Susanti (2023) explain that specific methods need to be applied in culture-based learning. Ngazizah et al. (2022) mention that one effective way to introduce local culture is through engaging and easily understood media, one of which is comic media.

However, the introduction of local culture to students still faces several challenges. One of them is the lack of engaging and culturally relevant learning media. Textbooks used in schools often do not reflect the local culture of the students, making learning less meaningful and disconnected from their daily lives (Wicaksono, 2014). Additionally, local cultures such as Sekujang, which are rich in noble values, folklore, and valuable traditions, tend to be less known among the younger generation, particularly primary school students (Susanti & Darmansyah, 2022). This results in a lack of appreciation and understanding among students towards their own cultural heritage. Consequently, students miss the opportunity to learn about the moral, social, and local wisdom values embedded in these cultures.

Comics, as a form of visual media popular among various groups, especially children, have great potential to deliver information in a more engaging and easily digestible manner (Damopolii et al., 2022; Lanti, 2017). According to Putra (2021) comics are images that convey information or evoke an aesthetic response in the viewer. Comics are not only entertaining but can also be an effective tool for delivering educational messages, including the introduction of local culture. Through rich visualisations and compelling narratives, comics can help students more easily understand and internalise cultural values in their daily lives.

The Sekujang culture, originating from the Serawai community in Seluma Regency, holds noble values, folklore, and traditions that deserve to be preserved. However, this culture is increasingly marginalised and less known among the younger generation. Integrating Sekujang culture into comic media can be a solution to introduce and preserve this culture. Comics based on Sekujang culture will not only enrich students' knowledge of local culture but also foster a sense of love and pride in their cultural heritage. Furthermore, comics can be an effective medium for conveying the moral and social messages contained in Sekujang folklore.

The use of culture-based comics can provide both an enjoyable and educational learning experience (Malau et al., 2021; Suryanto, 2023; Werimon et al., 2017). Through visualisations of traditions and cultural values within the Sekujang community, students can more easily understand and internalise the culture in their everyday lives. Additionally, Alwi et al. (2024), and Aditia and Aditia (2024) demonstrate that comics can also develop children's visual literacy skills, while enriching their knowledge of Indonesia's cultural diversity. Comics, with their combination of images and text, cater to diverse learning styles, making them accessible to a wide range of students. Furthermore, the engaging nature of comics can foster creativity and critical thinking, as students interpret visual narratives and connect them to their own cultural contexts. This approach not only enhances learning outcomes but also strengthens students' emotional connection to their cultural heritage.

The use of comics as a storytelling medium can be an alternative to revitalize local culture. Research by Susanti et al. (2023) shows that culture-based learning media is effective in improving students' cognitive abilities in problem-solving. A study by Muktadir and Darmansyah (2021) indicates that comics support teachers in teaching storytelling

materials. Meanwhile, Murti (2020) reveals that the development of comics with local values is necessary to meet the needs of elementary school students and support character formation. Jitpranee et al. (2024) also emphasize that stories within local cultures, as a medium of cultural communication, carry noble values that can be used to convey moral and social messages in human life.

The development of local comics has stagnated due to the dominance of foreign comics, particularly Manga from Japan (Junid & Yamato, 2019). Although local comics still exist, the lack of promotion and support hinders their growth. According to Nafala (2022) comics as teaching materials can clarify concepts and convey information more easily through strong visual elements and engaging stories. Wallner (2019) adds that illustrations in comics enrich the text, clarify characters, and help students understand stories that could previously only be imagined. Research by Murniviyanti and Marini (2021) concludes that comic-based teaching materials are effective in enhancing educational understanding. However, the limited availability of comic materials relevant to local culture and appropriate to students' contexts poses a challenge in learning. Teachers often rely solely on textbooks, which do not always reflect the local culture of the students. For example, the Merdeka Curriculum books published by the Curriculum and Book Center do not include the local culture from the Seluma region. Tay et al. (2024) reveal that the use of comics has the potential to positively impact the development of students' Attitudes, Skills, Concepts, and Processes in line with the curriculum framework.

The absence of local cultural integration in textbooks leads to a lack of connection between teaching materials and students' everyday lives (Wicaksono, 2014). According to Rosa et al. (2021), local culture has great potential to engage students and deepen their understanding because they are more familiar with the cultural context. Ulah et al. (2024) state that the lack of local cultural stories also removes the opportunity for students to learn about and appreciate regional cultural heritage. Therefore, the development of media based on local culture, such as that from the Serawai tribe in Seluma Regency, is crucial for creating contextual and meaningful learning experiences.

Although the potential of comics as a learning medium is significant, the development of comics based on local cultures such as Sekujang remains very limited. The dominance of foreign comics, particularly Japanese Manga, has led to stagnation in the development of local comics (Junid & Yamato, 2019). Moreover, the lack of promotion and support for local comics has also hindered their growth. According to Zhang et al. (2024) many educational materials prioritise general or foreign cultures, while local cultures are often overlooked. Therefore, this research aims to develop Sekujang culture-based comic media that can be used as an enjoyable and effective learning tool for primary school students.

This research aims to develop Sekujang culture-based comic media that can be used to introduce local culture to primary school students. By integrating elements of folklore, traditions, and cultural values of Sekujang into a comic format, it is hoped that an engaging, educational, and easily understood learning medium can be created for children. Furthermore, this research is also expected to contribute to efforts in preserving and promoting local culture through modern media that is relevant to contemporary developments.

The impact of using Sekujang culture-based comics is expected to be felt in several aspects. First, students will be more interested and motivated to learn about local culture,

thereby increasing their understanding and appreciation of Sekujang cultural heritage. Second, through engaging visualisations and narratives, students can more easily understand and internalise the moral and social values embedded in the culture. Third, the use of comics is also expected to develop students' visual literacy skills while enriching their knowledge of Indonesia's cultural diversity. Thus, this research not only aims to preserve local culture but also to create a more meaningful and enjoyable learning experience for students.

METHOD

This research will use the R&D (Research and Development) method. According to Sugiyono (2020), the R&D method is used to conduct research, design, production, and testing the validity of the resulting product. Meanwhile, Winarni (2018) explains that research & development (R&D) is a series of processes or steps aimed at developing new products or improving existing products to ensure they are accountable. This research employs a Research and Development (R&D) approach utilizing the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) to develop comic media based on Sekujang culture for elementary school students. The ADDIE model, initially introduced by Branch (2009) serves as a systematic instructional design framework renowned for its effectiveness in creating structured and efficient learning systems. Branch's work offers a detailed and comprehensive guide for each phase of the model, ensuring a methodical and well-organized process in developing educational materials. By adhering to this model, this study aims to produce comic media that not only aligns with specific learning objectives but also resonates with the cultural context of the target audience, thereby enhancing its relevance and effectiveness. Furthermore, Kurnia et al. (2019) emphasize the versatility of the ADDIE model, highlighting its adaptability and applicability across various types of product development, including the creation of innovative learning media. This flexibility underscores the suitability of the ADDIE model for this research, as it allows for iterative refinement and customization to meet the unique needs of the intended users.

Respondents involved in the research were 50 students. The instruments used in this study included a needs analysis questionnaire to identify student and teacher requirements, a validation sheet assessed by design and material experts to evaluate the comics' quality, an observation sheet to analyze student interactions with the comics, interviews with teachers and students for deeper insights, and a cognitive aspect test to measure students' understanding of Sekujang culture. From the 25 multiple-choice questions tested for validity, only 20 met the criteria and were used in the study, achieving a reliability score of 0.838, indicating high consistency in measuring student learning outcomes.

Data collected from various instruments will be analyzed using quantitative and qualitative approaches, as follows: (1) Quantitative Analysis, Data from validation sheets and cognitive aspect tests will be analyzed using descriptive statistics to determine the level of student response to comic media and the extent to which their understanding of Sekujang culture has increased after using the media. (2) Qualitative Analysis is used to analyze data from interviews and observations, to gain deeper insights into the responses of students and teachers' experiences in using comic media, as well as the benefits felt in introducing Sekujang culture.

The process of developing Sekujang culture-based comic media involves using the PaintTool SAI application to draw illustrations, add narration, and dialogue, and the Adobe Illustrator application to layout the comics. In the validity test, the researcher involved two material validators and two design validators. By involving these two types of validators, the researcher can ensure that the developed instrument has good validity before being used in further research.

The media that had been deemed feasible by the validators proceeded to the response stage, where students and teachers, as users of the comic media, provided their feedback. To assess students' and teachers' responses to the comic media, data were collected using The respondents in this trial involved two classes, each consisting of 25 students and 2 teachers as research subjects after they had used the learning media. The conversion of average score intervals into criteria for comic media assessment can be seen in Table 1.

Table 1. Conversion of average score intervals into criteria for comic media assessment

| Quantitative Score Range | Empirical Score Range | | Criteria |
	(Content Validation Expert)	(Media Validation Expert)	
$X_i + 1,8\ Sbi$	$X > 51$	$X > 47.6$	Highly Feasible
$X_i + 0,6\ SBi < X \le X_i + 1,8\ Sbi$	$42 < X \le 51$	$39.20 < X \le 47.6$	Feasible
$X_i - 0,6\ SBi < X \le X_i + 0,6\ Sbi$	$33 < X \le 42$	$30.80 < X \le 39.20$	Fairly Feasible
$X_i - 1,8\ SBi < X \le X_i - 0,6\ Sbi$	$24 < X \le 33$	$22.4 < X \le 30.80$	Less Feasible
$X \le (X_i - 1,8\ SBi)$	$X \le 24$	$< X \le 22.4$	Highly Unfeasible

The next stage in the development process was product effectiveness testing to determine whether the learning media was effective in the learning process. This study employed a one-group pretest-posttest design, which is a type of quasi-experimental research. In this design, a single group of participants is observed before and after the implementation of the treatment. The purpose is to measure the effect of the intervention by comparing the students' performance before (pretest) and after (posttest) the use of the Sekujang-based comic media. The experimental design is presented in Table 2.

Tabel 2. Experimental design

Group	Pretest	Treatment	Posttest
Experimental	O_1	Sekujang-based Comic Media	O_2

Explanation:
O1 : Data from the pretest in the experimental class
O2 : Data from the posttest in the experimental class

The data analysis stage was carried out by analyzing the test results, which consisted of 20 multiple-choice questions. The normality test of the research data was conducted using the Shapiro-Wilk test through SPSS Statistics 25 for Windows to ensure data distribution. In addition, a homogeneity test was also performed to examine the equality of variances between groups. After all prerequisite tests were met, the analysis proceeded

with an paired t-test to assess the difference in product effectiveness between the treatment group and the control group.

Student learning outcome data were obtained through pretests and posttests. The test results served as the basis for determining the improvement in students' understanding before and after the learning process. The analysis of this improvement was conducted using the normalized gain (N-Gain) method. Data calculations followed the formula by Hake (2002) as follows:

$$G = \frac{T_2 - T_1}{I_S - T_1} \tag{1}$$

Explanation:
G : Gain score
T1 : Pretest score
T2 : Posttest score
I_S : Maximum possible score for pretest and posttest

The Gain score was calculated for each student, and the average score was then determined. The obtained Gain values were interpreted based on Hake's classification (2002), as shown in Table 3.

Table 3. Gain score classification

Interval	Classification
(g) ≥ 0,70	High
0,69 ≥ (g) ≥ 0,30	Medium
(g) < 0,29	Low

The analysis of the comic media's effectiveness was conducted by examining all data obtained from the pretest and posttest. The process began with a normality test to determine the appropriate statistical analysis, followed by t-tests to compare student learning outcomes before and after using the comic media. Additionally, the N-Gain test was used to measure the level of improvement in students' understanding of Sekujang culture after engaging with the comic-based learning materials. All data analysis was performed using SPSS software version 25.

RESULTS AND DISCUSSION

Analysis stage

The needs analysis was conducted to identify the requirements of both students and teachers regarding teaching materials. A survey was carried out by distributing questionnaires to students and conducting interviews with first-grade teachers at SDN 5 Kota Bengkulu. The results of the analysis indicate that Indonesian Language learning is perceived as less engaging and often boring by students. Teachers also acknowledge that creativity in using teaching materials, including comic media, is still limited. Local culture in Seluma Regency, such as Sekujang culture, has not been widely integrated into Indonesian Language lessons. Additionally, students often struggle to understand characters in fictional stories, and the teaching materials currently used fail to optimally stimulate students' learning interest.

Design stage

The design phase begins with developing teaching materials in the form of stories and dialogues that integrate Sekujang culture, reflecting local values. The applications used in the comic media creation process are PaintTool SAI and Adobe Illustrator. The media format is a printed comic using A4-sized paper, adjusted to be easy to use and appealing to students. The product design process involves several key steps: (a) the creation of teaching materials with Sekujang cultural content, (b) selecting an appropriate comic format, (c) creating the initial design, and (d) finalizing the design before testing.

The characteristics of this comic media include illustrations that depict Sekujang cultural activities, such as traditional ceremonies, folk games, or typical local community activities, designed with engaging visuals and bright colors to attract students' attention. The dialogues and narration in the comic are written in simple language appropriate for first-grade students, with a focus on Indonesian Language learning. The media also includes tasks that guide students to understand the story and connect it to their daily experiences. Through this approach, the comic media serves not only as a learning aid but also as a tool to introduce Sekujang culture to elementary school students. The appearance of the revised results can be seen in Figure 1.
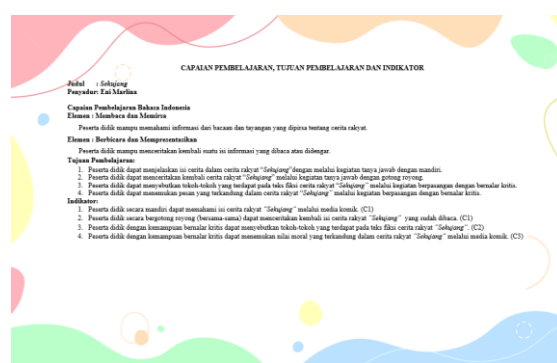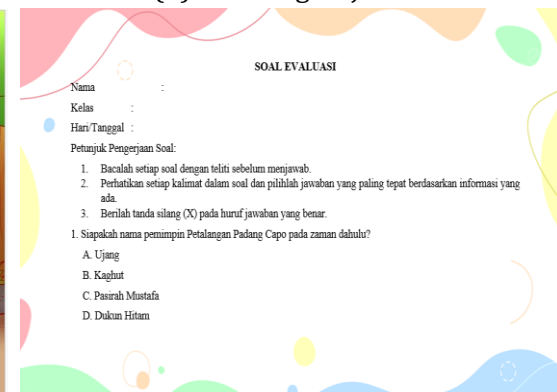

(a) Comic Cover Title   (b) Learning Objectives

(b) Comic Content   (d) assessment

Fig. 1. Sekujang Comic

The revision process for the comic media was carried out to ensure that the product meets the validity criteria and is suitable to be used as Sekujang culture-based comic media. These revisions were made based on feedback and suggestions from material and design experts. After the validation process was completed, several parts of the product were

improved according to the recommendations of the validators, both in terms of content and design.

Development stage

The development steps of the media are carried out systematically through several stages. First, a learning achievement analysis is conducted to identify core and basic competencies in the curriculum that require comic media support. The next step is to formulate the learning objectives, design achievement indicators, and compile relevant teaching materials. This analysis also includes an evaluation of the availability and usability of existing teaching materials, ensuring that the developed comic media meets the criteria of being engaging, relevant, and effective in supporting learning. Research by Ariffiando and Susanti (2024) shows the potential of locally contextualized learning media in enhancing cultural awareness among elementary school students.

The designed comic media is expected to help students achieve the desired competencies in a more engaging and enjoyable manner. Other stages, such as media design validation, are carried out to ensure the quality of the product. By following these steps, the Sekujang culture-based comic media is created with the goal of providing a more meaningful learning experience for students while introducing and preserving local culture. It is hoped that this will increase students' interest in learning Indonesian and help them better understand the learning material.

Once the media was developed and validated, the implementation stage was carried out in a real classroom setting. The comic media was tested with first-grade students at SDN 5 Kota Bengkulu, where 25 students participated. The implementation process included a guided reading session, classroom discussions, and individual exercises designed to measure the students' engagement and comprehension of Sekujang culture through the comic. Teachers also played an active role in facilitating learning activities, observing students' responses, and providing feedback on the usability and effectiveness of the media. The product validation process involves four experts, consisting of two experts in the content field and two experts in the design field. The results of the material validation can be seen in Table 4. The results of the design validation can be seen in Table 5.

Based on Table 4, which presents the results of content expert validation, the quality of the comic-based learning media has significantly improved from Stage 1 to Stage 2. In Stage 1, the media was rated as fairly feasible, with total scores of 37 and 39 from two validators. However, in Stage 2, the scores increased to 55 and 58, categorizing it as highly feasible. The relevance of the material to competency standards improved, particularly in terms of content depth and its alignment with students' real-life experiences. The accuracy of content presentation also showed enhancement, especially in language simplicity, connection to daily life, and the inclusion of practice exercises. Furthermore, the media became more effective in stimulating students' curiosity, fostering discussions, and encouraging engagement in the learning process. Thus, the comic-based learning media underwent significant improvements and became more suitable as an instructional tool.

<p style="text-align:center">Table 4. Results of material validation</p>

Indicator	Descriptor	Stage 1		Stage 2	
		V1	V2	V1	V2
Content Relevance of Comic Media	Relevance of Material to Competency Standards and Basic Competency in Comic Learning Media	3	3	3	4
	The breadth of the material aligns with Competency Standards and Basic Competency	3	3	4	4
	The depth of the material is in accordance with Competency Standards and Basic Competency	2	2	4	4
Accuracy of Material in Comic Media	The material is presented in a simple and clear manner, making it easy for 1st-grade elementary students to understand.	3	3	4	4
	Examples are adapted to the comic format to support student comprehension.	3	3	4	4
	The material is connected to real-life situations or experiences relevant to students' daily lives.	2	2	4	4
	The text in the comic encourages students to learn the Indonesian language.	3	3	4	4
	The comic story learning material includes practice exercises.	2	3	3	4
The comic media contains relevant material	The presentation of material in the comic learning material uses references that support the teaching content.	2	3	3	4
	The relationship between the material in the comic learning material is consistent with the fictional story.	3	3	4	4
	The reading text presented in the media is fictional.	2	2	4	4
The comic media can encourage students' curiosity	The material presented in the comic sparks students' curiosity.	3	3	4	4
	The material in the comic contributes to students' prior knowledge.	2	2	4	4
	The material in the comic learning resource engages students in the learning process.	2	2	3	3
	The content presented in the comic media encourages students to discuss with their groupmates.	2	2	3	3
	Total Score	37	39	55	58

Note: V = Validator

Based on Table 5, the validation results of the Sekujang culture-based comic media design show a quality improvement from Stage 1 to Stage 2. In Stage 1, the media was categorized as fairly feasible, with a score of 35 from both validators, whereas in Stage 2, the score increased to 53 and 55, categorizing it as highly feasible. Significant improvements were observed in the cover and content design aspects, including more balanced font usage, harmonious color schemes, and a more attractive layout. Additionally, readability and clarity of illustrations also improved, making the media more effective in stimulating students' interest in learning. The integration of Sekujang cultural elements in the comic became more accurate and relevant. Thus, these design enhancements have made the comic media more effective as a learning resource. According to the criteria proposed by Retnawati, (2016) this media is classified as highly valid and is recommended for use in the learning process.

Table 5. Results of design validation

Indicator	Descriptor	Stage 1		Stage 2	
		V1	V2	V1	V2
Size of Media	Relevance of Comic Media Design	3	3	4	4
	The paper size is appropriate for the comic media.	3	3	4	4
	The font size of the title in the comic media is more prominent than the author's name.	3	3	4	4
Cover Design	The use of font combinations is not excessive in the Sekujang-based cultural comic.	2	2	4	4
	The layout design of the comic cover is attractive.	3	3	4	4
	The color elements are harmonious in the layout of the Sekujang-based cultural comic.	2	2	4	4
	The color of the title contrasts with the background of the comic media.	2	3	3	4
Content Design of Media	The Sekujang-based comic media presentation can stimulate students' interest in learning.	2	2	3	4
	The comic media is easy to read and clearly visible.	3	2	4	4
	The comic media accurately reflects the Sekujang culture.	2	2	4	4
	The separation between paragraphs in the comic teaching material is clear.	2	2	4	4
	The illustrations for the content are creative and dynamic.	3	3	4	4
	The printed fields in the Sekujang-based comic are clearly defined.	2	2	4	3
	The comic media uses operational verbs.	3	3	3	4
	Total Score	35	35	53	55

Note: V = Validator

The field trial involved two teachers and was conducted to explore their responses to the Sekujang culture-based comic media. The data on teacher responses from the field trial can be seen in Table 6.

Table 6. Teacher response results

No.	Indicator	Total Score	
		Teacher I	Teacher II
1	Attractiveness of Sekujang Culture-Based Comic Media	14	15
2	Language of Sekujang Culture-Based Comic Media	10	10
3	Content of Sekujang Culture-Based Comic Media	10	10
4	Ease of Use of Sekujang Culture-Based Comic Media	17	18
5	Relevance of Material in Sekujang Culture-Based Comic Media	15	16
6	Alignment of Sekujang Local Culture Material with Student Characteristics	14	14
	Total Score	80	83

Based on Table 6, the scores obtained for each indicator, as evaluated by the first-grade teachers, show that the Sekujang culture-based comic media is highly feasible. The total score given by Teacher I was 80, while Teacher II assigned a slightly higher score of 83, both falling into the "highly feasible" category. These results indicate that the media is considered attractive, easy to use, and relevant to students' characteristics, with consistent evaluations across various aspects, including language, content, and cultural relevance.

This trial involved respondents from two classes, with each class comprising 25 students. During the activity, students showed great interest in the comic media. This field trial aimed to gather students' feedback on the strengths and weaknesses of the Sekujang culture-based comic media. The data on student responses from the field trial can be seen in Table 7.

Table 7. Student response results

No.	Indicator	Average Score
1	Attractiveness of Sekujang Culture-Based Comic Media	4.56
2	Ease of Use of Sekujang Culture-Based Comic Media	3.45
3	Ease of Understanding the Story Content	3.75
4	Story Information	3
	Total Score	14,76

Based on Table 7, the average score for each indicator from 50 respondents can be observed. The response results indicate a very positive evaluation, as reflected in the total score of 14.76, which falls into the "highly feasible" category. The highest score was given for the attractiveness of the Sekujang culture-based comic media (4.56), followed by the ease of understanding the story content (3.75), ease of use (3.45), and story information (3.00). These results suggest that the comic media is engaging and effective as a learning resource for students.

The evaluation phase focused on assessing the effectiveness of the comic media in improving students' learning outcomes. Subject for this evaluation phase in one group consists of 25 students. Data collection was conducted through pretests and posttests to measure students' understanding before and after using the media. The results were analyzed using normality tests, t-tests, and the N-Gain test to determine the level of improvement in students' comprehension of Sekujang culture. The data analysis was performed using SPSS version 25, ensuring accuracy and reliability. The findings from this evaluation provided valuable insights for further refining the comic media and optimizing its use as a culturally relevant learning resource in elementary education. The results of the paired samples t-test analysis on the student learning outcome test data in detail can be seen in Table 8.

Table 8. Results of the paired samples t-test

Pair	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Pretest - Posttest	-25.20000	8.71780	14.453	24	0.000

The significance value 0.000 < 0.05, the alternative hypothesis (*H*a) is accepted. It can be concluded that This indicates that there is a difference in the average student learning outcomes before and after using the Sekujang-based comic media. Therefore, it can be concluded that the use of Sekujang-based comic media has a significant effect on students' learning outcomes. A summary of the students' learning outcomes is presented in Table 9.

Table 9. Summary of pretest and posttest learning outcomes

Class	Average Score		Gain	Criteria
	Pretest	Postest		
Experiment	50.00	75.20	0.522	Medium

Based on the data in Table 9, the average pretest score for the experimental class, the average pretest score was 50.00, which increased significantly to 75.20 in the posttest. Based on these results, the gain score was 0.522, which falls into the "Medium" category. These results indicate that the improvement in learning outcomes in the experimental class was high. The study conducted by Ariffiando et al. (2024) shows that culture-based or multicultural learning media can serve as an effective literacy tool for promoting multicultural education among elementary school student. In line with this, the research by Ahliana et al. (2025) shows that the use of teaching materials in the form of books with attractive designs can also significantly enhance learning outcomes. Both findings highlight that engaging learning media, whether in the form of comics or well-designed books, play an important role in improving the effectiveness of learning. The experimental class had a larger increase in learning outcomes compared to the control class, which did not use the comic media. This highlights the effectiveness of the comic media in enhancing students' understanding of the subject, especially in introducing local culture and increasing their interest in learning. The research by Susanti et al. (2023) shows that the use of teaching materials in the form of books with attractive designs can also significantly enhance learning outcomes.

CONCLUSION

Based on the research and development findings, this study concludes that the Sekujang culture-based comic media was successfully developed, assessed for feasibility, and proven effective in enhancing students' cognitive learning outcomes in Bahasa Indonesia. The development process involved curriculum analysis, needs assessment of teachers and students, preparation of teaching materials, format selection, and final product completion. Validation results showed significant quality improvement from Stage 1 to Stage 2. In the initial stage, the material validation scores were 37 and 39 from two validators, categorized as "fairly feasible," which increased to 55 and 58 in Stage 2, categorized as "very feasible." Similarly, the design validation scores improved from 35 in Stage 1 to 53 and 55 in Stage 2, also categorized as "very feasible." Effectiveness testing using an paired t-test revealed a significance value of 0.000, indicating that the Sekujang culture-based comic media significantly improved students' cognitive learning outcomes. The experimental class achieved a gain score of 0.3756 (categorized as "moderate"), while the control class only reached 0.1686 (categorized as "low"). Thus, the comic media proved effective as a contextual and engaging learning tool, particularly in Bahasa Indonesia

instruction. The implication of this research is the need to develop other culture-based learning media to enrich the variety of locally relevant educational tools.

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