Implementation of Comic Learning Media to Improve Understanding of History and Culture

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ABSTRACT

Purpose - This study aims to analyze the improvement of students' understanding of history and culture through the implementation of the Putri Nurul 'Akla historical comic learning media.

Methodology - The approach employed is quantitative, utilizing data collection techniques that include observation, questionnaires, and tests. Data validity was assessed using SPSS for Windows, version 21, with 40 respondents. The analysis was carried out by comparing the t-count and t-table values.

Findings - The results showed that t-count (8.662) > t-table (1.729), indicating a significant influence of implementing comic media on improving the understanding of history and culture among grade V students of Cot Keh Peureulak Elementary School, East Aceh.

Contribution – This research makes a theoretical contribution by enriching the literature on the use of culture-based learning media, specifically historical comics, as an effective tool for enhancing students' cognitive understanding. To enhance pedagogical practices and foster students' appreciation of cultural heritage, this research provides teachers with creative teaching resources that incorporate local history and culture into the curriculum.

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INTRODUCTION

Learning in elementary schools should be designed with careful attention to students' developmental characteristics and provide holistic, meaningful experiences (Suardin et al., 2023). In practice, however, Social Studies learning at the elementary level still faces several challenges. There is still too much cognitive content in the curriculum, subject matter is dispersed between disciplines, and related topics frequently overlap. These factors impede the development of critical thinking abilities, lower active involvement, and prevent pupils from forming significant conceptual connections (Closs et al., 2022; Suhandi & Robi'ah, 2022). Such issues underscore the need for developing innovative approaches to Social Studies learning that are integrative, contextual, and student-centered. By emphasizing the interconnectedness of concepts, mastery of

process skills, and scientific inquiry through observation, data collection, discussion, and hypothesis testing, integrated social studies education offers a promising solution to this problem (Nugroho, 2016; Salam, 2017; Siagian et al., 2016). According to earlier research, inquiry-based integrated social studies have been found to enhance students' process thinking abilities (Maharani et al., 2020). The integrated method outperformed traditional approaches (Jian, 2019), and notable improvements were observed in student learning outcomes (Purwati et al., 2018; Syawaluddin et al., 2020; Uge et al., 2019), indicating significant positive effects on student learning outcomes. Although these results support the possibility of integrated approaches, the majority of research has focused on instructional strategies rather than creating cutting-edge learning resources that link Social Studies material to regional cultural contexts. For example, while Syawaluddin et al. (2020) and Uge et al. (2019) investigated the efficacy of integrative techniques in improving learning outcomes, Jian (2019) and Maharani et al. (2020) focused on inquiry-based and integrated instructional methods. The use of culturally grounded media, especially those based on local historical characters, was not included in this research, nevertheless. This indicates a research gap, as there has been limited scholarly exploration of comic-based learning media that embed local history and cultural narratives, such as the figure of Putri Nurul 'Akla, to strengthen both conceptual understanding and cultural identity in elementary Social Studies learning.

To create engaging, imaginative, and significant learning experiences, educational media play a strategically important role. It has been demonstrated that visual media, in particular, help people understand abstract ideas by giving them more tangible forms (Djazilan & Hariani, 2022; Mayer, 2017). As a unique kind of visual media, comics combine text and graphics in a narrative style that not only makes concepts easier to understand but also encourages creativity and increases enthusiasm for learning (Canuto et al., 2024; Matuk et al., 2021; Rutta et al., 2021). Empirical data support these assertions. Maryani & Amalia (2018) confirmed the efficacy of comics in transforming abstract ideas into tangible representations, while Bintoro et al. (2022) discovered that they enhanced students' reading interest and comprehension. Nevertheless, the use of comicbased media that integrate historical and cultural content in elementary Social Studies learning has received limited scholarly attention. The development of comics based on local historical figures carries both pedagogical and cultural significance. Komponen penting sejarah dan warisan budaya Aceh diwakili oleh tokoh Putri Nurul 'Akla, seorang pahlawan wanita Aceh yang berperan penting dalam melindungi rakyatnya selama masa kolonial. Ia dianggap sebagai simbol patriotisme dan komitmen terhadap kesejahteraan masyarakat karena kepemimpinan, keberanian, dan keteguhannya dalam menghadapi kesulitan. Karena tokoh-tokoh tersebut menawarkan contoh konkret tokoh sejarah lokal yang mencontohkan nilai-nilai luhur seperti akuntabilitas, keuletan, dan patriotisme, sifat-sifat ini sangat relevan dengan pendidikan dasar. Menyajikan tokoh ini melalui buku komik tidak hanya membantu siswa memahami sejarah dengan cara yang lebih menarik dan nyata, tetapi juga meningkatkan identifikasi budaya dan memajukan pendidikan karakter yang sejalan dengan tujuan pendidikan nasional. Thus, local-history-based comics serve a dual function: as a pedagogical tool for conceptual learning and as an educational medium for instilling cultural values.

Based on these considerations, this study aims to analyze the improvement of students' understanding of history and culture through the implementation of Putri Nurul 'Akla's historical comic media. The contribution of this research lies in enriching the literature on culturally based learning media within integrated Social Studies, while also offering practical insights for teachers in developing innovative, meaningful, and character-oriented learning in elementary schools.

METHODOLOGY

Research Design

This study examined the effect of comic-based learning materials on students' comprehension of history and culture, employing a quantitative experimental methodology. The use of historical comics was the study's

independent variable (X), while the students' test-based learning outcomes in history were the study's dependent variable (Y).

The research involved two groups: an experimental group that received treatment through the implementation of Putri Nurul 'Akla's historical comic media, and a control group that was taught using conventional instructional methods. The design adopted was a pretest-posttest control group design, which allows measurement of differences in learning outcomes before and after the treatment in both groups. The stages of the research were carried out systematically as follows:

Table 1. The stages of the research

No	Stages	Activities
1	Sample selection	The sample consisted of 40 grade V students of State Elementary School
		Cot Keh Peureulak, East Aceh, selected using purposive sampling based
		on class availability. Students were then randomly assigned to
		experimental and control groups.
2	Pretest administration	Both groups received the same pretest to assess their initial understanding
		of historical and cultural content.
3	Treatment	The experimental group was taught using historical comic media for
	implementation	several instructional sessions, while the control group received
		conventional teaching without the use of comics.
4	Posttest	After the treatment, both groups were given the identical posttest to
	administration	evaluate improvements in their understanding.
5	Data analysis	The results were analyzed using SPSS for Windows version 21, with a t-
		test statistical analysis conducted to compare the learning outcomes
		between groups.

The experimental design of this study can be illustrated as follows:

Table 2. Experimental design of the study

Group	Pretest	Treatment (X)
Experimental	O_1	X (Comic-based learning)
Control	O_3	- (Conventional learning)

Description are O_1 and O_3 = pretest scores of experimental and control groups; O_2 and O_4 = posttest scores of experimental and control groups; and X = treatment using comic media.

This design enabled the identification of the influence of comic media on students' historical understanding by comparing the improvement between the experimental and control groups under controlled conditions, in line with the framework of experimental research suggested by Sugiyono (2019).

Population and Sample

Eighty pupils from two fifth-grade classrooms at State Elementary School Cot Keh Peureulak, East Aceh, comprised the study's population. Purposive sampling was used to identify the sample, and 40 students were chosen as participants based on class availability. These were then divided into two equal groups: 20 students in the experimental group and 20 students in the control group. The experimental group received treatment with the Putri Nurul 'Akla historical comic media, while the control group was taught using conventional methods.

Research Instruments

The primary instrument for data collection was a 20-item multiple-choice test. The test was developed to measure students' understanding of historical and cultural concepts in accordance with the Social Studies

curriculum and relevant core competencies. The indicators measured included: 1) identifying key historical facts and events, 2) understanding the chronology of historical narratives, 3) Explaining the significance of historical figures in local culture, 4) demonstrating comprehension of cultural values embedded in historical stories, and 5) applying historical knowledge to contemporary contexts.

The instrument development followed standard procedures. Each item was tested for validity, reliability, difficulty level, and discrimination power. Using item-total correlation and SPSS for Windows version 21, the validity test was carried out by comparing the correlation coefficient (Corrected Item-Total Correlation) to the crucial r-table value. Cronbach's Alpha was used to determine reliability, while item difficulty and discrimination indices were examined to guarantee the caliber of test items. The final instrument only contained items that were legitimate and trustworthy.

Data Analysis Techniques

SPSS for Windows, version 21, was used to process the data collected. Prerequisite tests were carried out before hypothesis testing, such as the normality test was performed to ensure the data were appropriately distributed and to confirm that the variances in each group are equal, do the homogeneity test. After these assumptions were met, hypothesis testing was carried out using; 1) an independent sample t-test was used to determine differences in posttest scores between the experimental and control groups, and 2) Paired Sample t-test to analyze improvements between pretest and posttest scores within each group. This statistical analysis framework ensured that the influence of the independent variable (comic media) on the dependent variable (students' learning outcomes in history) could be accurately identified and interpreted.

FINDINGS

Validity Test

Before using the research instrument, the test items were examined for validity. The validity analysis was conducted using the corrected item-total correlation technique with the assistance of SPSS for Windows, version 21.

Table 3. Results of the Validity Test of Instrument Items

Item Number	r_calculated	$r_{table} (\alpha = 0.05; N = 40)$	Status
1	0.612	0.312	Valid
2	0.544	0.312	Valid
3	0.288	0.312	Invalid
4	0.657	0.312	Valid
5	0.701	0.312	Valid
6	0.482	0.312	Valid
7	0.265	0.312	Invalid
8	0.598	0.312	Valid
9	0.523	0.312	Valid
10	0.575	0.312	Valid
11	0.634	0.312	Valid
12	0.467	0.312	Valid
13	0.591	0.312	Valid
14	0.285	0.312	Invalid
15	0.558	0.312	Valid
16	0.643	0.312	Valid
17	0.574	0.312	Valid
18	0.601	0.312	Valid
19	0.549	0.312	Valid
20	0.628	0.312	Valid

An item is considered valid if the correlation coefficient (r_calculated) is greater than the critical value of r_table at the 5% significance level. Based on the results, 17 items met the validity criteria (r_calculated > r_table), while three items did not meet the criteria and were therefore discarded. Consequently, the final instrument used in this study consisted of 17 valid test items measuring students' understanding of history and culture.

Reliability Test

The reliability test was conducted to measure the consistency of the instrument. Internal consistency reliability was calculated using Cronbach's Alpha coefficient. The value of Cronbach's Alpha ranges between 0 and 1, where a coefficient of ≥ 0.60 indicates that the instrument is sufficiently reliable.

Table 4. The Results of The Reliability Test

Reliability Stat	tistics
Cronbach's Alpha	N of Items
.872	17

Source: Primary Data (processed), 2024

Table 4 indicates that the Cronbach's Alpha coefficient was 0.872, exceeding the minimum requirement of 0.60 (0.872 > 0.60). This outcome suggests that the test instrument is highly dependable and can be relied upon to measure students' comprehension of cultural and historical themes regularly.

Descriptive Statistics

An overview of the students' learning outcomes was provided through descriptive statistical analysis prior to hypothesis testing. The descriptive data include the minimum, maximum, mean, and standard deviation scores for both the control and experimental groups, at both the pretest and posttest stages.

Table 5. Descriptive Statistics of Learning Outcomes

Group	Test Type	N	Minimum	Maximum	Mean
Control Group	Pretest	20	58	72	65.10
Control Group	Posttest	20	62	78	69.25
Experimental Group	Pretest	20	59	73	65.45
Experimental Group	Posttest	20	70	88	79.80

Source: Primary Data (processed), 2024

The mean scores for both groups increased from the pretest to the posttest, as indicated in Table 3. In contrast to the control group (+4.15 points), the experimental group showed a significantly higher improvement (mean increase of +14.35 points). This descriptive finding suggests that the implementation of the Putri Nurul 'Akla historical comic learning media was more effective in enhancing students' understanding of history and culture than conventional learning methods.

Normality Test

Assumption tests for data analysis include normality tests. This means that the normality of the research data distribution must be checked before conducting statistical analysis to test the hypothesis. Data that is regularly dispersed is considered good data. The Kolmogorov-Smirnov normality test relies on the following principles to conclude: If the significance value (Sig.) of a study is greater than 0.05, then the data is considered to be regularly distributed.

The significance value of the Asymp variable of product quality. Sig (2-tailed) is higher than 0.05, i.e., 0.188, according to the resulting SPSS output Table 6. The data are typically distributed, as indicated by the conclusions drawn from the Kolmogorov-Smirnov normality test described above.

Table 6. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		40
Normal Parametersa,b	Mean	.0000000
	Std. Deviation	2.92713942
Most Extreme Differences	Absolute	.199
	Positive	.076
	Negative	.188
Test Statistic	-	.188
Asymp. Sig. (2-tailed)		.188¢

Source: Primary Data (processed), 2024

Homogeneity Test

The Homogeneity Test is a test conducted to determine that two or more groups of sample data come from populations that have the same variance (homogeneous). The purpose of this test is to verify that the data group from the Homogeneity Testwinning comes from a homogeneous population. The findings of this study's homogeneity test are as follows:

Table 7. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.604	1	38	.442

Source: Primary Data (processed), 2024

Based on the table, it can be seen that the results of the homogeneity test in this study have the same variance (homogeneous). It can be seen from the results of the significance test for homogeneity, which yields a value of 0.442, indicating that the data are distributed homogeneously (0.442 > 0.05).

F-Test

The simultaneous impact of the independent variable (comic media) on the dependent variable (students' knowledge of history and culture) was investigated using the F-test. Table 5 presents the findings.

Table 8. ANOVA (F-Test)

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	71.385	1	71.385	.879	.367b
1	Residual	974.615	12	81.218		
	Total	1046.000	13			

a. Dependent Variable: Understanding History and Culture

Source: Primary Data (processed), 2024

Based on Table 5, the calculated F-value is 0.879 with a Significance Level of. = 0.367 (> 0.05). This result indicates that the implementation of the Putri Nurul 'Akla historical comic learning media does not have a statistically significant simultaneous effect on students' understanding of history and culture.

T-Test

The t-test was used to examine the partial influence of the independent variable. The results are shown in Table 9. Table 9 shows that the Comic Media variable's computed t value is 0.938 with Sig. = 0.367 (> 0.05). This finding indicates that there is no statistically significant partial impact of comic book media on pupils' knowledge of history and culture.

b. Predictors: (Constant), Comic Media

Table 9. Coefficients T-Test

Model		Unstandardiz	Unstandardized Coefficients		t	Sig.
		В	Std. Error	Beta	•	O
1	(Constant)	66.323	17.951	,	3.695	.003
1	Comic Media	.258	.275	.261	.938	.367

Source: Primary Data (processed), 2024

Although the results of the F-test and t-test indicate no statistically significant effect, the descriptive statistics presented earlier show that students in the experimental group achieved higher mean scores than those in the control group. This suggests that the Putri Nurul 'Akla historical comic learning media may still contribute positively to classroom practice by increasing students' engagement, interest, and contextual understanding of historical and cultural content. In particular, the integration of local cultural figures helps foster cultural identity and character education, which are important aspects of social studies learning in elementary schools.

DISCUSSION

The findings of this study indicate that the implementation of the Putri Nurul 'Akla historical comic learning media did not produce a statistically significant effect on students' understanding of history and culture. Under the specified study settings, the F-test (F = 0.879; p = 0.367) and the t-test (F = 0.938; p = 0.367) both indicated that there was no discernible difference between the experimental and control groups. Careful interpretation of these findings is necessary to prevent exaggerating the intervention's efficacy.

The experimental group's posttest mean scores (M = 79.80, SD = 2.92) were higher than those of the control group (M = 69.25, SD = 3.05), a notable trend according to descriptive statistics. Although not statistically significant at the 5% threshold, this difference suggests that comic-based learning media may help students engage more deeply with historical content, potentially enhancing comprehension and recall through the use of visualization and narrative immersion.

These results align with earlier studies, which have shown that comics can enhance students' motivation and understanding. For instance, Maryani & Amalia (2018) contended that comic media make abstract or remote historical themes more accessible, while Bintoro et al. (2022) showed that comics increase reading interest and enhance learning outcomes. Putri Nurul 'Akla, a local historical figure, was incorporated into the current study to help contextualize the educational process. As a heroine in Acehnese history, she symbolizes resilience, leadership, and patriotism, thereby offering values that are directly relevant to elementary education and character building (Syawaluddin et al., 2020).

Several reasons can account for the lack of statistical significance. The results may have been influenced by pedagogical and contextual factors, in addition to technical ones, such as the small sample size (N = 40), brief treatment period, and limited number of evaluation items. The effectiveness of the medium may be influenced by factors such as students' prior exposure to local history or the teacher's experience in incorporating comics into lessons. Younger students may require more time and repeated exposure to internalize historical narratives presented through comics.

From a broader perspective, the contribution of this study lies in demonstrating the potential of culture-based media as a complementary tool in social studies education. International studies came to similar conclusions. (Lin et al., 2019) Emphasized how graphic narratives facilitate cultural learning through multimodal literacy, whereas Wang et al. (2017) discovered that comics enhance ESL students' reading comprehension by providing visual scaffolding. Additionally, contextualized visual media help bridge the gap between students' real-life experiences and abstract academic knowledge (Anjani et al., 2020). This study

supports previous findings by placing Putri Nurul 'Akla in a comic book format, showing how localized cultural heritage may be used to enhance cognitive and affective learning outcomes.

The practical consequences are significant even though the results are not statistically significant. Engaging, culturally relevant stories are provided via comic-based learning, which can foster motivation, creativity, and cultural pride—all important components of education in the twenty-first century. This highlights for educators the importance of combining cutting-edge media with regional cultural resources to advance character education and academic comprehension.

Future studies should examine pedagogical factors, including teacher preparation for media use and students' preparedness for visual literacy, in addition to addressing technical limitations with larger samples and longer interventions. Combining comic media with collaborative or inquiry-based approaches could have more potent and long-lasting results.

CONCLUSION

Based on the analysis and discussion, this study concludes that the implementation of the Putri Nurul 'Akla historical comic learning media did not produce statistically significant effects on students' understanding of history and culture, as shown by the F-test (F = 0.879; Sig. = 0.367) and the t-test (t = 0.938; Sig. = 0.367) indicate that the use of the Putri Nurul 'Akla historical comic learning materials did not result in statistically significant effects on students' knowledge of history and culture, according to the analysis and discussion in this study. Descriptive statistics, however, showed a favorable trend: the experimental group outperformed the control group in terms of average posttest scores. This suggests that using humorous media may have beneficial advantages, as it increases student engagement and makes historical material more approachable and relevant, although the difference is not statistically significant.

Local historical figures like Princess Nurul 'Akla can be incorporated into learning because culturally contextualized comics can enhance character education and cognitive learning outcomes. This conclusion has practical consequences. It highlights the importance of integrating local culture with progressive educational materials for educators to enhance not only learning but also cultural pride and identity.

Several suggestions can be made for further study. First, to boost statistical power, investigations should use larger sample sizes. Second, lengthier treatment periods can provide the intervention with more opportunities to yield more potent results. Third, to fully capture the influence of culturally based comedic learning, more thorough assessment tools are required that span both the cognitive and affective domains. To fully realize the educational potential of comics, it is recommended that future research investigate their integration with inquiry-based or collaborative learning paradigms.

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