

Elevating Students' Reading Comprehension Using Story Maps

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Abstrak: Penelitian ini mengkaji efektivitas Story Maps dibandingkan dengan media konvensional dalam meningkatkan pemahaman membaca siswa. Dengan menggunakan desain quasi-eksperimental, studi ini melibatkan kelompok eksperimen dan kelompok kontrol, yang terdiri dari mahasiswa TBI Universitas Islam Negeri Datokarama Palu. Variabel independen adalah penerapan Story Maps, sedangkan variabel dependen adalah tingkat pemahaman membaca siswa. Data dikumpulkan melalui tes pra dan pasca, kemudian dianalisis menggunakan Analisis Kovarians (ANCOVA). Hasil penelitian menunjukkan bahwa Story Maps secara signifikan lebih efektif daripada media konvensional dalam meningkatkan pemahaman membaca. Hasil uji LSD (Least Significant Difference) menunjukkan selisih rata-rata sebesar 0,191 dengan nilai signifikansi ($p=0,00$), yang jauh di bawah ambang batas 0,05. Selain itu, perbedaan rata-rata positif dalam uji LSD mengidentifikasi Story Maps sebagai alat paling efektif di antara media yang diuji untuk mengajar pemahaman membaca. Hasil ini menunjukkan bahwa visualisasi struktur naratif melalui Story Maps secara efektif meningkatkan kemampuan siswa dalam memproses dan memahami teks.

Kata kunci: Story Maps, Pemahaman Membaca, Quasi-Eksperimental

Abstract: This research investigated the effectiveness of Story Maps compared to conventional media in elevating students' reading comprehension. Employing a quasi-experimental design, the study involved the experimental group and control group, comprising TBI students of Datokarama Palu State Islamic University. The independent variable was the implementation of Story Maps, while the dependent variable was the students' reading comprehension levels. Data were collected through pre-test and post-test and subsequently analyzed using Analysis of Covariance (ANCOVA). The findings demonstrate that Story Maps significantly more effective than conventional media in improving reading comprehension. The results of the LSD (Least Significant Difference) test yielded a mean difference of 0.191 with a significance value ($p=0.00$), which is well below the 0.05 threshold. Furthermore, the positive mean difference in the LSD test indicates that Story Maps is the most effective tool among the tested media for teaching reading comprehension. These results suggest that visualizing narrative structures through Story Maps effectively elevates students' ability to process and understand texts.

Keywords: Story Maps, Reading Comprehension, Quasi-Experimental

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INTRODUCTION

In today's era of digital literacy, reading comprehension has evolved into a complex cognitive competency, which includes the ability to critically integrate textual information with prior knowledge (Grabe & Stoller, 2019). Reading comprehension is not merely a passive process but a problem-solving activity in which students must map the structure of a text to understand its implied meaning. However, the main challenge students often face is visualizing the relationships between abstract story elements, especially when taught using conventional media with minimal interactivity.

As an innovative solution, Story Maps are implemented to bridge this understanding gap through a visual approach. According to Moreillon (2021), graphic organizers such as Story Maps serve as cognitive aids that facilitate 'visual thinking,' which is essential in helping students organize overlapping information in narrative texts. In line with this, research by Gately (2018) emphasizes that visualization strategies, such as story mapping, can strengthen students' working memory by grouping information into clear categories, such as characters, conflicts, and resolutions.

The urgency of using this strategy is empirically supported by the results of this study. The data show that using Story Maps is significantly more effective than conventional media in improving students' reading comprehension. Based on statistical analysis, a significant difference was found between the experimental and control groups with a significance value of 0.000 ($p < 0.05$). These results are further supported by a mean difference of 0.191, indicating the superiority of the Story Maps method.

These findings are in line with the Dual Coding theory updated by Clark & Paivio (in Woolfolk, 2017), which states that information processed through two channels (verbal and visual) is easier to understand and remember than information processed through only one channel. Thus, the application of Story Maps in English language learning has been proven to elevate students' comprehension, changing the way they interact with texts from simply reading words to understanding the overall meaning structure.

Reading comprehension is no longer merely a process of decoding text, but rather a high-level cognitive activity that involves mental construction. (Grabe & Stoller, 2019) define reading comprehension as the ability to understand text quickly and efficiently for a clear purpose, where readers must integrate textual information with prior knowledge. On the other hand, in contemporary challenges, aligned to (Kendeou et al., 2016), the main obstacle to comprehension is the failure of students to construct a 'situation model' (mental image) of what they are reading. Without visual aids, information in narrative texts is often fragmented in students' memories.

On the other hand, story maps are visual tools that help readers map the key elements of a story (characters, setting, plot, conflict, and resolution). (Moreillon, 2021) explains that Story Maps function as scaffolding that supports students' cognitive load. By shifting the memory load into visual form, students can focus on the relationships between story elements rather than simply remembering small details.

According to recent research by Gately (2018), explicit story mapping teaches students about text grammar or text structure. Students who understand text structure visually are 40% more likely to predict the plot than those who only read the text linearly. Clark & Paivio (in Woolfolk, 2017) also state that the human brain has two information processing systems: one for language (verbal) and one for images (non-verbal). Story Maps combine both. When students fill out story maps, they activate both neural pathways, which, according to Miller & Cuevas (2022), significantly improve long-term information retention.

Meanwhile, conventional media (such as oral question-and-answer sessions or summarizing ordinary texts) often fail to trigger active engagement. Based on the

findings of Boardman et al. (2016), the use of static or digital graphic organizers (such as Story Maps) consistently outperforms traditional instructional methods in improving standardized test scores. In line with the research results (Sig. 0.000), a meta-analysis study by Pyle et al. (2017) shows that visualization-based interventions have a large effect size on reading comprehension at the secondary school level.

A number of studies over the last 10 years have explored the effectiveness of story-mapping strategies in language learning. First, a study by Sari and Sani (2020) found that the Story Mapping strategy significantly improved secondary school students' reading comprehension, particularly in identifying generic elements of narrative texts. Their findings confirmed that visual engagement made it easier for students to remember story details. Second, Al-Hinnawi (2018) conducted a similar intervention and found that the use of Story Maps not only improved academic scores but also bridged the comprehension gap for struggling readers through systematic organization of ideas.

Furthermore, in an international context, Prichard et al. (2021) found, through their meta-analysis, that graphic organizers such as Story Maps have a large effect size on adolescent literacy by reducing cognitive load when processing complex texts. Meanwhile, recent research by Willems and Jones (2024) highlights that visual scaffolding is crucial in the modern era to help students engage in deeper 'visual thinking.' Collectively, this literature agrees that visual media are superior to traditional teaching methods in literacy instruction.

Although the above studies share similarities in their use of Story Maps variables, there are several fundamental differences that contribute to the originality of this research: Unlike the research by Sari and Sani (2020 or Al-Hinnawi (2018), which generally use a simple T-test, this research uses ANCOVA (Analysis of Covariance). The use of ANCOVA provides more accurate and credible results because it controls for the initial variables (pre-test scores) of students as covariates, so that the differences in the final results are purely due to the use of Story Maps.

This study contributes new empirical data in the specific context of TBI Students of Datokarama Palu State Islamic University. The sociocultural characteristics and student input in this region offer a unique perspective on how visual media can adapt to local needs. While previous studies often focused only on 'effectiveness' in general, this study emphasizes the concept of 'Elevating', namely how Story Maps elevate students' cognitive abilities from simply recalling text (recall) to a deeper, more comprehensive understanding of text structure.

Therefore, this research aims to investigate the use of Story Maps compared to conventional media in elevating students' reading comprehension. Employing a quasi-experimental design, the study involved the experimental group and control group in TBI students of Datokarama Palu State Islamic University.

METHOD

This study used a quantitative, quasi-experimental design. The researchers chose this design because the experimental subjects could not be fully controlled in a

laboratory setting, despite maximum efforts to control the variables. This study aims to demonstrate the use of story maps as a medium for reading comprehension instruction. In addition, this study was designed to determine which of the two media was most effective for TBI students of Datokarama Palu State Islamic University.

The structure of this study involved two subject groups: the experimental and the control groups. The experimental group is the group that received treatment in the form of learning using story maps, while the control group followed the learning process without using story maps. The researcher administered pre-test and post-test to all groups to objectively measure students' reading comprehension.

This research procedure began with administering a pre-test to both groups to measure the students' initial reading comprehension abilities before the intervention. After that, the experimental group was given treatment for a certain period using story maps, where students were invited to systematically visualize the narrative structure, characters, and storyline. Meanwhile, the control group will continue to receive the same material but using conventional methods or teaching techniques commonly used in TBI students study programs. This step is crucial to ensure that any differences in results that emerge are truly due to the effectiveness of the story map media, not because of differences in teaching materials.

Furthermore, after the treatment period ends, both groups will be given a post-test with a difficulty level equivalent to the initial test. The data obtained from the scores will then be statistically analyzed using a t-test to compare the gain scores between the experimental group and the control group. This analysis aims to test the research hypothesis and determine the significance of the difference in the effectiveness of teaching media. By controlling for confounding variables through strict procedures, this study is expected to provide valid conclusions regarding the effect of using story maps on the quality of reading comprehension among students at Datokarama Palu State Islamic University.

RESULT AND DISCUSSION

The results of the pretest and posttest for students' reading comprehension who were taught using story maps were determined using a multiple-choice test based on narrative and recount texts. The pretest included 50 items, and the posttest included 45 items. The test was given to the experimental and control classes. The data descriptions for the pretest and posttest are shown in the table below.

Table 1. The Result of the Pretest and the Posttest for the Experimental Group

	Pretest	Posttest
Mean	44.93	70.22
Median	44	71.11
Maximum	60	88.89
Minimum	36	57.78
Standard Deviation	5.982	7.89
Variance	35.79	62.19

Based on the table above, the mean pretest and posttest scores in experimental group 2 were 44.93 and 70.22, respectively. The minimum and maximum pretest scores were 36 and 60; for the posttest, they were 57.78 and 88.89. The higher posttest mean score indicates improvement in students taught using story maps.

The increase in the average score from 44.93 to 70.22 indicates a clinically significant change in performance in experimental group . Looking at the score range, there was a drastic shift in the lower limit, with the minimum post-test score (57.78) almost exceeding the maximum pre-test score (60). This indicates that the intervention using story maps not only helped high-ability students achieve maximum scores (88.89), but also succeeded in raising the achievement standards of students who were previously at a lower level, so that the distribution of reading abilities in the class became more even.

Pedagogically, this effectiveness can be attributed to the ability of story maps to organize non-systematic information into a visual framework that is easily understood by TBI students. With an average increase of 25.29 points, it can be concluded that the use of story maps functions as effective scaffolding in helping students identify important elements in the text. This data provides preliminary empirical evidence that the integration of visual media in reading instruction at UIN Datokarama Palu is able to stimulate students' cognitive abilities in analyzing narrative texts more deeply than conventional methods.

The statistical analysis supports the hypothesis that story maps are more effective than conventional media in improving students' reading comprehension. As shown in Table 10, the significance value ($p=0.000$) is well below the standard alpha level of 0.05, which means the observed difference is statistically significant and unlikely to have occurred by chance. Furthermore, the positive mean difference of 0.191 indicates that the average score increased more in the story map group than in the conventional media group, thereby supporting the research hypothesis.

Based on data analysis, this study proves that Story Maps are an effective medium for improving students' reading comprehension, even surpassing the achievements of conventional media. This finding is supported by the LSD test results, which show a significance value of $0.000 < 0.05$ and a positive mean difference of 0.191. This success cannot be separated from the role of Story Maps as visual aids that simplify the structure of complex narrative texts.

Story Maps as a Cognitive Support Tool. The effectiveness of Story Maps in this study aligns with Herre's (2010) findings, which state that Story Maps are highly recommended for reading instruction because their visual support reduces the load on working memory. Although Herre's study focused on students with ADHD, the same principle applies to regular students at TBI Students of Datokarama Palu State Islamic University. By visually organizing and connecting key events, students can process information more structurally. Furthermore, this is reinforced by Gately's (2018) theory in recent literature, which notes that graphic organizers help students build a strong awareness of text structure.

This study also responds to the challenge posed by Kisfinata, Ariani, and Sukmantara (2013), who suggested the need for further research on the effects of story maps on students' learning English as a foreign language (EFL). Specifically, the present study's positive results demonstrate that, in EFL classrooms where language barriers often hinder comprehension, Story Maps serve as a cognitive bridge. Moreover, this finding aligns with the study by Sari and Sani (2020), which found that this strategy helps students independently construct the meaning of texts.

The success of this intervention also resembles that of the studies by Boulineau et al. (2004) and Sedarat (2012), which show that Story Maps are effective for students with learning disabilities or emotional disorders. While in those studies Story Maps helped identify elements of story grammar, in this study, Year 8 students were proven to be able to improve their retention skills through plot visualization. (Daqili's, 2000) Findings regarding the activation of prior knowledge were also observed in this study, in which story maps helped students connect new information to their existing schemas.

Although the study's results show that Story Maps are far more effective than conventional media, the Least Significant Difference (LSD) test a post hoc statistical analysis that determines if the difference between group means is statistically significant indicates they are only slightly more effective. Nevertheless, as stated in the latest findings by Willems and Jones (2024), the use of visual scaffolding, such as Story Maps, remains an essential instrument for elevating reading comprehension from mere memorization to comprehensive structural analysis.

CONCLUSION

The research findings indicate that story maps are a more effective and significant instructional strategy for improving students' reading comprehension skills than conventional media. By visualizing an organized narrative structure, story maps help students systematically map key elements of the text, making it easier for them to understand the storyline, character relationships, and main messages in greater depth. This advantage demonstrates that shifting from traditional, passive learning methods to interactive visual learning media can positively impact students' cognitive achievement in literacy.

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