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The Effect of HOTS on Eleventh Grade Students' Reading Comprehension in Narrative Text at SMK Swasta HKBP Pematangsiantar

Lonatasya Sevari Nainggolan[1✉], Basar Lolo Siahaan[2], Mungkap Mangapul Siahaan[3]
Universitas HKBP Nommensen Pematangsiantar
Email: lonatasyanainggolan@gmail.com[1✉]

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh strategi Higher Order Thinking Skills (HOTS) terhadap kemampuan siswa dalam membaca pemahaman teks naratif di kelas sebelas SMK Swasta HKBP Pematangsiantar. Penelitian ini menggunakan desain kuasi-eksperimental untuk menentukan penelitian ini. Sampel penelitian ini diambil dari dua kelas yang terdiri dari 60 siswa, 30 siswa di kelas eksperimen di kelas XI TKRO-2 dan 30 siswa di kelas kontrol di kelas XI TKRO-1. Peneliti menemukan bahwa total nilai rata-rata pre-test di kel as eksperimen adalah 60,33 dan post-test adalah 82,16. Total skor rata-rata pre-test di kelas kontrol adalah 57 dan post-test adalah 67,66. Setelah menghitung data dari semua skor, peneliti menemukan nilai t-test adalah 6,684. Kemudian peneliti menghitung dengan skor pada t-tabel dengan menggunakan signifikansi 0,05 dan diperoleh nilai 1,672. Jadi, peneliti menemukan bahwa t-test lebih tinggi dari t-tabel (6,684 > 1,672). Dapat disimpulkan bahwa pengaruh strategi HOTS terhadap pemahaman membaca teks naratif siswa kelas sebelas di SMK Swasta HKBP Pematangsiantar adalah afektif.

Kata Kunci: *HOTS, Strategi Pembelajaran, Pemahaman Membaca*

Abstract

The objective of this research is to determine the effect of Higher Order Thinking Skills (HOTS) strategy on students' ability to read comprehension of narrative text in the eleventh grade of SMK Swasta HKBP Pematangsiantar. This study used a quasi-experimental design to determine this research. The sample of this research is taken from two classes consists of 60 students, 30 students in the experimental class at XI TKRO-2 and 30 students in the control class at XI TKRO-1. The researcher found that the total of the mean score of the pre-test in the experimental class is 60.33 and the post-test is 82.16. The total of mean score of pre-test in control class is 57 and post-test is 67.66. After calculating the data from all scores, the researcher found the t-test score is 6.684. Then the researcher calculated with the score on the t-table using a significance of 0.05 and obtained a value of 1.672. So, the researcher found that the t-test is higher than the t-table (6.684>1.672). It can be conclude that the effect of HOTS strategy on students' reading comprehension of narrative text in eleventh grade at SMK Swasta HKBP Pematangsiantar is affective.

Keywords: *HOTS, Learning Strategy, Reading Comprehension*

INTRODUCTION

English is widely regarded as a global language, playing a significant role as a second or foreign language in numerous non-native countries, including Indonesia. In this nation, English is included in the educational curriculum and used in professional contexts; however, it is rarely spoken in everyday interactions, Daar (2020). The global diffusion of English has been influenced by a range of historical, economic, and cultural factors (Crystal, 2003 cited in Yuwita & Ambarwati, 2023). The educational framework in Indonesia aims to develop four key language skills: listening, speaking, reading, and writing. Among these, reading is particularly important as it helps improve vocabulary and supports the acquisition of other language skills (Anderson, 2004 in Allo, 2022).

Reading comprehension is critical for academic success, as it enables students to extract meaning, analyze concepts, and make inferences from written texts (Olson & Diller, 1982 in Nappu et al., 2022). However, many students in Indonesia struggle with reading comprehension due to limited vocabulary and a lack of experience in critical analysis, negatively impacting their overall academic performance. This issue is notably present at SMK Swasta HKBP Pematangsiantar, where observations made during an internship indicated that eleventh-grade students had difficulty achieving the Minimum Achievement Standard (KKM) of 75 in English. Their struggles with identifying main ideas, drawing conclusions, and understanding narrative texts are further complicated by the absence of effective teaching strategies that emphasize higher-order cognitive skills.

To address these challenges, the researcher proposes the integration of Higher Order Thinking Skills (HOTS) into reading comprehension instruction. HOTS involves the abilities to analyze, evaluate, and generate information beyond basic understanding, thereby fostering critical and logical thinking and encouraging deeper engagement with texts (Maimun, 2018; Sitorus et al., 2021). Previous studies, including those by Sitorus et al. (2021) and Allo (2022), have shown that implementing HOTS strategies can significantly improve students' reading comprehension by promoting critical analysis and interaction with reading materials. Despite these positive findings, the use of HOTS strategies in narrative text comprehension among Indonesian students, particularly at the high school level, remains limited.

This research aims to evaluate the impact of HOTS on reading comprehension among eleventh-grade students at SMK Swasta HKBP Pematangsiantar, focusing specifically on narrative texts from the legend genre and emphasizing inferential comprehension. By targeting inferential skills, this study seeks to enhance students' abilities to draw conclusions and engage critically with texts, thereby tackling the identified difficulties in reading comprehension and aligning with educational standards. The anticipated results of this research are expected to provide insights into the effectiveness of HOTS in improving reading comprehension and to suggest ways to integrate higher-order thinking strategies into English language education.

Relevant Theories

a. Concept of HOTS

The original taxonomy classified cognitive skills into six distinct levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. In 2001, Anderson and Krathwohl updated this framework, renaming certain categories and promoting synthesis to the highest tier, which led to a revised hierarchy consisting of remembering, understanding, applying, analyzing, evaluating, and creating. Lower-order thinking skills (LOTS) focus on memorization, whereas higher-order thinking skills (HOTS) include understanding and applying knowledge. The upper three tiers of Bloom's taxonomy, commonly depicted as a pyramid, are analysis, synthesis, and evaluation. All levels within this taxonomy require critical thinking skills.

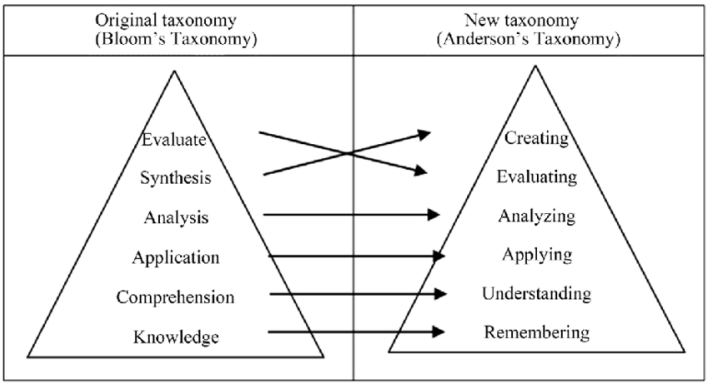


Figure 2. 1 Changes in Bloom's Taxonomic Level of Cognition by Anderson and Krathwohl

As noted by Anderson and Krathwohl (2001) in Allo (2022), Higher Order Thinking Skills (HOTS) comprise three key components that have been updated from Bloom's taxonomy:

a. Analyzing

   This refers to the capability to deconstruct information into smaller segments to comprehend the structure and relationships among those segments, such as recognizing cause-and-effect relationships and identifying various components.

b. Evaluating

   This involves the ability to assess or make decisions based on established criteria and standards, which includes evaluating arguments, determining impacts, critiquing work, or selecting the most effective solution to a problem.

c. Creating

   The capability to produce original ideas, devise innovative solutions, and develop new products, such as designing a project, composing a narrative, or formulating a new hypothesis.

According to the description provided, the researcher concludes that Higher Order Thinking Skills (HOTS) are advanced cognitive abilities that involve the processes of analyzing, evaluating, and creating. Anderson and Krathwohl's (2001) cited in Febrina et al (2019), update to Bloom's taxonomy underscored the necessity of not just remembering and understanding information, but also analyzing, evaluating, and generating new knowledge. These HOTS elements not only require more intricate thinking but also foster critical and creative participation from students in their learning journeys. By enhancing HOTS, students gain the ability to not only comprehend the concepts taught but also apply them in practical situations, make better decisions, and come up with innovative

ideas. Developing these higher-order thinking skills is vital for tackling the increasingly complex and dynamic challenges present in education and daily life.

b. Advantages and Disadvantages of HOTS

According to Nugroho (2018) highlighted that when implemented effectively, HOTS learning can enhance students' enthusiasm, motivation, and determination. This approach fosters greater motivation among students and increases their desire to learn. Research shows that HOTS not only boosts student achievement but also cultivates a positive attitude towards learning, Ekasari & Hidayat (2021). Furthermore, HOTS learning helps develop and refine students' reasoning abilities, promoting a deeper comprehension of scientific concepts.

However, there are some drawbacks to incorporating HOTS in education. Firstly, students often lack sufficient theoretical references related to the issues being studied. Secondly, in multiple-choice assessments, it can be challenging to identify the correct answer due to the similarity of the options provided. Lastly, creating questions that meet HOTS standards can pose a significant challenge for educators.

Despite the considerable advantages of HOTS in enhancing students' critical thinking and motivation, the challenges associated with its implementation must be acknowledged. Issues such as insufficient theoretical references, difficulties in question formulation, and the similarity of answer choices in multiple-choice questions are obstacles that need to be addressed to ensure that HOTS can be applied more effectively and equitably across various educational contexts.

RESEARCH METHOD

This study adopted a quantitative methodology with a quasi-experimental research design to analyze the influence of Higher Order Thinking Skills (HOTS) on the reading comprehension of narrative texts among eleventh-grade students. Conducted at SMK Swasta HKBP Pematangsiantar during the 2024/2025 academic year, it focused on students in grade XI. The research population comprised 165 students from seven classes, with a purposive sample of 60 students selected: 30 from the experimental group (class XI TKRO-2) and 30 from the control group (class XI TKRO-1).

The study identified two main variables: the independent variable (HOTS) and the dependent variable (students' reading comprehension of narrative texts). Data were gathered through pre-tests and post-tests, each featuring 20 multiple-choice questions

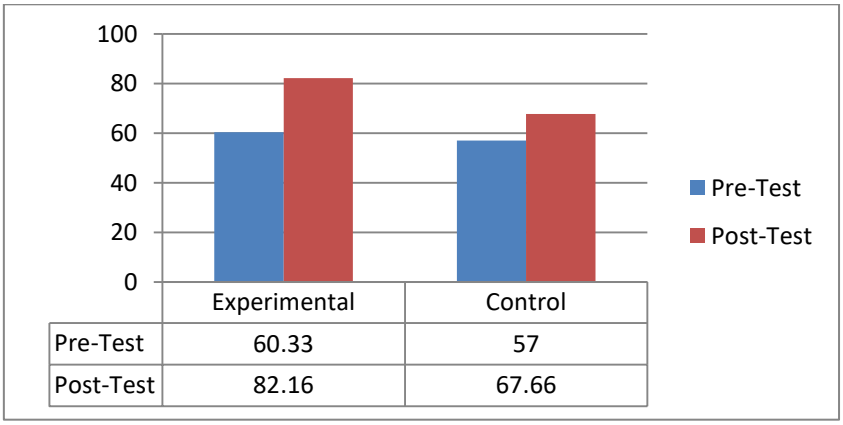
aimed at evaluating inferential comprehension of narrative texts. Both groups completed a pre-test to establish a baseline. During the treatment phase, the experimental group was taught using the HOTS approach, while the control group received conventional teaching. After the treatment, a post-test was administered to measure the effects of the intervention.

Data analysis involved calculating individual test scores, average scores, and standard deviations. A t-test was utilized to assess the statistical significance of any differences in reading comprehension results between the experimental and control groups.

RESULT AND DISCUSSION

Data Description

In this research, a quasi-experimental approach was utilized to assess the impact of the Higher Order Thinking Skills (HOTS) strategy on students' reading comprehension. The study included two groups: an experimental group (class XI TKRO-2) that received instruction using the HOTS strategy, and a control group (class XI TKRO-1) that was taught through traditional methods. Both groups underwent pre-tests, received a treatment, and completed post-tests. Each test comprised 20 multiple-choice questions, with students earning 5 points for each correct answer, leading to a maximum score of 100.



	Experimental	Control
Pre-Test	60.33	57
Post-Test	82.16	67.66

Figure 1. Improvement in Experimental and Control Class

For the experimental group, the average score on the pre-test was 60.33, with individual scores ranging from 20 to 80. Following the implementation of the HOTS strategy during the treatment phase, the average score on the post-test rose to 82.16, with scores varying from 65 to 100. This notable increase in scores suggests a positive effect of the HOTS strategy.

In contrast, the control group had a pre-test average score of 57, with scores ranging from 30 to 70. After applying conventional teaching methods, the post-test average score improved to 67.66, with scores between 50 and 80. Although there was an increase, it was not as significant as that observed in the experimental group.

Using the t-test formula to compare the means of both groups, a calculated t-value of 6.684 was found, exceeding the critical t-value of 1.672 at the 0.05 significance level. With 58 degrees of freedom (df), the analysis confirmed the statistical significance of the HOTS strategy on enhancing students' reading comprehension.

Research Findings

Based on the data analysis, the researcher determined that HOTS strategies have a significant effect on students' reading comprehension. The following are the research findings:

1. Experimental class
    - Pre-test mean score for the experimental class was 60,33.
    - Post-test mean score for the same class was 82,16.
    - In the pre-test, the experimental class's lowest score was 20, while its greatest score was 80.
    - In the post-test, the experimental class's lowest score was 65, and its highest score was 100.
    - The experimental class's overall mean variable (Ma) was 21,83.
2. Control class
    - In the pre-test, the control class's mean score was 57, while post-test mean score for the same sclass was 67,66.
    - In the pre-test, the control class's lowest score was 30, and its best score was 70.
    - In the post-test, the control class scored as low as 50 and as high as 80.
    - The total mean variable (Mb) derived from the control variable was 10,6.

Furthermore, the results of hypothesis testing show that the t-test (6.684) is greater than the t-table (1.672) at the 0.05 significance level. The Alternative Hypothesis (Ha) is accepted and the Null Hypothesis (Ho) is rejected.

Discussion

The purpose of this study was to evaluate the effect of the Higher Order Thinking Skills (HOTS) strategy on reading comprehension among eleventh-grade students at SMK Swasta HKBP Pematangsiantar. The research involved two classes: XI TKRO-2 was

designated as the experimental group, while XI TKRO-1 served as the control group. Both groups took the same pre-test and post-test, but the experimental group was taught using HOTS strategies following the pre-test, whereas the control group continued with traditional teaching methods without any special treatment.

The results indicated that students who learned through HOTS strategies outperformed their peers in the control group who were taught using conventional methods. This finding suggests a notable difference in reading comprehension between the pre-test and post-test scores when HOTS is utilized. The data showed that the experimental group had an average pre-test score of 60.33, which rose to 82.16 after the intervention, highlighting the effectiveness of the HOTS strategy in improving reading comprehension. In contrast, the control group recorded a pre-test average of 57 and a post-test score of 67.66, suggesting that conventional methods were less effective in enhancing students' reading skills. The analysis revealed a significant difference in test results, with a t-test value of 6.684, which surpassed the critical t-value of 1.672, confirming that the t-test result was greater than the t-table value.

In summary, the findings strongly suggest that integrating HOTS strategies into reading instruction can greatly enhance students' comprehension abilities. This emphasizes the necessity for educators to incorporate higher-order thinking skills into their lessons to foster improved learning outcomes, as evidenced by the increase in students' scores from pre-test to post-test. Ultimately, the researcher concluded that the implementation of HOTS strategies significantly influences students' reading comprehension.

CONCLUSION

From the data analysis, the researcher determined that the HOTS strategy significantly influences students' reading comprehension. This conclusion is substantiated by the data collected during the study. After applying the HOTS strategy in the experimental class, it became clear that this method effectively improved English instruction and positively impacted students' scores, especially in reading comprehension.

The analysis revealed a degree of freedom (df) of 58. The critical t-value at the 0.05 significance level for a two-tailed test was 1.672. The mean score for the experimental group (Ma) was recorded as 21.83, with a total standard deviation (da) of 4,274.2. In contrast, the control group had a mean score (Mb) of 10.6 and a standard deviation (db)

of 1,436.7. These findings demonstrate that the HOTS strategy produced a more significant effect than traditional teaching methods.

Furthermore, the t-test analysis reinforced this observed difference. The calculated t-test value of 6.684 exceeded the t-table value of 1.672 at the 0.05 significance level. As a result, the researcher rejected the null hypothesis (Ho) and accepted the alternative hypothesis (Ha). This confirms that the utilization of the HOTS strategy has a meaningful effect on the reading comprehension skills of eleventh-grade students at SMK Swasta HKBP Pematangsiantar.

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