



Effectiveness of English Teaching Materials Based on the HOTS Integrated Hypertext Model on Students' Learning Outcomes

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Abstract: An innovative approach to lesson planning incorporates the high order thinking skill (HOTS) model of learning with a strategy for identifying students' challenging words through hypertext. This study primarily evaluates the effectiveness of English language teaching materials utilising the hypertext integrated HOTS model on student learning outcomes. This study used a pre-test-posttest group design in its research technique, by involving 80 Class X pupils for the school year 2023/2024. Researchers utilised the snowball sampling approach to establish the necessary sample size. The students were assigned to Group A (experimental) and Group B (control). Subsequently, pupils take a pretest to identify any discrepancies between their knowledge levels. The research findings indicate that the observed T value is 8.313 and the significance value is below 0.05. Thus, it can be inferred that incorporating HOTS-based English teaching materials with the hypertext paradigm is effective in improving student learning results. This study is significant as it can enhance proficiency in the English language, particularly by emphasising the teacher's influence on the efficacy of HOTS-based English language teaching materials integrated with the hypertext model on student learning outcomes in English language acquisition.

Keywords: Integrated hypertext; learning outcomes; teaching materials.

Efektivitas Bahan Ajar Bahasa Inggris Berbasis HOTS terintegrasi Hypertext Model terhadap Hasil Belajar Siswa

Abstrak: Pendekatan inovatif dalam perencanaan pembelajaran menggabungkan model pembelajaran keterampilan berpikir tingkat tinggi (HOTS) dengan strategi mengidentifikasi kata-kata menantang siswa melalui hiperteks. Penelitian ini terutama mengevaluasi efektivitas bahan ajar bahasa Inggris dengan memanfaatkan model HOTS terintegrasi hypertext terhadap hasil belajar siswa. Penelitian ini menggunakan desain eksperimen dengan kelompok pre-test-posttest dengan melibatkan 80 siswa Kelas X tahun ajaran 2023/2024. Peneliti menggunakan teknik *snow balling* sampel untuk menentukan ukuran sampel yang diperlukan. Para siswa dibagi ke dalam Grup A (eksperimental) dan Grup B (kontrol). Selanjutnya, siswa melakukan tes awal untuk mengidentifikasi perbedaan antara tingkat pengetahuan mereka. Temuan penelitian menunjukkan bahwa nilai T teramati sebesar 8,313 dan nilai signifikansinya di bawah 0,05. Dengan demikian, dapat disimpulkan bahwa penggabungan bahan ajar bahasa Inggris berbasis HOTS dengan paradigma hypertext efektif dalam meningkatkan hasil belajar siswa. Penelitian ini penting karena dapat meningkatkan kemahiran berbahasa Inggris, khususnya dengan menekankan pengaruh guru terhadap keampuhan bahan ajar bahasa Inggris berbasis HOTS yang diintegrasikan dengan model hypertext terhadap hasil belajar siswa dalam perolehan bahasa Inggris.

Kata Kunci: Hyperteks model; hasil belajar; bahan ajar.

1. Introductions

Accuracy in both the application of teaching methods and the usage of learning media is crucial for the success of learning (Triyadi, 2015). One kind of instructional medium used by educators to disseminate course content is the module, which serves to both familiarise students with the subject matter and tailor their comprehension of it to specific learning objectives

(Mukhlis et al., 2020). Instructional modules are useful for improving students' grasp of course material since they are designed with students' needs mapping in mind, ensuring that each module's content is purposefully focused on achieving specific learning objectives (Magdalena et al., 2020). According to Mufidah (2023), should be well-organized, innovative, contain all necessary materials, have appropriate visual aids,

and use simple language. There is a need for more media-rich pedagogical resources, an increase in the incorporation of Hots elements into course content, and an increasing reliance on technological means in the creation of pedagogical goods (Munawaroh et al., 2023).

Naturally, it is critical to be innovative while creating educational materials so that students do not get bored with learning and so that learning is easier. An innovative approach to lesson planning incorporates the high order thinking skill (HOTS) model of learning with a strategy for identifying students' challenging words through hypertext. In a literature review on HOTS, According to Ananda et al. (2020) found that, when compared to traditional teaching materials, HOTS-based materials significantly improved student learning outcomes across the board for critical thinking, creativity, and evaluation.

Also, in other studies hyperetxt helped readers receive accurate information by directing them to relevant sources (Jose, 2021). Why? Because the data collected can cover a lot of ground, both in terms of knowledge-based cognitive components and metacognitive aspects of data acquisition and processing (Widyaningsih et al., 2020). This has sparked an interest among researchers in creating hypertext-based English instruction resources for use in high schools based on HOTS. In addition, this study is based on research recommendations from a previous study that examined the use of hypertext in the classroom and found that it improved students' knowledge of the English language (Munawaroh, 2019).

Multiple prior studies (Ananda et al., 2020; Munawaroh, 2019; Munawaroh et al., 2023; Rosyida, 2019) indicate a trend towards incorporating media in educational resources, integrating higher-order thinking skills (HOTS) in teaching content, and emphasising the necessity for students to possess advanced cognitive abilities to navigate the current era. The current research focuses on teaching materials that are based on the HOTS hypertext integration approach, unlike earlier studies. The main benefit of this research is that it gives teachers additional options when it comes to teaching English. Examining how well high school English classes use HOTS-based resources that use the hypertext model is the primary goal of this study. This study takes place in SMA Negeri 10 in the Pandeglang Regency. The research problem is formulated as follows: 1). Do English language teaching materials based on the HOTS integrated hypertext model improve English learning outcomes?

2. Research Method

This study employs quantitative technique. Quantitative research seeks to elucidate social processes by examining the relationship between the variables under investigation. The research methodology is referred to as positivistic since it adheres to the principles of positivism. This research employs a real experimental design. Quasi-trials closely resemble actual tests in all respects except for lacking comparisons that can be utilised to deduce treatment-induced changes, with random assignment being the sole exception. When randomization is not feasible in field studies due to logistical limitations, researchers often opt for 'unequal groups' as a valid research tool. Although actual experiments may not provide reliable and automatic replies to solve validity concerns, it is crucial that we confront these obstacles directly in such situations. When performing quasi-experimental research to demonstrate causal linkages, it is crucial to consider the impact of starting group differences (Dornyei & Griffee, 2010).

This study used a pre-test-posttest group design in its research technique. The researcher evaluated the validity and reliability of the instrument using SPSS before administering the pre and post test. This is achieved by analysing the Corrected Item total correlation score, which indicates the correlation between individual item scores and the overall item score. The students were assigned to Group A as the experimental group and Group B as the control group. Subsequently, pupils complete a pretest to identify any discrepancies among them. This experiment will entail interactions between two distinct groups: a control group and an experimental group. Researchers created English teaching materials based on the HOTS integrated hypertext model. The experimental group used these materials, while the control group did not. The experimental group will be treated using HOTS-based English teaching materials integrated with the hypertext model.

Table. 1 Shows the pretest and posttest research designs

Class	Pre-test	Treatment	Post-test
Control	Y1	-	Y2
Experimental	Y1	X	Y2

According to Table 1, the research design involved conducting pre and posttests, with the Y1 pre-test occurring before the learning process using integrated HOTS-based English teaching materials using the hypertext model in both

classes. Y2 includes the utilisation of HOTS-based English teaching resources combined with the hypertext model, and concludes with conducting a posttest for both groups. X is teaching a class that experiments with English language teaching materials using the HOTS integrated hypertext model. The study included a group of 80 Class X pupils for the school year 2023/2024. Researchers utilised the snowball sampling approach to establish the necessary sample size. Interviewing someone in a higher authority is referred to as "snowball sampling." Experts in a specific field, such as teachers, principals, or other highly skilled individuals, are considered superior (Creswell, 2014). Researchers utilise it to confirm the quantity of samples to collect, as previously said. After interviewing the English instructor at SMA Negeri 10 in the Pandeglang Regency, who suggested that classes X A and B would be more suitable for the research, the researcher decided which choice to select. The researcher determined that class X A would utilise HOTS-based English teaching materials integrated with the hypertext model, while class X B would just focus on learning through traditional means.

Two types of assessments are conducted on students to gather essential information. Students participated in lexical tests conducted by researchers as part of their coursework. The researcher guided the usage of HOTS-based English teaching materials along with the hypertext model to help develop mastery in their effective utilisation during the treatment. Students receive the learning outcomes test as their subsequent assignment following the pretest. The data was analysed using pre- and post-test results. Researchers consolidate test results into a single report upon completion.

3. Result and Discussions

This study primarily evaluates the effectiveness of English language teaching materials utilising the hypertext integrated HOTS model on student learning outcomes. Integrating technology into teaching methodologies has become increasingly essential. One innovative approach is the utilization of hypertext integrated with Higher Order Thinking Skills (HOTS) in English language teaching materials. This integration aims to enhance student engagement and improve learning outcomes by fostering critical thinking, creativity, and problem-solving skills. The paper details the results of descriptive statistical tests conducted on variable data.

Through the results of the pre-test and post-test conducted by the researcher, statistical

results can be seen in the experimental class using the hypertext integrated HOTS approach and in the control class using regular English books; the statistical descriptive results of the data show that there is an influence after treatment in the experimental class using hypertext integrated HOTS approach students' English results were much better than in the control class, the paired T-test proved this.

Table 2. Descriptive Statistics Class Experiment

Pair 1	Mean	N	Std. Deviation
Pretest	60.55	80	5.250
Posttest	82.50	80	13.563

The following results were derived from the data analysis conducted in this study: The researcher conducted a comparative analysis of English language teaching materials using the hypertext integrated HOTS posttest model after acquiring them. Studies indicate that using the hypertext integrated HOTS approach for English language teaching resources significantly affects student learning outcomes. This method significantly enhances students' acquisition of English. Both before and after treatment, there is a notable difference in the average test scores of class X A students. Class X A had an average score of 60.55 before the intervention and 82.50 after the intervention. Before treatment, the mean score was 55.40, however after treatment, it increased to 73.55. Thus, it can be inferred that employing English language teaching materials that incorporate the hypertext integrated HOTS model is more advantageous than traditional ways for teaching English.

Table 3. Descriptive Statistics Class Control

Pair 2	Mean	N	Std. Deviation
Pretest	55.40	80	7.489
Posttest	73.55	80	13.563

The t value is 7.313 and the significance level (Sig) is less than 0.05. The study found variations in student learning outcomes while employing HOTS English language teaching materials combined with hypertext models before and after the intervention. Critical thinking is the capacity to analyse information, articulate thoughts, justify viewpoints, make comparisons, draw inferences, assess arguments, and solve problems (Pramestika et al., 2020; Rati & Rediani, 2021).

Table 4. Paired Samples T Test

Mean	Std. Deviation	Std. Error	Mean	95% Confidence	t	df	Sig
			Interval of the Difference				
			Lower	Upper			
9.529	6.801	1.166	6.156	10.902	8.313	80	.000

Table 4 displays notable variations in students' English acquisition, as revealed by the paired t-test. There are differences in students' English learning results following the intervention employing English language teaching materials based on the students' HOTS integrated hypertext model.

The research results indicate notable disparities in student learning outcomes, evident through distinct changes in the average and spread of pre-test and post-test scores. To address the primary research question: Do English language teaching materials utilising the HOTS integrated hypertext approach enhance English learning results? Table 2 shows variations in student learning outcomes between the pre-test and post-test findings when English teaching materials based on the HOTS integrated hypertext paradigm were introduced. Utilising English language teaching materials following the HOTS integrated hypertext approach resulted in a decrease in average scores in the experimental group compared to post-test findings. Previous studies by (Andrajati et al., 2020; Purba et al., 2023) support the feasibility and effectiveness of HOTS-based integrated online teaching resources in enhancing students' high-level thinking skills.

To address the second study question on the impact of English teaching materials utilising the integrated HOTS hypertext model on students' English learning outcomes, we can examine the research results in table 4. The paired sample T test indicates a considerable impact on the results. Students' acquisition of the English language. Deficiencies in students' proficiency in the English language. Critical thinking is an individual's cognitive capacity to assert something confidently due to its foundation on logical rationales and compelling facts (Meilana et al., 2020). Students can utilise critical thinking abilities to analyse information sources, generate solutions, and foster relationships (Polat & Aydın, 2020). Critical thinking is a crucial learning outcome in education (Hart et al., 2021; Yu et al., 2021). Critical thinking skills are connected to pupils' capacity to address common challenges (Odebiyi & Odebiyi, 2021).

Teaching materials are informational resources utilised by educators to facilitate the learning process and attain educational goals. Teaching materials can serve as essential resources for student learning (Legendari & Raharjo, 2016). This study is significant since it has the potential to enhance English learning results, particularly by emphasising the crucial role of teachers in supplying instructional resources for English learning. This study aims to empower instructors to develop English language teaching resources using the HOTS approach, even when facing time constraints due to the English curriculum.

4. Conclusion

The study aims to assess the impact of HOTS-based English teaching materials combined with hypertext models on student learning outcomes, using research findings and conversations. Two research findings indicate disparities in English learning outcomes pre and post using English language teaching materials founded on the HOTS integrated hypertext model. Additionally, these materials have a significant influence on students' English learning outcomes. Evidence of this is demonstrated by the comparison of outcomes pre and post-test, along with the examination of Paired Sample T Test data.

The research findings indicate that English language teaching resources that utilise the HOTS-integrated hypertext paradigm substantially enhance English learning outcomes. In future research, other researchers will broaden the scope to encompass studying English language teaching materials using the HOTS integrated hypertext paradigm throughout all education levels in Indonesia, rather than solely concentrating on high schools or Islamic boarding schools.

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