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THE ROLE OF LEARNING INNOVATION HIGH ORDER THINKING SKILLS IN IMPROVING STUDENTS' ANALYTICAL ABILITIES IN PAI SUBJECTS AT ATHIRAH BONE ISLAMIC HIGH SCHOOL

PERAN INOVASI PEMBELAJARAN BERBASIS HIGH ORDER THINKING SKILLS (HOTS) DALAM MENINGKATKAN KEMAMPUAN ANALITIS SISWA PADA MATA PELAJARAN PAI DI SMA ISLAM ATHIRAH BONE

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ABSTRACT
This study explores the role of Higher Order Thinking Skills (HOTS) learning innovation in enhancing students' analytical abilities within the context of Islamic Religious Education (PAI) at Athirah Bone Islamic High School. In the era of 21st-century education, fostering higher-order thinking is crucial to developing students' critical, logical, and systematic thinking capacities. Employing a quantitative research design, data were collected through validated and reliable questionnaires. The findings reveal a consistently positive student response to the implementation of HOTS-based learning strategies, indicating that such approaches effectively support the development of analytical thinking. Furthermore, the study confirms a significant and positive relationship between HOTS learning innovation and students' analytical skills. These results underscore the importance of integrating HOTS-oriented methods in Islamic education to foster deeper understanding and higher cognitive engagement among students. The study also highlights the need for institutional support, including continuous professional development for teachers, the availability of relevant instructional media, and the creation of a learning environment that nurtures critical and analytical thinking. This research contributes to the growing body of evidence on the effectiveness of HOTS in educational practice and offers practical implications for curriculum development and pedagogical innovation in religious education settings.
Keywords: Learning Innovation, Higher Order Thinking Skills (HOTS), Analytical Skills, Islamic Religious Education (PAI), Islamic High School.

ABSTRAK
Penelitian ini mengeksplorasi peran inovasi pembelajaran berbasis Higher Order Thinking Skills (HOTS) dalam meningkatkan kemampuan analitis siswa pada mata pelajaran Pendidikan Agama Islam (PAI) di SMA Islam Athirah Bone. Di era pembelajaran abad ke-21, pengembangan keterampilan berpikir tingkat tinggi menjadi hal yang krusial untuk membentuk kemampuan berpikir kritis, logis, dan sistematis pada siswa. Dengan menggunakan pendekatan kuantitatif, data dikumpulkan melalui angket yang telah teruji validitas dan reliabilitasnya. Temuan penelitian menunjukkan bahwa siswa secara konsisten memberikan respons positif terhadap penerapan strategi pembelajaran berbasis HOTS, yang menunjukkan bahwa pendekatan ini efektif dalam mendukung pengembangan kemampuan berpikir analitis. Selain itu, penelitian ini mengkonfirmasi adanya hubungan yang signifikan dan positif antara inovasi pembelajaran HOTS dan kemampuan analitis siswa. Hasil ini menegaskan pentingnya integrasi metode pembelajaran berbasis HOTS dalam pendidikan agama Islam untuk mendorong pemahaman yang mendalam dan keterlibatan kognitif yang lebih tinggi. Penelitian ini juga menyoroti pentingnya dukungan institusional, termasuk pengembangan profesional berkelanjutan bagi guru, ketersediaan media pembelajaran yang relevan, serta penciptaan lingkungan belajar yang mendukung berpikir kritis dan analitis. Studi ini memberikan kontribusi terhadap penguatan bukti empiris mengenai efektivitas HOTS dalam praktik pendidikan, serta menawarkan implikasi praktis bagi pengembangan kurikulum dan inovasi pedagogis dalam konteks pendidikan agama.
Kata Kunci: Inovasi Pembelajaran, Higher Order Thinking Skills (HOTS), Kemampuan Analitis, Pendidikan Agama Islam (PAI), Sekolah Menengah Islam.

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1. INTRODUCTION

In this century, science continues to evolve in line with the demands of the times. Therefore, students are required to possess various skills. In 21st-century learning, the skills students need to possess include collaboration, critical thinking, creativity, skills, an understanding of various cultures, communication skills, and a commitment to lifelong learning. Of these skills, critical thinking is one of the most important for students to master. In modern education, higher order thinking skills, orHigher Order Thinking Skills(HOTS) is increasingly recognized as a crucial aspect of learning. HOTS involves thinking skills that go beyond memorizing information, namely analysis, evaluation, and creativity. These abilities are essential for preparing students to face the complex challenges of today's world. The Indonesian education curriculum now focuses on developing HOTS and ensuring that students not only master basic knowledge but also think critically and creatively in solving problems.

Learning objectives Higher Order Thinking Skills(HOTS) refers to cognitive thinking skills. According to Bloom's Taxonomy, there are three aspects that constitute higher-order thinking skills: analyzing (C4), evaluating (C5), and creating (C6). Learning across all areas of knowledge must be able to develop students' skills, namely critical thinking skills, problem-solving skills, and creative thinking skills, so that students' motivation and learning outcomes can significantly improve. Skills in critical thinking, creativity, communication, and collaboration are essential elements of 21st-century skills. To achieve these goals, higher-order thinking skills orHigher Order Thinking Skills(HOTS) must be emphasized in every learning process at every level of education. Higher-order thinking skills need to be developed in schools as fundamental skills for engaging in real-life situations.Higher Order Thinking Skills(HOTS) is a program developed by the Ministry of Education and Culture through the Directorate General of Teachers and Education Personnel (GTK) to improve the quality of learning.Higher Order Thinking Skills(HOTS) can be applied to all subjects with the aim of stimulating higher-order thinking skills.Higher Order Thinking Skills (HOTS) is an indicator of success in producing students who can solve problems in any given problem. Measurement is needed to determine students' abilities in higher-order thinking. To do this, teachers use various books and exam series as assessment tools to assess students' learning outcomes in terms of knowledge. Questions can be multiple-choice, short answer, complex multiple-choice, and explanatory.

The implementation of HOTS in the educational curriculum also aims to overcome the limitations of traditional teaching methods, which often prioritize memorization and basic understanding. Conventional learning methods are often insufficient to prepare students for challenges beyond school. Therefore, innovations in learning that integrate HOTS seek to introduce a more dynamic and interactive approach. This approach involves the use of methods that facilitate student engagement in deeper and more reflective thinking processes, so that students develop skills relevant to real-world needs. Furthermore, the implementation of HOTS in education in Indonesia encompasses various strategies and techniques that support the development of higher-order thinking skills. This includes the integration of educational technology, which allows students to access a wider range of learning resources and interact with the material more intensively. Educational technology also facilitates more personalized learning, allowing students to work at their own pace and receive immediate feedback. Thus, HOTS serves to address the shortcomings of traditional teaching methods and better prepare students to face the challenges of the outside world.

ImplementationHigher Order Thinking Skills(HOTS) at the senior high school (SMA) level is becoming increasingly important in the educational context. In high school, HOTS not only serves to improve the quality of learning, but also to prepare students for future academic and professional challenges. High school education aims to equip students with the ability to analyze, evaluate, and create solutions to complex problems they encounter. Based on the results of the initial interview with the Islamic Education teacher:

HOTS-based literacy and numeracy approach has become the main focus to improve the quality of learning and student readiness to face higher academic challenges. Literacy is closely related to numeracy and the answers are not only in the form of multiple choice, but also include matching questions, which are applied in SMP and SMA. In learning, both during UTS and at the end of the semester, students are trained to work on HOTS literacy and numeracy questions. This is also part of the preparation for competitions such as OSN and KSN, so that students' thinking is not only focused on theory, but also on a wider context. HOTS-based learning has been applied since 2019, and in the recruitment of teachers, the importance of the ability to read and understand questions related to KSN, OSN, or questions that are not usually seen by many people is also emphasized.[1]

However, there is limited research specifically examining the role of HOTS learning innovations in improving students' analytical skills in Islamic Religious Education (PAI), particularly at the high school level. Analytical skills are crucial for students to deeply understand Islamic values and connect religious concepts to the realities of life. Furthermore, most previous research has used a qualitative or descriptive approach, thus failing to provide an objective quantitative picture of the relationship between learning innovations and students' analytical skills.

2. METHODS

This research is quantitative. Quantitative research methods are a type of research whose specifications (process) from the beginning to the development of the research design are systematic, planned, and clearly structured. Furthermore, quantitative research requires a significant use of numbers, from data collection and interpretation, to the description of the results, and finally to the conclusion. Quantitative research is best presented with images, tables, or graphs.

The type of research used in this study is descriptive quantitative research with a causal approach. This study aims to determine the effect of Higher Order Thinking Skills (HOTS) learning innovation on students' analytical skills in Islamic Religious Education (PAI) at SMA Islam Athirah Bone. Quantitative research was used because the data collected are in numerical form, and analyzed using statistical methods. Meanwhile, the causal approach was chosen because this study aims to determine the cause-and-effect relationship, namely the extent to which HOTS learning innovation (independent variable) influences students' analytical skills (dependent variable).

The research design used was an ex post facto design, a non-experimental research design in which the researcher did not provide treatment to the independent variable. The researcher observed and analyzed data based on conditions that had occurred in the field. With this design, the researcher was able to conclude the influence between variables X and Y based on data collected through a questionnaire instrument. The main instrument used in this study was a Likert scale questionnaire, which was distributed to 11th grade students as the research sample. The data obtained were analyzed using descriptive statistics to describe the tendency of respondents' answers, and inferential statistics in the form of simple linear regression analysis to test the influence between variables.

3. RESULTS AND DISCUSSION

This study aims to determine the role of Higher Order Thinking Skills (HOTS)-based learning innovation in improving students' analytical skills in Islamic Religious Education (PAI). Data analysis was conducted in stages, starting with instrument validity and reliability tests, followed by descriptive statistics, normality tests, linearity tests, and simple linear regression.

[1]

1. Instrument Validity Test

Content validity was tested using the Aiken's V approach with the assistance of two experts in the fields of Islamic Religious Education and Learning Evaluation. The calculation results showed that all statement items in both variables (X: HOTS Learning Innovation and Y: Student Analytical Ability) obtained an Aiken's V value of 1.00, which is in the very high category. This indicates that all questionnaire items have excellent content validity and are considered appropriate for measuring the indicators of the variables studied.

Research Content Validity Table Based on Aiken's V Calculation

Variables	Number of Grains	Nilai Aiken's V	Validity Category
X (HOTS Learning Innovation)	14	1.00	Very Valid
Y (Student Analytical Ability)	14	1.00	Very Valid

Based on the validation results conducted by two expert lecturers using the Aiken's V formula, all statement items in variables X and Y obtained a validity value of 1.00. This value is included in the very high category, which indicates that the questionnaire instrument used in this study has very good content validity and is suitable for use in measuring the intended variables.

2. Instrument Reliability Test

Reliability testing was conducted using Cronbach's Alpha using SPSS. The teacher questionnaire scored 0.897, which is considered very high, while the student questionnaire scored 0.654, which is considered moderately reliable. These results indicate that the instrument has adequate internal consistency for use in research data collection.

After the instrument was declared valid based on expert assessment through a content validity test, the next step was to conduct a reliability test to determine the internal consistency between the items in the questionnaire. The reliability test was conducted on data obtained from the questionnaire completed by the research respondents, namely teachers and 11th grade students. The technique used in this reliability test was Cronbach's Alpha, with the assistance of the SPSS program. Based on Arikunto's reliability criteria, this value falls into the moderately reliable category, falling within the range of 0.60–0.70. This means the instrument has a fairly good level of internal consistency and can be used to collect research data.

Table 1: Reliability Criteria According to Arikunto

Alpha Value	Interpretation
> 0.90	Very high
0.80 – 0.90	High
0.70 – 0.79	Enough
0.60 – 0.69	Enough but needs attention
< 0.60	Not enough

The following are the results of the Cronbach alpha reliability test using SPSS 25:

Table 2 : Reliability Test of Variable X

Case Processing Summary

		N	%
Cases	Valid	8	100.0
	Excluded[a]	0	.0
	Total	8	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.897	14

Source: SPSS 25 Processing Results

The reliability test results for the questionnaire completed by eight teachers yielded a Cronbach's Alpha value of 0.897, which is considered very high. This indicates that the questionnaire used has excellent internal consistency in measuring the variables studied. Therefore, all items in the teacher questionnaire are deemed reliable and suitable for use in the research data collection process.

Table 3: Test results for variable Y

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	64	100.0
	Excluded[a]	0	.0
	Total	64	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.654	14

Source: SPSS 25 Processing Results

The results of the student questionnaire reliability test showed a valueCronbach's Alpha Of 0.654, which is in the fairly reliable category. Therefore, all items in the questionnaire were retained because they generally demonstrated adequate internal consistency for measuring the variables studied.

3. Descriptive Statistics

The results of descriptive analysis of teacher questionnaire data show that the average score for the HOTS learning innovation variable is 56.38, with a standard deviation of 7.42, which is in the fairly high to high category. Meanwhile, student questionnaire data shows an average score of 50.38, with a standard deviation of 5.20, which indicates a positive perception of students towards their analytical skills. The score categories used refer to the classification

of value intervals in a Likert scale that classifies response tendencies into five levels (very low to very high).

4. Frequency Distribution and Interval Class

The frequency distribution of teacher responses shows a predominance of the agree and strongly agree categories, indicating that teachers have a positive view of the application of HOTS learning. Similarly, student responses to the analytical ability variable show the same tendency, with a predominance of the agree and strongly agree categories, although in certain items there is variation in responses reflecting the challenges in the application of HOTS learning. The interval class for the total score also shows that most teachers are in the high category (58–63), while most students are in the 50–53 interval, which represents a good level of analytical ability.

5. Normality and Linearity Test

The normality test using Shapiro-Wilk yielded a Sig. value of 0.057, which is greater than 0.05, so the data is considered normally distributed. The linearity test yielded a Sig. value of 0.595.Deviation from Linearity, which is also greater than 0.05, so it can be concluded that the relationship between HOTS learning innovation and students' analytical abilities is linear.

6. Simple Linear Regression Test

Simple linear regression analysis shows that there is a significant influence of HOTS learning innovation on students' analytical abilities, with an R value of 0.386, $R^2 = 0.149$, and a significant value of Sig. = 0.002. This means that 14.9% of the variation in students' analytical abilities can be explained by HOTS learning innovation. The regression equation obtained is: $Y = 32.582 + 0.381X$

This equation shows that every 1 point increase in the application of HOTS learning will increase students' analytical skills by 0.381 points, assuming other variables remain constant.

7. Interpretation of Results

These results reinforce the finding that a learning approach that integrates higher-order thinking skills (HOTS) has a positive contribution to the development of students' analytical abilities. Empirically, this is reflected in the positive perceptions of teachers and students and the significant relationship between variables X and Y. Therefore, the implementation of HOTS learning innovation is not only feasible but also effective in supporting students' analytical competency achievement in Islamic Religious Education (PAI).

4. CONCLUSION

Based on the results of the descriptive analysis of the student questionnaire, the majority of students responded positively to the Higher Order Thinking Skills (HOTS)-based learning innovation. This is indicated by the high percentage of responses in the “Agree” and “Strongly Agree” categories, particularly on items related to understanding and applying higher-order thinking. Therefore, it can be concluded that students perceive the benefits of HOTS-based learning in helping them think critically and analytically. Meanwhile, the results of the frequency distribution of the teacher questionnaire show that most teachers fall into the high category in supporting and implementing HOTS-based learning. This finding indicates that teachers at SMA Islam Athirah Bone are committed to the importance of developing higher-order thinking skills in the learning process.

The statistical test results also support this conclusion. All questionnaire items were tested for validity using Aiken’s V and for reliability using Cronbach Alpha, with results indicating that the instrument is appropriate for use. The normality test using the Shapiro-Wilk method showed that the data were normally distributed, with a significance value greater than 0.05. The linearity test indicated a linear relationship between the HOTS learning innovation variable (X) and students’ analytical abilities (Y), with a deviation from linearity value of 0.919

and a significance of 0.595 (> 0.05), so H_0 is accepted. Furthermore, a simple linear regression test showed that HOTS-based learning innovation had a significant effect on students' analytical skills. A significance value of 0.002 (< 0.05) and an R-square value of 0.149 indicate that 14.9% of the variation in students' analytical skills can be explained by the HOTS-based learning innovation.

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