



Development of Higher Order Thinking Skills (HOTS) through Learning Fiction Story Texts: An Empirical Study in Indonesia

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Abstract

This study aims to analyze students' *Higher Order Thinking Skills (HOTS)* in fictional story text materials. HOTS is considered essential in developing students who are critical, creative, and capable of solving problems. The research method used is a descriptive analysis approach. Data is collected through HOTS tests designed to measure students' higher-order thinking abilities, covering a wide range of situations and questions that demand analytical thinking, problem-solving, and assessment. The research participants consisted of grade VIII students of SMP N 1 Jaten. The results of the analysis showed significant variation in student HOTS between individuals. Some students are able to express HOTS in a variety of contexts, while others have more limited HOTS. These findings point to the need for greater attention to the development of students' HOTS through appropriate learning approaches and supportive learning environments. The implication of this research is the importance of integrating HOTS into the curriculum and learning models that facilitate students' higher-order thinking. In addition, continuous efforts are needed to improve teachers' understanding and skills in developing students' HOTS. Further research is needed to explore the factors that affect students' HOTS in depth, as well as to identify effective learning models in improving HOTS.

Keywords: High Level of Thinking Skills, Fictional Story Texts

Introduction

Indonesian subjects are one of the mandatory subjects in every school level. Fiction story text material is one of the main materials in Indonesian subjects. Fictional story texts are written material in the form of writing that describes events in the form of imagination, imagination, or mere fiction from the author's point of view. Typical characteristics of fictional stories, such as the presence of magical elements, character characteristics, and unique conflicts. Fictional stories offer a world that is different from reality and allows the imagination to flourish. This is in accordance with local wisdom or folklore that has stories

that are sometimes beyond human logic. In fictional stories, there are miracles, strangeness, mysteries, and supernatural properties that do not exist in the real world. The fictional world or imaginary world that students have varies according to their imagination. Therefore, fictional stories are chosen to improve students' imagination abilities as outlined in their writings (Aprilia & Aminatun, 2022; Bland, 2022; Mar & Oatley, 2008)

To study fiction story texts, students must achieve CPM and CPMK. The stages carried out by students in learning fiction story texts are identifying, determining, studying, and presenting or writing fiction story texts both orally and in writing. These stages will make it easier for students to achieve competencies in learning fiction story texts. In measuring these competencies, teachers certainly need innovative assessment instruments that are able to measure student success in learning and the implementation of assessment in education must hold the applicable principles (van der Steen et al., 2022). One of the things that can be used in learning in the 4.0 and 5.0 era is a HOTS-based learning instrument (NADIA et al., 2022; Panggabean et al., 2021; Tyas & Naibaho, 2021). This is in line with what was conveyed by (Jaenudin et al., 2020) that the relevant evaluation to be applied and developed to students, especially in the era of the industrial revolution, is HOTS-based evaluation.

HOTS is one of the skills of the 21st century (Abduh, 2021; Rahmanudin, 2023; Hamidah, et al: 2019; Rahayu, et al: 2020). In this era of technological development in the 21st century, human activities have changed from traditional to modern because of the existence of media teknologi. The rapid development of industrial technology brings unexpected changes, so people need to cultivate the necessary spirit and skills from an early age so as not to be left behind in technological developments. For humans, it is important to be able to anticipate rapid change, with a focus on the development of education through the improvement of professional skills, learning and innovation, information, media and technology. High-level thinking skills require students to not only memorize facts and concepts, but act on those facts. These behaviors include deep understanding, consistent analysis, categorizing information, manipulating data, generating creative ideas, and applying them to find solutions to new problems. The (cognitive) thinking process dimensions for higher-order thinking skills are a) Analysis (elaboration, organization, discovery of implicit messages); b) Evaluate (examine, criticize); c) Creating (producing, planning, producing) (Alsaleh, 2020; Brookhart, 2010; Ghanizadeh et al., 2020; Nagappan, 2001; Zohar & Ben-Ari, 2022).

HOTS questions are characterized by the use of unknown questions and contextual questions. This aims to encourage students to think deeply and creatively (Eka Mahendra, 2020; Sagala & Andriani, 2019; Winarso & Haqq, 2020). HOTS questions often explore situations or problems that are unusual or unknown to students. The purpose of using unknown questions is to avoid the possibility of students basing their answers on pre-memorized knowledge or standard answers, when faced with unusual problems, students

are challenged to think critically, analyze information, and apply their understanding to find creative solutions. In addition, HOTS questions often place the problem in a real-world or contextual context. This context includes everyday situations, scientific situations, or other real-world situations. By providing context to the problem, students are encouraged to look at the problem from a different perspective, identify relevant information, and adjust their approach to solving a more realistic problem.

By combining these two concepts, HOTS questions encourage deeper learning because they require students to deepen their understanding, consider context, and find innovative solutions. It also helps students develop critical thinking, creativity, analysis, evaluation, and effective problem-solving skills that are essential for facing the challenges of a complex and diverse world, and how HOTS students are doing in Indonesia. This is reflected in the implementation of PISA and TIMSS in each period. PISA (*Program for International Student Assessment*) and TIMSS (*Trends in Mathematics and Science Research*) use questions guided by HOTS in all their implementations (Abdullah et al., 2019; Azid et al., 2022; Ismail et al., 2024; Kania et al., 2024; Tanujaya et al., 2021). Indonesia consistently ranks last, with scores below the average score of each participating country, meaning that the HOTS of Indonesian students is still weak (Darussyamsu et al., 2021). Therefore, it is important for students to get training to develop higher-order thinking skills (Esti et al., 2023; Ginting & Kuswando, 2020; Welch & Aziz, 2022). Based on the explanation above, the researcher wants to consider the assessment of high-level thinking skills in fictional narrative texts in more detail.

Method

This research method is a mixed-methods with sequential explanatory design, which combines quantitative and qualitative analysis to understand students' higher-level thinking skills in learning fictional story texts. The subject of this study is grade VIII students at SMP N 1 Jaten. They were selected using a stratified random sampling technique to ensure that the acquisition of representative data was based on academic ability. The instrument used is the HOTS test of essay questions based on Bloom's taxonomy and includes types of analysis, evaluation, and creation, in-depth interviews with students and teachers, and observation of Indonesian classes. Data is collected in two stages, quantitative, and qualitative.

The first stage is the HOTS test, which is then analyzed with descriptive and inferential quantitative techniques such as the T-Test to measure the difference in ability between groups of students. The qualitative stage involves interviews and classroom observations to find out the factors that affect students' HOTS abilities and analyze the implementation of the HOTS learning methods that have been applied. Quantitative data was analyzed using statistical software; while qualitative data is analyzed with content

analysis techniques to isolate the main themes. The validity of the data is guaranteed by data triangulation analysis techniques, which integrate tests, interviews, and observations. The test instrument was tested with validity, and reliability tests, using the Cronbach Alpha coefficient. The research follows ethical principles, asks Indonesian teachers if it is possible to research in their classrooms, and asks for approval from schools. It is hoped that the findings of this study will contribute to practical recommendations for the development of HOTS learning, analyze and describe obstacles and supporters, and become a reference for the development of competency-based syllabi at the national and international levels. The journal is expected to become a standard from international journals that are relevant in educational education.

Results

High-level thinking skills are very important to apply to students, this is based on constructivist learning theory and Bloom's taxonomy theory. Learning and learning in constructivism theory emphasizes the effectiveness of student involvement in actively building their own knowledge through understanding, reflection, and experience. Students are not only passive recipients of information but also active participants in the learning process. Higher-level thinking skills (HOTS) are based on a constructivist approach because they encourage students to think critically, analyze, and integrate new knowledge with existing knowledge to understand concepts more deeply (Adzidzah & Yudiawan, 2024; Ghanizadeh et al., 2020; McMahon, 2007).

Taxonomy in education was introduced by Benjamin S. Bloom which was called Bloom's Taxonomy in 1956 AD. Initially, taxonomy only contained the cognitive domain, but then experts, especially Kratwohl and Anderson, developed it into three domains, namely the cognitive, affective, and psychomotor domains. Bloom argues that educational goals must be able to achieve these three areas (aspects). Bloom's taxonomy is essentially the development of a measurable and observable system to group students' learning behaviors to aid in planning and evaluating learning outcomes. Bloom's taxonomy focuses on the fields or domains of knowledge or intellectual (cognitive), attitude or feeling, and feeling (affective), and skills (psychomotor) (Agih, 2019; Nelson et al., 2020; Suwannatrai, 2022).

The realm of knowledge, attitudes, and skills centered in Bloom's theory of Taxonomy, this classical theory in education also describes the hierarchy of learning levels. Bloom's taxonomy groups learning objectives into six sequential levels (LOTS, MOTS, and HOTS) which are later revised by Anderson and Karthwohl, the levels are remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating/creating (C6).

Table 1: Revised Cognitive Process Dimensions Anderson and Karthwohl (2001)

Category	Levels	Description	Verb
HOTS	Creating	Create your own ideas/ideas.	construct, design, create, develop, write, formulate
	Evaluate	Making your own decisions.	evaluate, assess, refute, decide, choose, support
	Analyze	Specifying the aspects/elements.	compare, check, criticize, test
MOTS	Apply	Using information on different domains.	using, demonstrating, illustrating, operating
	Understand	Explain ideas/concepts.	explain, classify, receive, report
LOTS	Know	Recalling.	remember, register, repeat, imitate

In this context, HOTS is seen as a higher-level thinking ability that goes beyond simply understanding facts or information. In the test that was prepared, there were three description questions that represented three different levels of HOTS, namely analysis, evaluation, and creation. Here are the questions:

“Purbasari dan Purbararang”

The story of Purbasari and Purbararang tells the story of the kind-hearted Purbasari brothers and the envious Purbararang brothers. One day in Pasundan, King Prabu Tapa Agung chose Purbasari as queen, which triggered envy in Purbararang's heart.

Purbararang then asked the witch to curse Purbasari so that black spots appeared on his body. This made Purbasari expelled to the forest and befriended a mysterious monkey named Lutung Kasarung. Long story short, Lutung Kasarung helped Purbasari to make his curse disappear. After recovering, Purbasari and Lutung Kasarung went to the royal palace.

Arriving at the palace, they met Purbararang, and she said that if she wanted to become a queen, she had to have a handsome husband. Lutung Kasarung finally transformed himself into a handsome prince. Purbararang was also surprised to see the incident.

Purbararang finally realized his mistake and apologized. Purbasari forgave his

sister and she became queen, accompanied by a handsome prince. The moral message is to be a kind child, not to be spiteful, and not to harm others because God hates spiteful attitudes.

Question 1

1. Based on the story presented above, write down the characters contained in the story. Explain what the nature of the characters in the story is!

Point 1 (analysis): The first item aims to measure students' ability to conduct analysis. This problem requires students to break down complex information into smaller components, identify patterns or relationships between these elements, or analyze statements to understand their implications. This question is classified as a Hots level analysis question because students are asked to write down characters and characterizations, then explain the nature of the character.

2. Based on the story above, does the story have the same storyline? Explain why.

Item 2 (evaluation): The second item is designed to test students' ability to compare 2 different stories. This question asks students to assess a concept, argument, or situation based on certain criteria. Students must be able to identify strengths and weaknesses, make decisions based on available information, and construct logical arguments to support their evaluation.

3. Create a fictional story with chicken, eagle, buffalo, and Pak Tani characters

Item 3 (Create): This third item is the level of creating, which is the highest level in HOTS. This question will challenge students to think creatively in creating something new based on their knowledge and understanding. Students are required to design solutions to complex problems, develop innovative plans, or produce original work in a specific context.

Discussion

The three questions were tested on 34 students of Class VIII E SMP N 1 Jaten. A total of 34 students answered the test, as many as 29 students could not solve the questions correctly. Only 5 students can solve the problem correctly and completely.

Table 2. Student Difficulty Based on Question Type

QUESTION TYPE	STUDENT COMMENTS	STUDENT COMMENTS
ANALYSIS	I had a hard time distinguishing the main characters.	I had a hard time distinguishing the main characters.
TALL	Tall	Don't know how to compare two stories.
CREATE	Very High	Making up stories is very difficult.

These results show that almost all students tested have difficulty answering questions based on HOTS. This is especially evident in the evaluation and question-making types, as it requires a high level of critical thinking skills and creativity. These observations are also in line with findings from previous PISA surveys which showed that the majority of Indonesian students find it difficult to solve questions that include real-world contexts and/or creative solutions. To this end, some of the students interviewed further provided interesting comments to elaborate:

1. What is this, we are asked to remember?
2. What is the flow?
3. The problem is very difficult, composing is very difficult

For this, students' words reflect a lack of experience in answering contextual questions in the learning process. In addition, pedagogical approaches identified through teacher interviews, such as lectures and drilling, are one of the reasons for students' limited ability to associate concepts with real-life situations. Most students are used to memorization-oriented or practice-oriented questions, which focus more on fact-based understanding rather than on the application or development of new ideas. As revealed through teacher interviews, the types of questions used in Indonesian lessons are rather monotonous, so students are not trained to work on highly skilled questions.

The implication of this is that students may be less trained in dealing with complex situations or real-world problems that require critical thinking and the ability to apply knowledge in different contexts. In a more holistic education, it is important for students to be exposed to diverse contextual problems so that they can develop higher-order thinking skills and relate the concepts they learn in real-world situations. By providing students with more opportunities to face contextual problems and related to other fields of study, it is hoped that they can develop more holistic thinking skills and prepare themselves well to face complex real-world challenges.

Furthermore, interviews were conducted with teachers in the field of Indonesian

studies regarding how Indonesian learning has been applied so far. Information was obtained that Indonesian learning that has been applied tends to use lecture and drill methods, inquiry and peer tutors. This shows that learning tends to be teacher-centered, with students as recipients of information (Dellia et al., 2023; Pamungkas et al., 2023). In addition, it was revealed that students were rarely given questions that were different from the context given. This means that students do not face many Indonesian questions that relate concepts to real-world situations or different contexts. When students are only given limited examples, they may struggle to understand how to apply those concepts in different situations and face real-world problems.

Furthermore, students can be said to rarely get diverse contexts in the questions given. This implies that the questions given to students tend to have a limited pattern or type. As a result, students may feel unfamiliar or unfamiliar when faced with problems that have a different complexity or context than what they have previously practiced. From the interview, it can be concluded that Indonesian learning that has been implemented tends to encourage students to think critically and creatively. The lecture and drill methods can help students understand basic concepts, but they do not provide opportunities for them to develop *Higher Order Thinking Skills* (HOTS) such as analysis, synthesis, and problem-solving in real-world contexts. It is important for educators and decision-makers in the field of education to consider a more holistic approach to learning, with more opportunities for students to contextual and diverse questions, and to connect the field of Indonesian study with everyday life. Thus, the results of this study show that the development of students' HOTS not only requires contextual practice questions, but also changes in learning approaches. Therefore, teacher-centered learning and lack of variety in the types of questions given are the main challenges in integrating HOTS into the curriculum.

Conclusion

Many factors are believed to be the cause of the lack of students in understanding HOTS problems, including learning models or methods that must develop HOTS, students must often be given questions that practice HOTS. The following suggestions are given to overcome this problem, namely: (1) integrating HOTS exercises in daily learning to help students hone their evaluation and concept creation skills; (2) using a student-centered learning approach, allowing students to collaborate, discuss, and solve problems together; (3) Providing challenging Indonesian learning challenges and encouraging students to think creatively and create new solutions; (4) provide constructive feedback to students to help them develop evaluation and concept creation skills. By implementing these strategies, it is hoped that students can develop better HOTS skills in solving fiction story problems in Indonesian lessons.

The findings of this study can be very important for the development of Indonesian

curriculum and teaching methodologies, especially HOTS-based learning for Indonesian language subjects. The integration of HOTS training in everyday teaching can be a strategic step to help students improve the critical thinking, analysis, evaluation, and creation skills needed in the 21st century teaching era. However, this study has some limitations, including the limited scope of subjects in one school, so the results cannot be generalized widely. In addition, the limited duration of the study may not capture the development of students' HOTS longitudinally. It is therefore suggested that future research should involve a more diverse subject scope across educational qualifications. To this end, future research opportunities can explore how students' HOTS develops in different learning contexts and with the help of technology and digital learning.

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