APPLICATION OF PAI LEARNING BASED ON HIGHER ORDER THINKING SKILL (HOTS) AT SMK PUSTEK SERPONG

Aa Saprudin
Faculty of Tarbiyah and Teacher Training Science, Syarif Hidayatullah State Islamic University Jakarta
aa.saprudin20@mhs.uinjkt.ac.id

Abstract:
The purpose of Islamic Religious Education is to make people who always improve the quality of their faith and devotion and are able to have noble morals in their lives (Permendikbud RI No. 21 of 2016). This regulation can be understood that in the educational process the emphasis is on character building. The character of students that appears is nothing but the fruit of thinking, for that before student behavior develops so that it becomes a character, the first thing that must be addressed is the mindset of students. This study aims to find out how the learning process based on Higher Order Thinking Skill (HOTS) is carried out at SMK PUSTEK Serpong. This type of research is qualitative research, through this approach researchers see so as to get a clear picture of how PAI learning is carried out at the SMK PUSTEK Serpong institution with research subjects in the form of planning, learning processes to the evaluation stage. Based on the results of the study, it can be concluded that SMK PUSTEK has not fully implemented HOTS-based PAI learning.

Keywords: Higher Order Thinking Skill, Character Education, HOTS-based Learning

INTRODUCTION

The current era of globalization requires quality learning to facilitate students in exploring every potential that exists in them. The process can be passed by developing various skills, skills and abilities that can serve as provisions to face the challenges of competition in the global arena. Therefore, the application of Higher Order Thinking Skill (HOTS) learning in the 2013 curriculum is expected to answer national education problems so that the education system undergoes improvements in order to realize future generations who have character, who understand the identity of their nation and the creation of superior human resources, able to compete in the multinational world.

Strengthening the learning process at the elementary school level is one of the elements of change in K-13. Through this reinforcement, it is expected to encourage the quality of learning to be more effective, efficient, fun, and memorable (containing
meaning), so as to increase the achievement of learning outcomes. In order for the quality of learning to be achieved, the learning presented in the classroom must use a student-centered approach. The teacher is no longer the only source of knowledge, he serves only as a facilitator for students to discover their own knowledge through the process of critical thinking. However, the fact is that there are still many teachers who do not apply HOTS-based learning. This can be seen from the formulation of learning indicators made, objectives, and learning activities along with their evaluations contained in RPP and the implementation of the KBM process in the classroom. Where in the series of processes does not show any student-centered learning activities that will result in the critical reasoning power of untrained students. Untrained reasoning power will only arrive at low thinking skills or commonly called Lower Order Thinking Skill (LOTS). A teacher should be able to develop and convert from learning as much as possible (LOTS) to (HOTS), and this should be started since designing the Learning Implementation Plan (RPP). Richard offers a learning concept he calls lesson plan remodeling. This remodeling can be understood as how a teacher codifies a lesson plan by critiquing an lesson plan based on a critical process. This concept is divided into three main components: First, the Original lesson, or Standard Approach statement that explains the topic and how to discuss it; second, the Critique which explains the importance of the topic to students, evaluates the original, and provides an overview of how the lesson can be remodeled; and Remodelled Lesson (Amended/modified lesson) that describes the new lesson, questions the student will ask and the student’s activities, and mentions thinking strategies.

HOTS-based learning will develop students’ ability to build appropriate and effective arguments to make decisions or rational solutions to believe and act on their beliefs. Teaching students with the HOTS approach should have become a must for teachers in this era. This ability to think is needed by students to face the life model of this century, communication and information technology that are increasingly open, sophisticated, modern and globalized, involved and moving to influence each other in the daily life of a social community, be it a company or institution. And certainly face complex conditions in everyday life (Nugroho, 2018).

Critical thinking is very important to be trained early because this skill does not just appear without a stimulus. Especially considering the results of Kurniawan’s research (2021) which states that the level of critical thinking ability of vocational students is relatively low. For this reason, exam questions in each semester as part of the learning process must bring up questions of HOTS level. This has been hinted by the Decree of the Directorate General of Islamic Education No. 5163 of 2018 concerning Technical Guidelines for Learning Development in Madrasah has provided instructions so that the learning process in schools carried out by teachers, in order to prepare students towards 21st century competencies that are identical to HOTS learning.
HOTS learning must be carried out comprehensively, not only the process and evaluation of HOTS but must begin with planning, implementing learning, assessment and evaluation. Because it will be irrelevant if students are given the form of HOTS questions but in practice the learning does not use HOTS-based learning. HOTS-based learning can be presented by various methods such as Problem Based Learning, Project Based Learning, Inquiry, discovery etc.

The person who first proposed HOTS was an author and Associate Professor from Dusquance University named Susan M Brookhart. He defines this model in his work entitled 'How to Assess Higher-order Thinking Skills in Your Classroom' (2010), as a method for knowledge transfer, critical thinking, and problem solving (solve the problem). HOTS should not be understood as just a type of problem, but also includes a learning model. This learning model must accommodate various skills in the ability to think, for example, application of thinking and adapted to the needs of different students in the sense of appropriate context. In addition, there is also a type of assessment (assessment) from HOTS that requires students to complete unfamiliar assignments or questions. It is intended that students are expected to have enough prior knowledge to encourage higher-order thought processes (Sofyan, 2019, hal. 3).

Based on The University of Cambridge's Cambridge English Teaching Knowledge Test (2015), HOTS is a high-level cognitive skill such as analyzing and evaluating (judging) that can be taught to students by their teachers. These skills or expertise include thinking about things and making decisions about them, finding solutions to problems, thinking creatively, and thinking about the advantages and disadvantages of something (Nugroho, 2018, p. 17)

Ibrahim stated that both Higher Order Thinking (HOT) and Higher Order Thinking Skills (HOTS) are educational and learning concepts based on the taxonomy of learning outcomes (Bloom's Taxonomy). He further explained that this concept is dominated by cognitive processes rather than others. At the beginning of its appearance, Bloom's Taxonomy had six levels of noun thinking, namely knowledge, understanding, application, analysis, synthesis, and evaluation. This ability to think is not just remembering (recall), restating (restate), or copying / quoting without reprocessing (recite). Not much different, Ridwan Abdullah Sani distinguishes it between HOTS and HOT. If HOTS is defined as higher order thinking skills then HOT is defined as higher order thinking (HOT) (Subadar, 2017, p. 86). According to him, HOT has a reference to the revised edition of Bloom's taxonomy, which is related to the ability of cognitive dimensions in analyzing, evaluating, and creating. While HOTS is related to the ability to solve problems, think critically and creatively.

Higher Order Thinking Skills is a thinking skill of students at the cognitive level with higher capacities and capabilities. These skills can be acquired through the development of various concepts, cognitive methods, such as problem solving methods, bloom's taxonomy, and taxonomies of learning, teaching, and assessment. This HOTS includes
problem-solving, creative thinking, critical, argumentation, and decision-making skills. King argues that HOTS has several dimensions. These dimensions can be distinguished such as critical, logical, reflective, metacognitive, and creative thinking. Meanwhile, according to Newman and Wehlage, with higher order thinking skills, students are able to distinguish between facts and opinions clearly, build good arguments, can find solutions or solve problems, are able to construct explanations, are able to produce antitheses so as to produce hypotheses and understand various complicated things to be simpler clearly. (in Widodo, 2013: 162). Higher order thinking skills can occur when a person connects new information with old information (already stored in his memory) and associates and/or reorganizes and develops that information to achieve a goal or find a solution to an unsolvable situation (Dinni, 2018, p. 171).

Based on some of the opinions above, it can be concluded that the ability to think at a higher level is the ability to think that is not just remembering, recalling, and also referencing without reprocessing, but more than that, namely the ability to think to examine information critically, deeply, creatively, creatively and can solve problems.

Characteristics of HOTS-Based Learning

HOTS-based learning can be done by implementing student-oriented activities. Teachers are expected to be able to direct and facilitate it. Here are some student learning activities that reflect HOTS-based learning.

1. Active in learning

The role of the teacher is not very dominant in the learning process. HOTS should be able to make all students think actively. This method can be taken with the teacher's efforts in preparing assignments or problems that encourage students to think creatively, critically and produce solutions to a problem.

2. Formulate a problem

The inquiry learning approach can be the right choice to formulate a problem. Because in it there is an activity to formulate problems marked by questions that will be sought solutions or answers through the investigation process. At this stage it can be filled in the form of the act of developing a problem that is presented into another form of problem by looking at it from various points of view. This is done in order to make it easier for students to understand a problem. Thus, problem submission and resolution can be used to identify individual creativity as Silver and Cai (1996) argue.

3. Examine complex problems

What is meant by the problem here is a problem that cannot be solved simply by remembering or applying a common strategy. However, problems that can be found in everyday life (contextual) that cover various fields of science.

4. Think divergently and develop ideas

Divergent thinking is the process of thinking in order to develop patterns from an idea or information so as to give rise to various points of view. By implementing
a learning process like this will train students to think creatively so that students are familiar with innovation.

5. Extracting information from multiple sources
   This learning can be done in the classroom or outside the classroom through group or individual assignments. Students should be given practice to create various questions that will seek information or solutions from different sources. Students can plan sources or use unplanned sources. When looking for news or information about flood management in an area, students can and are very likely to dig up information on local residents, without going through planning first.

6. Think critically & find solutions creatively
   This learning process will be useful to students when assessing new ideas, choosing the best and codifying or making necessary refinements. Thus students get the opportunity to get used to thinking critically when facing a problem or even when receiving information.

7. Think analytically, evaluatively, and make decisions
   Learning activities like this can be seen when students are asked to choose one alternative way among several other ways. Teachers encourage students to think analytically, namely by giving consideration to some of the advantages and disadvantages of a solution offer. For example, when students are asked to choose beverage packaging whether in the form of glass bottles, plastic or cardboard boxes. (Sani, 2019, 63-70)

Purpose of HOTS
   The main purpose of HOT-based learning is how to improve the thinking capabilities of students to reach a higher level, especially the skills to think when receiving information and process it critically, think creatively in finding problems by using existing knowledge to conclude, believe and make decisions in various complicated situations (Saputra, 2016, pp. 91-92).

Types of HOTS Based on Learning Objectives
   According to Nugroho, the type of HOTS can be divided into three categories based on learning objectives in the classroom. The three types are as follows. First, HOTS as Transfer, this type can be understood that the skills to apply the knowledge and expertise already developed into different contexts include the skills of analyzing, evaluating and creating. Second, HOTS as critical thinking, critical thinking is defined as the skill of giving good judgment or critically wise to something using logical and scientific reasoning. One of the learning objectives is to create students to have the ability to present arguments, do contemplation or reflection, and make fair and appropriate decisions. Third, HOTS as problem solving. HOTS as problem solving can be understood as the skill in finding or identifying problems and solving them using non-automatic strategies. Armed with these skills, students can solve their own problems and work more effectively (Nugroho, 2018, p. 18).
HOTS-Based Learning

The HOTS skills that students will have are impossible to obtain quickly or instantly. These skills can be started from habituation carried out through holistic and sustainable strategies from teachers, without HOTS-based learning teachers should not bill students with HOTS-type measurements and assessments. HOTS must go through careful design planning that is adapted to the context of student life and teaching materials. Teachers had better have foresight. The teacher has mastered it so that it has an overview of planning based on learning objectives, then various assessment evidence also needs to be prepared. For example, what kind of results students must get and how to get these results, and then what kind of learning design is appropriate.

Inquiry-based learning can be the best choice in learning design to familiarize HOTS. Inquiry can be interpreted as a question or inquiry. The investigation aims to get or find the solution of a problem yourself. Martin, et al. (2005) argue that "inquiry is more than hands on". Inquiry learning is more than just an activity done by hand. Inquiry is an activity of thinking. Inquiry can show the mental processes of relationships that affect each other between students of an object with. In the process inquiry contains activities in the context of exploring questions, ideas and phenomena. While the way of thinking used is more emphasized on the process of thinking critically and analytically. Learning is an activity model that emphasizes the importance of encouraging students to understand the structure or key ideas of a discipline, this requires active students to be directly involved in the learning process, and a belief that real learning will actually occur through independent discovery (Thalabi & Basuni, 2009, p. 126).

Inquiry learning is very powerful for exploring and sharpening HOTS. This can happen because the process is in accordance with its characteristics which are open ended (open) and based on problem solving (problem solving). In inquiry, it is very open between the thoughts of one student and another while the teacher has a function only as a facilitator. Students can present basic questions or basic questions of a topic or problem and other students seek and find answers themselves through reasoning. The teacher provides direction for how to think, convey alternative points of view, and submit new questions as a response in order to develop previous problems to be more in-depth. From this process, students are given the opportunity to train their thinking power in dealing with complex complex and interrelated problems (networking). This problem-solving process will involve a cognitive level. Students can begin by recognizing and understanding a problem. Next, create and formulate problems, make plans and determine methodologies to solve problems, make conclusions, and implement these decisions or conclusions.

The Partnership of 21st Century Skills has identified and published that learners in the 21st century must be able to develop the necessary competencies in the 21st century that focus on developing Higher Order Thinking Skills, such as: creative thinking, critical thinking, problem solving. Collaboration, communication skills, ICT stuttering,
information and communication technology, information and communication technology, and media literacy (Basuki & Hariyanto, 2014).

Mastery of higher-order thinking skills is very important for every student who is in middle class school. This is stated in several points of the High School Graduate Competency Standard (SKL). The point in question is how students can build and implement information logically, critically, creatively, and innovatively; demonstrate the ability to think logically, critically, creatively, and innovatively in decision making and demonstrate the ability to analyze and solve complex problems (Permendiknas No. 23 of 2006). Likewise, the purpose of national education in Indonesia mentioned in Law Number 20 of 2003, namely how education in this case institutions in the form of schools in order to be able to develop the potential of students to become people who believe and fear God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

Based on the objectives of national education, it is clear that not only cognitive and psychomotor aspects, affective aspects are also very instrumental and important to get a lot of attention. Similarly, in the 2013 curriculum, it is stated that the development of spiritual and social attitudes, curiosity, creativity, and cooperation is carried out in balance with the development of intellectual and psychomotor abilities. The 2013 curriculum is not a new policy in the field of education. But in practice, it is still far from being roasted from the fire. This reality is a shared responsibility for various parties. Moreover, the role of teachers is very vital because it is directly related to students. If so, the hope for answers to the nation’s various challenges and problems will be wide open (Baharun, 2017).

In learning Islamic Religious Education (PAI) students are expected to have the ability to process, present and reason in concrete domains such as using, decomposing, stringing, modifying, and making. In addition, they are also required in the abstract realm of writing, reading, counting, drawing, and composing. All of that is certainly adapted to what they learn in school and even other sources in the point of view of a theory.

The essence of HOTS bassist learning is student centered. In the process, the teacher acts as a facilitator. This is in line with what Zhu and Yeo expressed that learning that focuses on rote memorization and procedural skills will be very easily forgotten by students if not applied or applied. Conversely, teaching material will be easy to remember if obtained through a process of deep and thorough understanding such as learning experiences that are seasoned with various means of interaction between students and the environment, this will greatly facilitate students in finding synthesis, evaluation and application of the knowledge they receive. Teachers are asked as much as possible to be able to develop students’ thinking skills by providing the widest facilities and opportunities for students to become thinkers and problem solvers who experience development. Therefore, in its implementation, Islamic Religious Education
learning should focus on a problem-solving approach. In addition, a PAI teacher should provide problems that allow students to use their higher-order thinking skills. Well, one of the learning models that can be developed is learning oriented to the problem solving approach, namely in the form of Creative Problem Solving learning.

**Form of HOTS (Higher Order Thinking Skill) Questions on Multiple Choice**

Killoran (1992) argues that higher-order thinking tests can be made in the form of multiple choice (PG) which is divided into two types, namely PG questions associated with databases and standard PG questions. The PG questions associated with the database are based on the data presented on the questions. The data can be tables, story illustrations, graphs, fictional conversations etc. For more details consider the following table:

<table>
<thead>
<tr>
<th>Question Format</th>
<th>Question Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Multiple</td>
<td>Get to know terms and people: Used to reveal students' ability to recognize important terms, people and concepts needed to know significance or understand relationships between the general and specific</td>
</tr>
<tr>
<td>Choice</td>
<td>Compare and contrast: Used to reveal students' ability to distinguish and contrast two things in order to understand these two things</td>
</tr>
<tr>
<td></td>
<td>Cause and effect: Used to reveal students' ability to understand actions or events and related causes</td>
</tr>
<tr>
<td></td>
<td>Generalization: Used to reveal students' ability to associate certain facts or events with a general idea. Students should be able to draw certain information from general principles, opinions, rules or conclusions. Generalizations should be established by examining facts, statistics and trends</td>
</tr>
<tr>
<td></td>
<td>Chronology: Used to reveal students' ability to arrange chronological order in an effort to see patterns and sequences of events</td>
</tr>
<tr>
<td>Special type:</td>
<td>1) Fact or opinion 2) Source usage 3) Use of reference books 4) Terms of reference</td>
</tr>
</tbody>
</table>
Application of PAI Learning Based on Higher Order Thinking Skill (HOTS) at SMK Pustek Serpong

<table>
<thead>
<tr>
<th>Question format</th>
<th>Problem form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple choice with database</td>
<td>Comprehensive questions: Used to reveal students' ability to understand certain images, numbers, or things given to data</td>
</tr>
<tr>
<td></td>
<td>Question explains: Used to reveal students' ability to explain situations illustrated in the data provided. Students must analyze the data to understand its overall meaning, then use their knowledge to explain the data satisfactorily</td>
</tr>
<tr>
<td></td>
<td>Generalization or conclusion questions: Used to reveal students' ability to generalize or make conclusions by connecting or associating the data presented</td>
</tr>
<tr>
<td></td>
<td>Prediction questions: Used to uncover students' ability to make predictions based on situations illustrated in the data</td>
</tr>
</tbody>
</table>

Table quoted from (Sani, HOTS-Based Learning, 2019, pp. 240-242)

RESEARCH METHODS

This research is a qualitative research, through this approach researchers try to get a clear picture of how PAI learning is carried out at the SMK PUSTEK Serpong institution which has a strong attraction so that it can take many people's hearts to entrust their children to study there.

The subject of this study is the PAI learning process starting from the planning, implementation, to evaluation stages. The informants are the Principal, Curriculum, TU, and PAI teachers. As a qualitative research, the researcher is as a key instrument, with the help of interview guidelines and document studies, researchers record, record, review, check and recheck, classify, and develop and abstract data and information obtained from informants.

The data collected through in-depth interviews, checklists and literature studies are processed and formulated into research reports. The informant of this study consists of related elements.

RESULTS AND DISCUSSION

Based on the results of interviews, observations and document review, it is known that SMK PUSTEK located in the center of South Tangerang City, precisely in Pondok Corn Village, North Serpong, has a total of + 1,730 Muslim students divided into 7 expertise programs, namely, Mechanical Engineering, Light Vehicle Engineering, Motorcycle Engineering, Computer and Network Engineering, Accounting, Multimedia.
Office Automation, and Multimedia. This number is relatively large, especially when compared to the nearest school, MA Yaspita whose number of students is no more than 200 people. It is definitely a tough challenge especially since there is a growing adage in the community that STM school children have a hobby, are familiar with juvenile delinquency and everything that has a negative stigma. In an effort to foster the morality of students, the foremost of them are GPAI, with no intention of minimizing the role of teachers of other subjects, GPAI is required more in fostering moral values or student morals because that morality is a reflection of people of faith and piety who are the goals of PAI learning in schools. It is inconceivable that if the moral development of students is not fostered and managed properly, the negative stigma attached to STM children will continue to exist and maybe even worse. To improve the morals of students, the first thing to do is how to build the right mindset so that from that mind will display righteous behavior. This mindset needs to be trained and familiarized in the learning process, so it can be traced to how the learning process is developed. HOT-based learning (higher order thinking skills) will be more appropriate if used with the aim of training students to think higher order so that students are not trapped into misguided thinking that raises negative behavior. This strengthens Suatini’s opinion (2019) in his journal he said that teaching critical thinking in learning has enormous benefits, its role in improving learning processes and outcomes. In addition to these benefits, the ability to think critically in learning also has a role as a provision for students to navigate their lives in the future and has been proven to have a concrete impact.

The benefits directly related to PAI learning at school can be seen from the results of Fahrurrozi’s research (2021) which states that the ability to think critically has several benefits as follows: (1) a Muslim is able to reveal the meaning and lessons or wisdom behind the creatures created by Allah SWT, (2) increase confidence in the truth of Islam, (3) can provide answers to various false accusations against Islam of the haters, (4) increase ghiroh or enthusiasm in living or avoiding the commands of Allah SWT, (5) a person will avoid being misguided in taking the meaning of the verses of Allah SWT, and (6) increase gratitude for all the gifts that Allah has given.

SMK PUSTEK has a PAI Subject Teacher Deliberation Forum (MGMP). This is very supportive for the implementation of a good learning climate, because everything related to learning has gone through the deliberation stage such as making learning administration, preparing grids, and presenting evaluation questions. The RPP used by GPAI already meets the HOTS element for several reasons. First, in the indicator section there is a bill of student achievement in the form of, analyzing, researching, evaluating, studying, interpreting and finding. Second, in the implementation section, there are stages that show HOTS-based learning such as investigating various sources, developing and presenting works, critical thinking, problem solving, analyzing & evaluating the problem-solving process. Thus, it can be concluded that GPAI SMK PUSTEK has implemented HOTS-based learning when viewed from learning administration.
As for the KBM process carried out by GPAI SMK PUSTEK Serpong, it does not always use methods that show HOTS-based learning such as inquiry, discovery, problem-based learning, project-based learning etc. This happens for several reasons. First, GPAI finds difficulty in conditioning students for active learning, second, inadequate time availability. Third, there are differences in students' abilities in understanding so that HOTS-based learning does not run as expected. Based on these conditions, it can be understood that GPAI SMK PUSTEK has not fully implemented HOTS-based learning. This fact is very unfortunate because the inquiry method if applied properly will have an impact on improving students' critical thinking skills as the results of research revealed by Ahmatika (2017) that there is an increase in students' critical thinking skills with an inquiry / discovery approach.

The question instruments used in the context of assessment or as material for evaluation consideration have gone through a validation process as mentioned above. This is something good because the quality of the questions has been tested so that it is possible to produce quality questions, and can be used as a tool to test what should be tested and of course adjusted to KD, Indicators and learning objectives. Based on the review of documents in the form of exam questions given to SMK PUSTEK students, most of them do not have the characteristics of HOTS questions. Because the questions presented only test understanding and memory without any elements of analysis, evaluation, and even creating. Thus, it can be concluded that the exam questions that have gone through the MGMP SMK PUSTEK validation process have not used questions with HOTS characters. This will have consequences for students' critical and creative power will not develop as the results of Hadi's research (2022) revealed that first, the teacher's ability to compile assessment instruments has not been in accordance with the expected competencies, Second, the analysis of the questions made by the teacher did not find any one who had very good quality even those who had good question criteria were only two question points, Third, the question instruments used are not effective in increasing students' critical and creative power. Therefore, it can be understood that a good question instrument in the sense of meeting the elements of the HOTS criteria will affect students' critical and creative power.

CONCLUSION

Islamic Education teachers at SMK PUSTEK Serpong have carried out HOTS-based PAI learning both in the realm of planning and implementation processes. This can be known from RPP studies and observations. RPP is made with a very good concept because step-by-step is presented in detail and generally shows HOTS-based learning. Meanwhile, the learning process is sometimes not in accordance with the RPP because there are adjustments to the circumstances and abilities of students. The evaluation process has not used a question instrument that has the character of HOTS because it is
still in the realm of testing knowledge and understanding. And this is something very unfortunate because the learning process becomes incomprehensive so that the hope of giving birth to a generation that is able to think critically and think creatively is not optimal.

**BIBLIOGRAPHY**


---

**Copyright holders:**
Aa Saprudin (2023)

**First publication right:**
*Journal of Syntax Admiration*

**This article is licensed under:**
[CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)