Question Making Techniques for Madrasah Ishlahiyah Binjai

Jihan Fira Aziza[1], Pitri Ramawati[2], Nabila Azura Nasution[3],
Mudia Hawa Nur[4], Sutia Nur Aulia Liza[5]
[1,2,3,4,5]Institut Syekh Abdul Halim Hasan Binjai, Indonesia
Email: jhnfira2@gmail.com; pitriramawati838@gmail.com; nabilaazuranst22@gmail.com;
mudiahawanur94@gmail.com; sutianuraulia004@gmail.com

ABSTRAK

Melalui metode ceramah dan praktik, pelatihan pembuatan soal hots ini ternyata dapat membuka wawasan pengetahuan dan pemahaman guru tentang bagaimana menyusun soal serta meningkatkan kemampuan dan keterampilan guru dalam membuat soal pada jenjang keterampilan berpikir tingkat tinggi sehingga dapat digunakan untuk mengukur perkembangan daya pikir dan nalar siswa dengan semestinya sesuai dengan capaian akhir pembelajaran yang diharapkan yaitu agar siswa dapat berpikir krtitis dan kreatif sehingga dapat menerapkan pengetahuan dan keterampilan yang dimilikinya untuk mengenali dan menyelesaikan masalah yang dihadapi dalam kehidupan sehari-hari. Pelatihan penyusunan soal berbasis Higher Order Thinking Skills (HOTS) bertujuan untuk meningkatkan kompetensi guru dalam membuat soal yang mampu mengukur kemampuan berpikir kritis, kreatif, dan analitis siswa. Melalui metode ceramah dan praktik, pelatihan ini berhasil meningkatkan wawasan dan keterampilan guru dalam menyusun soal yang relevan dengan kebutuhan pembelajaran abad ke-21. Kegiatan ini melibatkan 35 guru yang didukung oleh prodi PAI Insan Binjai. Evaluasi menunjukkan peningkatan pemahaman dan implementasi soal berbasis HOTS, meskipun masih ditemukan beberapa kendala dalam praktiknya. Keberhasilan pelatihan ini diharapkan dapat menjadi model dalam pengembangan kompetensi guru di masa depan agar tercipta siswa yang berkualitas.

Keyword: HOTS; Kompetensi Guru; Soal Evaluasi; Berpikir Kritis; Pembelajaran Abad 21

ABSTRACT

Through lecture and practical methods, this training on making hot questions can actually open up teachers' knowledge and understanding of how to compose questions and improve teachers' abilities and skills in making questions at the level of high-level thinking skills so that they can be used to measure the development of students' thinking and reasoning skills. It should be in accordance with the expected final learning outcomes, namely that students can think critically and creatively so that they can apply the knowledge and skills they have to recognize and solve problems faced in everyday life. Training on preparing questions based on Higher Order Thinking Skills (HOTS) aims to increase teacher competence in creating questions that are able to measure students' critical, creative and analytical thinking abilities. Through lecture and practical methods, this training succeeded in increasing teachers' insight and skills in preparing questions that are relevant to the learning needs of the 21st century. This activity involved 35 teachers supported by the PAI Insan Binjai study program. The evaluation shows an increase in understanding and implementation of HOTS-based questions, although several obstacles are still found in practice. It is hoped that the success of this training can become a model for developing teacher competency in the future to create quality students.

Keyword: HOTS; Teacher Competence; Evaluation Questions; Critical Thinking; 21st Century Learning

Corresponding Author:
Jihan Fira Aziza,
Institut Syekh Abdul Halim Hasan Binjai,
Jl. Insinyur H. Juanda No.5, Timbang Langkat, Kec. Binjai Tim., Kota Binjai,
Sumatera Utara 20737, Indonesia
Email: jhnfira2@gmail.com

1.   INTRODUCTION

Education as the center of change in human resources is required to always make changes and improve the quality of educational services. Innovation and change will continue to be a challenge for the world of education. This challenge is in the form of the world of education's ability to anticipate rapid changes in times and rapidly developing technological changes. Since the industrial revolution in the 18th century, the shift from human power to machine power has begun. Furthermore, the discovery of electric power changed industrial productivity and economic growth at that time. The next industrial revolution was marked by the automation of the use of machines to create more effective and efficient company performance. Finally, we experienced the industrial revolution 4.0 where human automation was connected to the internet. This change increasingly demands the ability of human resources to increase their competence. Improving the quality of human resources must of course be supported by all parties who are of course involved in the same interests. Education is also the main pillar for continuing to innovate to improve the quality of education.

Learning is a process supported by various elements. The supporting elements of learning will support each other. There are three main elements in the learning process, namely planning, implementation and assessment. These three things must have a balanced portion in order to obtain optimal results. Apart from having a balanced portion, these three elements must also be sustainable. If the end result of a process is less than optimal, we cannot immediately place students as scapegoats for not mastering the material. Before exploring the causes of suboptimal learning outcomes down to student factors, it is a good idea to re-examine the three main factors. The plans made are appropriate according to the existing conditions and situations. The process carried out is in accordance with plans that are adapted to the situation and conditions at that time. The assessments carried out have truly measured students' abilities.

Learning is an interactive communication process between learning resources, teachers and students, namely exchanging information. Learning comes from English instructions. The word instruction has a broader meaning than teaching. If teaching is in the context of teacher-students in a formal classroom, learning also includes teaching and learning activities that do not require the teacher to be physically present. Therefore, in learning the emphasis is on the learning process, so planned efforts in manipulating learning resources so that a learning process occurs within students is called learning. Education, as the spearhead of a nation, should provide services that are in line with the demands of the times, someone living in the 21st century is required to have various relevant skills, which must be mastered in order to adapt and contribute to become a successful person (Ulfah, 2022).

Innovation of course continues, including through changes to the curriculum and how to assess the success of the curriculum. Since 2018, classroom learning has begun to apply the Higher Order Thinking Skill (HOTS) approach to assessing student learning outcomes. With this approach, it is hoped that the quality of learning can be measured accurately regarding students' critical thinking abilities at school. In line with technological developments, the knowledge revolution also continues and develops very quickly. Education in Indonesia must be able to adapt to increasingly rapid social changes and globalization and requires very rapid acceleration to be able to align itself with other countries. Training in Preparing Higher Questions... learning or educational curriculum is one of the items that must continue to develop to measure the real conditions of all national students in a valid and reliable manner.

Higher Order Thinking Skills (HOTS) is an instrument used to create test items and capture students' high-level thinking abilities. According to Heong, et al in Hanifah (2019) "higher order thinking is using the thinking widely to find new challenges. Higher order thinking demands a person to apply new information or knowledge that he has got and manipulates the information to reach the possibility of answers in new situations." High-level thinking abilities certainly require the ability to manage information to reach answers in new situations. HOTS as a transfer process in the learning context is to give birth to meaningful learning, namely the ability of students to apply what they have learned to new situations without direction or guidance from educators or other people and to be able to work on the questions created by the teacher.

After identifying the competency characteristics to be measured, the next step is to determine the appropriate form of questions. The form of the questions that has been determined is then made into question items according to the existing grid. Compiling the questions is not an easy job. There are still many question writers who commit malpractice (Sapari 2008:47). Malpractice here means the form of questions that do not match the characteristics of the material. Material that is only appropriately tested through short answers, B-S, or others but made into multiple choice questions or vice versa. As a result, the writer had difficulty creating the distractor. The requirement for quality questions is that the questions must be valid and reliable. Valid means that each measuring instrument only measures one dimension/aspect.

Linn and Gronlund (2015: 47) state that a good test must fulfill three characteristics, namely: validity, reliability and usability. Validity means the accuracy of the interpretation of the results of a measurement

procedure, reliability means the consistency of the measurement results, and usability means the practicality of the procedure. In addition, Cohen et al. (2018: 28) also states that a good test is a test that is valid, meaning it measures what it wants to measure. Nitko (2020: 36) states that validity is related to the interpretation or meaning and use of student measurement results. Therefore, the research process started to measure the teacher's ability to create questions.

2.　RESEARCH METHOD

The implementation method used starts from the survey stage, licensing, and providing motivation for teachers who take part in the training. And the second stage continues with the program implementation method which includes the preliminary stage, implementation stage and program evaluation stage.

Data analysis in this research uses qualitative and quantitative analysis techniques. The qualitative analysis technique consists of two techniques, namely the moderator technique and the panel technique. The moderator technique is a discussion technique in which one person acts as a mediator. Based on this technique, each question item is discussed together with several experts such as teachers who teach the material, material experts, curriculum compilers/developers, test experts, and language experts. This technique is very good because each question is looked at together based on the writing rules. Apart from that, reviewers are welcome to comment/improve based on the knowledge they have. The panel technique is a technique for validating question items in which each question item is reviewed based on the rules for writing questions, namely review in terms of material, construction, language/culture.

The correctness of the answer key, and the scoring guidelines carried out by several reviewers. The method is that several reviewers are given the questions to be asked reviewed, review format, and review assessment guidelines. In the initial stage the reviewers were given an explanation, then in the next stage the reviewers worked individually in different places. Reviewers are invited to make corrections directly to the question text and provide comments and rate each question item according to the criteria of good, corrected or replaced.

Quantitative analysis means that the study of question items is based on empirical data from the question items in question. This quantitative review of the questions is carried out after the questions have been tested. This analysis is to determine the level of difficulty and differentiating power of each question item. From the analysis of the level of difficulty, the level of difficulty of each question item will be obtained, whether it is in the easy, medium or difficult category.

3.　RESULTS AND DISCUSSION
A.　*Characteristics of Making Hot Questions*

HOTS questions are highly recommended for use in various forms of class assessment. To inspire teachers to prepare HOTS questions at the educational unit level, the following describes the characteristics of HOTS questions.

1) Measures higher order thinking abilities

The Australian Council for Educational Research (ACER) states that higher level thinking skills are the process of: analyzing, reflecting, providing arguments (reasons), applying concepts to different situations, compiling, creating. Higher order thinking ability is not the ability to remember, know, or repeat. Thus, the answers to HOTS questions are not explicitly stated in the stimulus. High-level thinking abilities include the ability to solve problems (problem solving), critical thinking skills (critical thinking), creative thinking (creative thinking), the ability to argue (reasoning), and the ability to make decisions (decision making). The ability to think at a high level is one of the important competencies in the modern world, so it must be possessed by every student. Creativity in solving problems in HOTS, consisting of:

1. Ability to solve unfamiliar problems;
2. ability to evaluate strategies used to solve problems from various different points of view;
3. find new solution models that are different from previous methods.

For example, knowing the meaning of an uncommon word may have a very high level of difficulty, but the ability to answer this problem does not include higher order thinking skills. Thus, HOTS questions are not necessarily questions that have a high level of difficulty. Higher level thinking abilities can be trained in the classroom learning process. Therefore, so that students have high-level thinking abilities, the learning process also provides space for students to discover activity-based knowledge concepts. Activities in learning can encourage students to develop creativity and think critically.

2) Using various question forms

The various forms of questions in a test device (HOTS questions) as used in the Program for International Students Assessments (PISA), aim to provide more detailed and comprehensive information about the test taker's abilities. It is important for teachers to pay attention to this so that the assessments carried out can guarantee objective principles. This means that the results of the assessment carried out by the teacher

can describe the students' abilities according to the actual situation. Assessments carried out objectively can guarantee assessment accountability. There are several alternative question forms that can be used to write HOTS questions (which are used in the PISA testing model), as follows:

1. Multiple choice. In general, HOTS questions use stimuli that originate from real situations. Multiple choice questions consist of a main question (stem) and answer choices (options). Answer choices consist of an answer key and distractors. The answer key is the correct or most correct answer. A distraction is an answer that is not correct, but allows someone to be fooled into choosing it if they do not master the material/subject matter well.

2. Complex multiple choice (true/false, or yes/no) Complex multiple choice questions aim to test students' understanding of a problem in a comprehensive manner that is related to one statement with another. Like ordinary multiple-choice questions, HOTS questions in the form of complex multiple choices also contain stimuli that originate from contextual situations.

3. Description A question in the form of a description is a question whose answer requires students to organize ideas or things they have learned by putting forward or expressing these ideas using their own sentences in written form.

Basically, higher order thinking skills (HOTS) include higher order thinking abilities (HOTS). Although if you refer to Bloom's revised taxonomy, HOTS (high level thinking) is related to cognitive abilities in analyzing, evaluating and creating, while high level thinking skills (HOTS) are related to the ability to solve problems, think critically and think creatively. In line with the opinion above, Merta, et al. 2017, the success of education lies in a quality learning process. Quality learning can occur through a learning process that is capable of high-level thinking (High Order Thinking Skill). High order thinking skills are one of the four pillars of the 2013 revised 2017 curriculum. These pillars include strengthening character education, 4C (creative, critical, communication, collaboration), literacy and other high thinking skills in learning which must be able to instill strengthening values. character education that is able to adopt high other thinking skills in learning. According to (Krathwoh, 2002) in (Subadar, 2017) states that high-level thinking skills include analysis, evaluating and creating.

From the results of the research that has been carried out, the teacher's ability to explore students' critical thinking abilities is still not visible, it can be seen that during the discussion process the speaker asked how the process was carried out in the classroom. The teacher admitted that he was still only at the application stage, students were not invited to analyze, evaluate and create the material being studied. The results of this service open up the teacher's insight into HOTS questions and apply them. For example, critical thinking questions: (1) recognize the problem; (2) defining the problem; (3) explain the meaning by making careful observations; (3) looking for alternative solutions with mind mapping; (4) looking for alternative solutions with cause and impact analysis; (5) deductive thinking; (6) inductive thinking; and (7) distinguish between arguments and explanations. The Indonesian language questions are the types of questions that contain critical thinking as above which are trained in this service.

This activity was attended by 35 teachers who were training participants. The implementation of this training is under the responsibility of community service implementers who are coordinated by the LPPM INSAN Binjai team. The stages of training activities are as follows.

1. Preparation
   In this stage, the activities carried out are:
   a. Request permission to carry out activities and coordinate with LPPM INSAN
   b. Prepare activity administration
2. Implementation
   In this stage, activities are focused on the core training which consists of several training materials, namely
   a. Material 1 (Learning Evaluation Concept)
   b. Material 2 (HOTS-based Evaluation Concept)
   c. Material 3 (Making HOTS Questions)
3. Evaluation
   The success of the HOTS question preparation training activity is determined by the teacher's level of understanding which is evaluated through questions and answers at the end of the activity and documentation of a collection of HOTS-based evaluation questions created by Madrasah teachers as well as filling out a questionnaire to determine the teachers' responses to the training.

4.　CONCLUSION

From the results of research in the field with our friends: Jihan Fira Aziza, Pitri Ramawati, Nabila Azura Nasution, Mudia Hawa Nur, Sutia Nur Aulia Liza, Amanda Putri Handayani, Nurfazrah Hasibuan,

Pranata Seju Surbakti, Muhammad Reza Fahlevi, Dinda Syahada, Nurmala Syafitri, Nurhayati, Pingkan Nabila, Nazwa Intani.

Based on the previous description, it can be said that training activities community for Madrasah Ishlahiyah Binjai teachers produced the following conclusions:

a. The Higher Order Thinking Skills (HOTS) question development training carried out can improve teachers' abilities and skills in compiling better quality test questions.

b. Efforts to increase the perception of Madrasah Islahiyah Binjai teachers regarding the development of HOTS questions have been delivered in lectures and training for one day followed by mentoring for two days.

c. Finding fundamental problems regarding the non-optimal implementation of HOTS-based question creation.

REFERENCES

Chuseri, P. (2021). Pengembangan modul matematika berbasis realistik terintegrasi higher order thinking skills (HOTS) pada materi bangun ruang. *Alifmatika: Jurnal Pendidikan dan Pembelajaran Matematika, 3*(1), 18–31. https://doi.org/10.35316/alifmatika.2021.v3i1.18-31

Depoter, H. (2009). *Quantum learning: Membiasakan belajar nyaman dan menyenangkan.* Kaifa.

Hasan, K., Islam, Md. S., Shams, A. T., & Gupta, H. (2018). Total quality management (TQM): Implementation in primary education system of Bangladesh. *International Journal of Research in Industrial Engineering, 7*(3), 370–380. https://doi.org/10.22105/riej.2018.128170.1041

Hosnan. (2014). *Pendekatan saintifik dan kontekstual dalam pembelajaran abad 21.* Ghalia Indonesia.

Ismayani, S. (2020). Pelatihan penyusunan soal berbasis HOTS bagi guru bahasa Indonesia tingkat SMP se-Kabupaten Subang. *Abdimas Siliwangi, 3*(1), 173–185. https://doi.org/10.22460/as.v3i1p%25p.3575

Jenariah, R. (2022). Manajemen penguatan pembelajaran bahasa Indonesia berbasis higher order thinking skills (HOTS) untuk mencapai lulusan bermutu. *JIIP Jurnal Ilmiah Ilmu Pendidikan, 5*(6), 1781–1790. https://doi.org/10.54371/jiip.v5i6.638

Maryono, Sastrawati, E., & Budiono, H. (2022). Analisis kesulitan guru sekolah dasar dalam mengembangkan instrumen asesmen higher order thinking skills. *Primary: Jurnal Pendidikan Guru Sekolah Dasar, 11*(5), 1529–1535. https://doi.org/10.33578/jpfkip.v11i5.9182

Nur Dinni, H. (2018). HOTS (High order thinking skill) dan kaitannya dengan kemampuan literasi matematika. *Prisma: Prosiding Seminar Nasional Matematika.* Retrieved from https://journal.unnes.ac.id/sju/index.php/prisma/

Nurdinah Hanifah. (2019). Pengembangan instrumen penilaian higher order thinking skill (HOTS) di sekolah dasar. *Current Research in Education: Conference Series Journal, 1*(1).

Rapih, Subroto, & Sutaryadi. (2018). Perspektif guru sekolah dasar terhadap higher order thinking skill (HOTS): Pemahaman, penerapan, dan hambatan. *Premiere Educandum: Jurnal Pendidikan Dasar dan Pembelajaran, 8*(1). https://doi.org/10.25273/pe.v8i1.2560