
Analysis of Final Semester Assessment and Fiqih Independent Examination Higher Order Thinking Skill Type

Teti Nurhalizah¹⁾, Muhammad Ali Ramdhani²⁾, Nina Nurmila³⁾

¹⁾²⁾³⁾UIN Sunan Gunung Djati Bandung

Soekarno-Hatta Street, Cimencrang, Kec. Gedebage, Kota Bandung, Indonesia, 40614

¹⁾Email: 2210040024@student.uinsgd.ac.id

²⁾Email: aliramdhani@uinsgd.ac.id

³⁾Email: nina.nurmila@uinsgd.ac.id

Abstract: This study aims to describe the questions based on the level of thinking, type of stimulus and operational verbs used to make questions. This study uses a descriptive approach to document analysis that aims to analyze the questions, provide direction and assess questions according to the cognitive level at the Madrasah Tsanawiyah level. The results showed that of the 135 questions, half of them were about Higher Order Thinking Skills and some were about Lower Order Thinking Skills. The questions in the Higher Order Thinking Skills category were mostly found in 7th grade material regarding Thaharah material, 8th grade material regarding zakat fitrah and 9th grade material regarding the timing of qurban and fasting. The types of stimulus contained in the questions are tables and discourses where the most widely stimulated discourse questions are found in more than 60% of the total questions.

Keywords:

Cognitive Level; End of Semester Education; High Order Thinking Skill

Abstrak: Penelitian ini bertujuan untuk mendeskripsikan soal-soal berdasarkan level berpikir level Lower Order Thinking Skills (LOTS) atau Middle Order Thinking Skills (MOTS) atau Higher Order Thinking Skills (HOTS) serta mengelompokkan soal berdasarkan jenis stimulus dan KKO (Kata Kerja Operasional) yang digunakan untuk membuat pertanyaan. Penelitian ini menggunakan pendekatan deskriptif analisis dokumen. Dokumen yang dianalisis yaitu bertujuan untuk menganalisis lebih mendalam serta memberikan soal-soal rekomendasi HOTS yang bisa digunakan dalam pembelajaran nantinya. Hasil penelitian menunjukkan bahwa dari 135 soal hanya terdapat setengahnya merupakan soal Higher Order Thinking Skills (HOTS), dan sebagiannya soal Lower Order Thinking Skills (LOTS). Soal kategori Higher Order Thinking Skills (HOTS) paling banyak ditemukan pada materi kelas VII mengenai materi Thoharah, materi kelas 8 mengenai zakat fitrah dan materi kelas 9 mengenai waktu pelaksanaan kurban dan materi puasa, belum ada soal yang memenuhi kriteria Higher Order Thinking Skills (HOTS). Jenis stimulus yang terdapat pada soal adalah table dan wacana dimana penggalan kasus merupakan stimulus yang paling banyak ditemukan lebih dari 60% dari keseluruhan soal.

Kata Kunci:

High Order Thinking Skill; Level Kognitif; Pendidikan Akhir Semester

DOI: <https://doi.org/10.15575/ath.v8i1.19145>

Received: 02, 2023. Accepted: 04, 2023. Published: 04, 2023.

INTRODUNTION

The educational problems faced by the Indonesian nation in particular, namely the low quality of education at every level and educational unit, there are many factors that cause the quality of education to not experience a significant increase, one of which is the weak learning process in schools which affects student learning outcomes (Lubis, 2005). Therefore educators are required to conceptualize the 2013 curriculum learning which is based on critical thinking in such a way, one of which is by applying the HOTS concept, the concept can encourage students to think critically in their learning. Each lesson will definitely be evaluated. Evaluation instruments containing HOTS can find variations in student learning strategies in solving HOTS questions which are relatively difficult because they require good reasoning. (Saputra & Mirunnisa, 2020), To see the HOTS learning outcomes for students, various tests were carried out, one of which was PAS (Semester Final Assessment).

Based on the case (Kurnia Suryapuspitarini et al., 2018) states that questions with the HOTS type are questions that require high-level thinking skills and involve reasoning processes, so as to hone critical, logical, reflective, metacognitive, and creative thinking skills. HOTS type questions train students to think at the level of analysis, evaluation, and creation. In analyzing questions, educators need to pay attention to various things so that they become a stimulus for students to think critically because questions are contained in the stimulus that encourages students to analyze and evaluate the questions given. Then students are asked to make the best decision by choosing the right answer (Isbandiyah & Sanusi, 2019).

According to the Ministry of Education and Culture, quality exam questions are questions with a difficulty level of 25%, medium 25% and easy 50%. In addition to "the quality of the questions made for PAS must require students to think critically, in accordance with the implementation of the 2013 curriculum it is expected to produce productive, creative and innovative human resources through the use of attitude, knowledge and skill competencies". Not only regarding the PAS questions being tested, the assessment instrument used must also be able to assess higher order thinking skills (HOTS) testing the processes of analysis, synthesis, evaluation and creative (KemDikBud, 2014).

Research on the analysis of HOTS questions in the world of education has been widely discussed by several comrades in arms before, but there are only a few studies that analyze PAS PAI questions. Like Iqbal Faza Ahmad and Sukiman (2019) who researched "Analysis of Hots Questions in the Final Examinations of Class 6 KMI Students in the Islamic Dirasah Subject Group at Tazakka Batang Modern Islamic Boarding School", there explained questions based on cognitive level and analyzed each question into a category anything. However, there are still no contextual recommendations for questions that are not included in the HOTS category (Faza Ahmad & Sukiman, 2019). Nur Rochmah Lailly and Asih Widi graduates in their journal analyzed HOTS questions in the 2012/2013 SMA Rayon B chemistry exam questions. In his

research, he discussed the analysis of questions based on cognitive level, based on the character of the stimulus and the ability to think critically, did not discuss the questions contextually and did not provide input/recommendations for the questions so that they were more tied to the HOTS category. (Lailly & Wisudawati, 2015). Zaenal Arifin and heri Retnawati in their journal "Analysis of Instruments for Measuring Higher Order Thinking Skills (HOTS) Mathematics for High School Students" analyze math problems based on the percentage of cognitive level and level of difficulty alone (Arifin & Retnawati, 2015). Betha Kurnia Suryapuspitarini, Wardono and Kartono, in their journal entitled "Analysis of Higher Order Thinking Skill (HOTS) Type Mathematical Problems in the 2013 Curriculum to Support Students' Literacy Abilities" analyzes Mathematics questions based on Literacy ability level, cognitive level, and analyzes several questions based on the problem but does not recommend HOTS questions in the discussion (Kurnia Suryapuspitarini et al., 2018). Based on the results of these studies, it shows that there are things that have not been discussed, namely regarding the holistic use of HOTS cognitive levels, discussing the overall analysis of questions from all criteria and providing directions for the use/making of HOTS questions by providing examples and recommendations on what HOTS questions should be. Therefore the researcher aims to analyze more deeply and provide HOTS recommendation questions that can be used in later learning. In addition, the questions analyzed are PAS and UM MTS questions for the 2021/2022 academic year which have not been analyzed by others.

RESEARCH METHODS

This research is a descriptive research type of content analysis to understand the meaning implied critically. The documents to be analyzed are official documents, namely the Final Semester Assessment Questionnaire (PAS) document for the Fiqh subject for the 2021/2022 Academic Year in the even semester at MTS Mulia Insani. The questions analyzed were 135 items consisting of 120 multiple choice items and 15 descriptive items. (Nugrahani, 2014).

The instrument used in this research is the item analysis sheet. This analysis sheet is in the form of a form where the analyzer fills in the categories of questions based on the level of thinking, the type of stimulus used and the use of words in the questions.

Data from the results of the researcher's analysis were checked by the colleagues/educators concerned and discussed to equate perceptions if there were differences of opinion, so that valid analysis results were obtained. Furthermore, the results of the analysis are made into percentages based on each category.

RESEARCH RESULTS AND DISCUSSION

Final Semester Assessment (PAS) of the Fiqh subject for the 2021/2022 Academic Year in the even semester at MTS Mulia Insani. The items analyzed were 135 items consisting of 120 multiple choice items and 15 descriptive items, which

consisted of 3 classes, namely class VII, VIII and class IX. Based on the pre-research survey, it is known that the Even Semester Final Assessment questions for Fiqh Class VII, VIII and IX subjects at MTS Mulia Insani for the 2021/2022 academic year were prepared by a team of Fiqh teachers based on the material presented for one semester taking into account the level of difficulty of each item questions but did not pay attention to the level of thinking significantly. Following are some of the question themes contained in PAS based on the cognitive level contained.

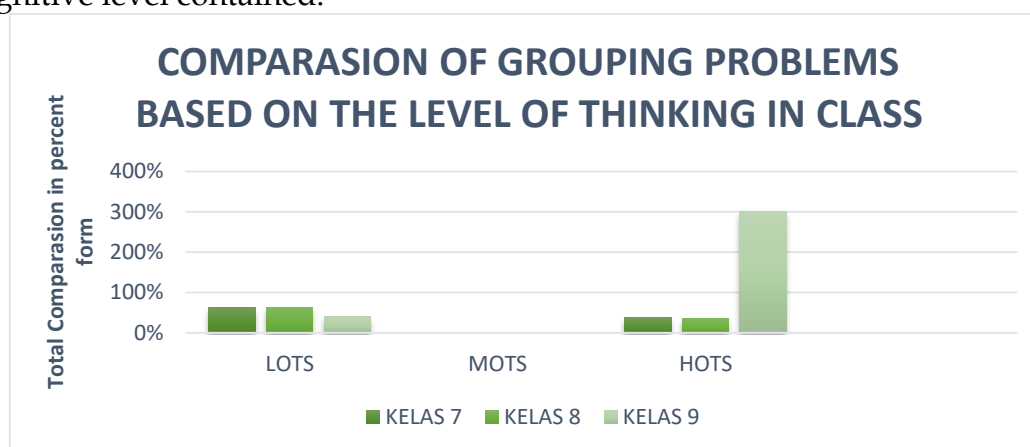


Figure 1. Grouping questions based on thinking levels

Based on Figure 1, it can be seen that when viewed based on the level of thinking, namely the following reasons:

- There were 62% of the questions in the LOTS category in grade 7, 64% of the questions in the LOTS category in grade 8, and 40% of the questions in the LOTS category in grade 9.
- As for those in the MOTS category, none at all at grade 7, grade 8 or grade 9.
- And finally there are 38% of the questions in the HOTS category in grade 7, 36% of the questions in the HOTS category in grade 8, 38% of the questions in the HOTS category in grade 9.

The questions in grade 9 stated that there were more HOTS questions because it was seen from the class level and higher thinking ability compared to grades 8 and 7.

When viewed from the whole, the number of LOTS questions is 56%, there are no questions at the MOTS level and there are 44% questions in the HOTS category. Can be seen in the following figure:

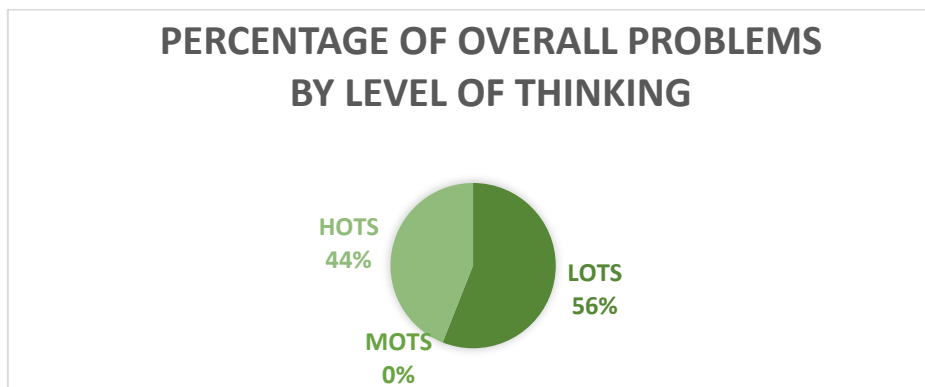


Figure 2. Percentage of Overall Questions Based on Thinking Level

In addition, there is also a grouping of questions based on the type of stimulus, as follows:

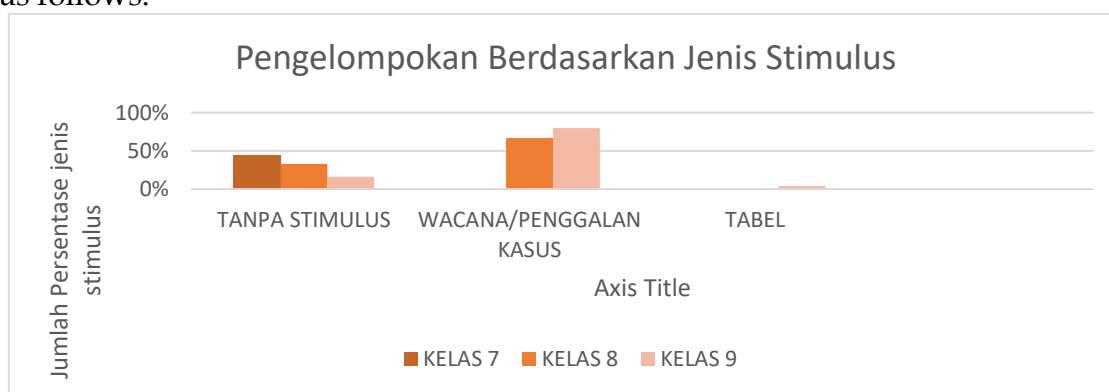


Figure 3. Grouping based on the type of stimulus

Based on the results of the analysis in Figure 3, there are several types of stimulus used in the problem, but the number is still quite small and uneven. The form of stimulus that appears the most is a fragment of a case/ discourse, namely as many as 36 questions in grade 9 and the second most are 30 questions in grade 8 and finally 25 questions in grade 7. Other forms of stimulus such as tables are only found in grade 9 questions and even then only 2 questions from 45 questions. Very little form of stimulus was found, even in all of the questions there were still many that did not use the stimulus as the basis for the question, namely 42 out of 135 questions.

And the percentage of excitement from the stimulus given from the problem can be seen below:

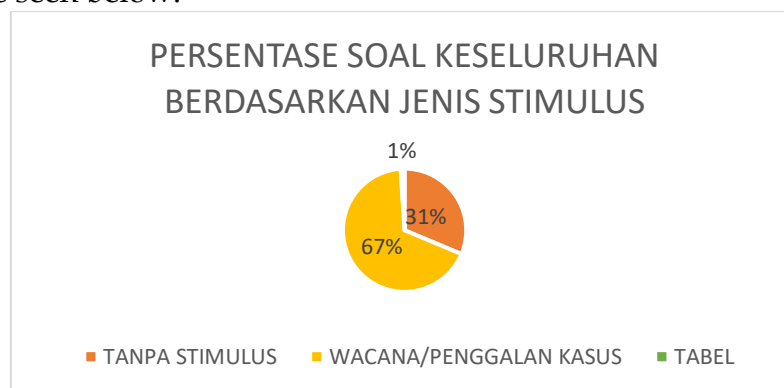


Figure 4. Percentage of Overall Questions by Type of Stimulus

Based on Figure 4, questions that do not use a stimulus amount to 31% of the questions in the 135 questions that have been analyzed, along with questions that do not use a stimulus.

24. Berikut ini yang termasuk syarat wajib shalat ialah ...
- | | |
|---------------------------|-------------------------------------|
| A. menutup aurat | C. sudah masuk waktu shalat |
| B. tidak sedang bepergian | D. sudah sampai seruan untuk shalat |

Figure 5. Questions without stimulus

4. Shows questions that are given a stimulus in the form of a statement/discourse. From the data analysis, it was found that 67% used the stimulus discourse/part of the question cases that the educators had used

7. Pak Ardi ingin menyembelih ayam jagonya untuk dimasak sebagai jamuan makan malam dalam rapat RT. Pada saat akan disembelih, ternyata ayamnya dalam keadaan sakit. Karena panik, ia kesulitan mencari pisau untuk menyembelih. Namun, akhirnya, ia menemukan pisau yang terbuat dari tulang dan berhasil menyembelih ayamnya sebelum mati. Maka, hukum ayam sembelihan Pak Ardi adalah
- haram, karena ketika disembelih ayam dalam keadaan sakit.
 - haram, karena ayam disembelih dengan alat yang terbuat dari tulang.
 - halal, karena ketika disembelih ayam masih dalam keadaan bernyawa.
 - halal, karena ayam disembelih dengan alat yang terbuat dari tulang karena dalam kondisi darurat.

Figure 6. Discourse stimulus types/case fragments

Figure 4. There is also a 1% stimulus that uses tables in using questions, as shown below:

21. Perhatikan tabel berikut!

1	2	3	4
Jual beli dengan cara mengecoh	Jual beli dengan niat menimbun barang	Jual beli sperma hewan	Jual beli sistem ijon
Jual beli dengan niat menimbun barang	Jual beli anak binatang dalam kandungan	Jual beli dengan cara mengecoh	Jual beli barang haram
Jual beli dengan cara mengurangi timbangan	Jual beli dengan cara mengurangi timbangan	Jual beli barang yang belum dimiliki	Jual beli sperma hewan
Jual beli pada saat khutbah dan shalat Jum'at	Jual beli barang yang masih dalam tawaran orang lain	Jual beli pada saat khutbah dan shalat Jum'at	Jual beli barang yang belum dimiliki

Berdasarkan pada tabel tersebut, jual beli yang sah tapi terlarang terdapat pada tabel...

- | | |
|--------|--------|
| A. (1) | C. (3) |
| B. (2) | D. (4) |

Figure 7. Table stimulus type questions

The results of this study are different from the results of research from okta widarta and wiwit artika which stated that the majority of the stimulus forms used in science subject matter 88% did not use any stimulus. Questions directly ask for a particular fact, concept, or procedure (Widarta & Artika, 2021) whereas in solving HOT questions the level of evaluating is in the aspect of checking and criticizing, at the stage of understanding the subject matter, mentioning what is known and asked questions correctly and using their own language (Victoria Nalurit et al., 2013).

Furthermore, the grouping of questions is analyzed based on the level of difficulty, as follows:

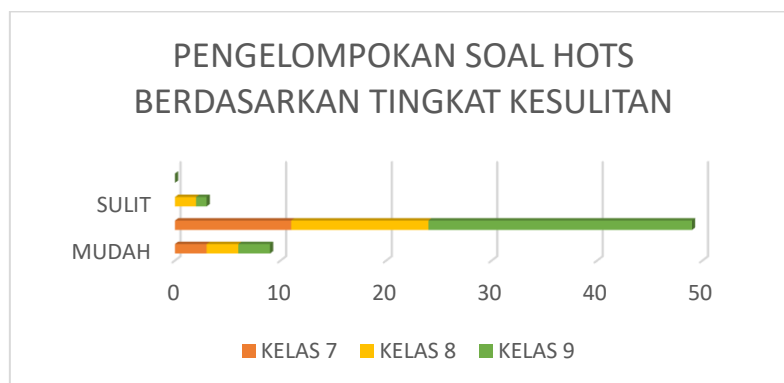


Figure 8. HOTS question grouping based on level of difficulty

Based on Figure 8, the highest percentage level is at the medium difficulty level with 80% of the questions, and the highest in both tests is 15% of the questions in the easy level category and those in the difficult category are 5% of the questions. This is not in accordance with Allen and Goth's opinion in their book which states that the moderate difficulty index should be between 0.30/3% to 0.70/7% of all questions and for the easy level it should be between 0.30/3. % of 10% of all questions (Allen et al., 1979).

The item documents were analyzed based on the HOTS perspective, namely by paying attention to the level of thinking (LOTS/MOTS/HOTS) and the type of item stimulus (reading text, paragraphs, drama texts, fragments of novels/stories/fairy tales, poetry, fragments of cases, pictures, graphics, photographs, formulas, tables, lists of words/symbols, examples, maps, films, sound recordings, or other forms of stimulus). An item is categorized as LOTS if in Bloom's taxonomy the item revision is at level 1 (remembering and understanding (C1 and 2)). An item is categorized as MOTS if in Bloom's taxonomy the item revision is at C3 (applying). If an item is in level 3 namely C4 (analyzing), C5 (evaluating), and C6 (creating) then these questions are categorized as HOTS questions. (Wardany et al., 2015). The item documents were analyzed based on the HOTS perspective, namely by paying attention to the level of thinking (LOTS/MOTS/HOTS) and the type of item stimulus (reading text, paragraphs, drama texts, fragments of novels/stories/fairy tales, poetry, fragments of cases, pictures, graphics, photographs, formulas, tables, lists of words/symbols, examples, maps, films, sound recordings, or other forms of stimulus). An item is categorized as LOTS if in Bloom's taxonomy the item revision is at level 1 (remembering and understanding (C1 and 2)). An item is categorized as MOTS if in Bloom's taxonomy the item revision is at C3 (applying). If an item is in level 3 namely C4 (analyzing), C5 (evaluating), and C6 (creating) then these questions are categorized as HOTS questions (Ayuningtyas & Budi Rahaju, 2013), here the stimulus that appears the most is a fragment of a case/discourse, namely as much as 27% of questions in grade 9 and the second most 22% of questions in grade 8 and finally 19% of questions in grade 7. And the overall questions based on the type of stimulus use the most narrative or discourse as much as 67%, using table 1% and without using stimulus 31%. Even though the question making was stated to be good, there were still many

questions that were still below the standard level of critical thinking. And this is feared according to research from Widza Nhurul Desyawati where students cannot develop their cognitive abilities because the questions/stimuli are not in accordance with the rules of HOTS questions (Nhurul Desyawati, 2018).

Therefore the researcher provides several recommendations in making HOTS questions, namely: (1) questions based on bloom theory which provide cognitive levels from level 1-level 3. And what must be emphasized is cognitive level 3 which refers to the way students analyze, Evaluate and create questions provided. These abilities include problem solving skills, critical thinking, creative thinking, decision making skills, and reasoning abilities. (Rohim, 2019). (2) Contextual, the meaning of contextual is adjusted to the current situation, the context is adapted to the material to be made of questions. (3) Forms of various questions. (4) Basic Competency (KD) must be analyzed in advance what material is to be used. (5) The questions must be clear and appropriate. (6) Make scoring to assess the extent to which students' abilities (Zaenal Fanani, 2018)

Examples of recommendations for Fiqh questions are as follows:

Kompetensi Dasar	: Menganalisis ketentuan jual-beli, khiyar dan qirad
Materi	: Jual beli
Indikator Soal	: Disajikan tabel berupa pernyataan-pernyataan mengenai jual beli, peserta didik dapat menganalisis jual beli sah tapi terlarang dalam hukum jual-beli.
Level Kognitif	: 3 (penalaran)/ C4

21. Perhatikan tabel berikut!

1	2	3	4
Jual beli dengan cara mengecoh	Jual beli dengan niat menimbun barang	Jual beli sperma hewan	Jual beli sistem ijon
Jual beli dengan niat menimbun barang	Jual beli anak binatang dalam kandungan	Jual beli dengan cara mengecoh	Jual beli barang haram
Jual beli dengan cara mengurangi timbangan	Jual beli dengan cara mengurangi timbangan	Jual beli barang yang belum dimiliki	Jual beli sperma hewan
Jual beli pada saat khutbah dan shalat Jum'at	Jual beli barang yang masih dalam tawaran orang lain	Jual beli pada saat khutbah dan shalat Jum'at	Jual beli barang yang belum dimiliki

Berdasarkan pada tabel tersebut, jual beli yang sah tapi terlarang terdapat pada tabel...

- A. (1)
B. (2)
C. (3)
D. (4)

Figure 13. Table stimulus type questions

Score Guidelines: 1 (if correct) and 0 (if incorrect)

Description: in this question using cognitive level 3/C4 according to Bloom's cognitive theory by asking questions that challenge students to imagine new ideas, or analyze the possibilities that result from a particular situation (Erihadian & Lismawati, 2017). Then the stimulus used is in the form of statement tables, basic competencies and clear grids, as well as the types of questions in the form of multiple choices, scoring is also described. All

characteristic/recommendation components are contained in one question. This is a form of HOTS questions that can be used to increase the level of students' critical thinking, which is in accordance with the results of research from Ririn Handayani and Sigit Priatmoko, that learning that is oriented towards HOTS questions has a positive impact on developing students' critical thinking. (Handayani & Priatmoko, 2013). Many successes in the use of HOTS questions were carried out, as was the result of research from Rini Julistiawati and Bertha Yonata in the application of HOTS questions, that the product test showed that 26 students were declared complete, so that it can be said that students' classical completeness reached 81.25%. This classical completeness exceeds the minimum completeness criteria (KKM) in SMA Negeri 1 Sumenep. This proves that the use of HOTS questions can affect critical thinking in students, so that the formation of the questions must be considered indicators, the choice of words and even the discourse used (Julistiawati & Yonata, 2013).

CONCLUSION

Based on the results of analyzing the PAS (Semester Final Assessment) and UM (Independent Examination) questions at MTS Mulia Insani for the 2021/2022 academic year using the Higher Order Thinking Skill for students in grades 7, 8 and 9, the researcher concludes that the questions needs to be revised again because the questions that have been made are not in accordance with the provisions of the level of question formation. The cognitive level of the questions formed by 55% is still the Lower Order Thinking Skills (LOTS) level while for the Higher Order Thinking Skills (HOTS) as much as 45% there is still a need to increase the formation of questions to help improve students' cognitive, the questions used do not need to be deleted because in context they are still can be used only the way of presentation that must be changed. Meanwhile, in terms of indicators of higher order thinking skills used, they do not meet the requirements as good indicators because there are still a number of questions that are used that are not in accordance with the grid that has been made.

REFERENCE

- Allen, Mary, Yen, & Wendy. (1979). *Intoduction to Measurement Theory*. Cole Publishing Company.
- Arifin, Z., & Retnawati, H. (2015). Analisis Instrumen Pengukur Higher Order Thinking Skills (HOTS) Matematika Siswa SMA. *Seminar Nasional Matematika Dan Pendidikan Matematika Uny*, 20.
- Ayuningtyas, N., & Budi Rahaju, E. (2013). *PROSES PENYELESAIAN SOAL HIGHER ORDER THINKING MATERI ALJABAR SISWA SMP DITINJAU BERDASARKAN*.
- Erihadian, M., & Lismawati, W. (2017). Penerapan Model Quick on the draw dengan Menggunakan Media Permainan Bingo untuk Meningkatkan Keterampilan Berfikir Kreatif PAI Siswa. *Attulab Islamic Religion Teaching and Learning*, 2(1), 25–38. <http://journal.uinsgd.ac.id/index.php/attulab>
- Faza Ahmad, I., & Sukiman. (2019). Analisis Higher Order Thinking Skills (

- HOTS) pada Soal Ujian Akhir Siswa Kelas 6 KMI dalam Kelompok Mata Pelajaran Dirasah Islamiyah di Pondok Modern Tazakka Batang. *Jurnal Pendidikan Agama Islam*, 16(2), 137-164. <https://doi.org/10.14421/jpai.2019.162-02>
- Handayani, R., & Priatmoko, S. (2013). PENGARUH PEMBELAJARAN PROBLEM SOLVING BERORIENTASI HOTS (Higher Order Thinking Skills). *Jurnal Inovasi Pendidikan Kimia*, 7(1), 1051-1062.
- Isbandiyah, & Sanusi. (2019). *Modul penyusunan soal keterampilan berfikir tingkat tinggi (HOTS)*. Ditbin SMA.
- Julistiawati, R., & Yonata, B. (2013). KETERAMPILAN BERPIKIR LEVEL C4, C5, & C6 REVISI TAKSONOMI BLOOM SISWA KELAS X-3 SMAN 1 SUMENEP PADA PENERAPAN MODEL PEMBELAJARAN INKUIRI POKOK BAHASAN LARUTAN ELEKTROLIT DAN NON ELEKTROLIT. *UNESA: Journal of Chemical Education*, 2(2), 57-62.
- KemDikBud. (2014). *KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN*. kemdikbud.go.id
- Kurnia Suryapuspitarini, B., Wardono, & Kartono. (2018). Analisis Soal-Soal Matematika Tipe Higher Order Thinking Skill (HOTS) pada Kurikulum 2013 untuk Mendukung Kemampuan Literasi Siswa. *Prisma: Prosiding Seminar Nasional Matematika*, 1, 876-884. <http://journal.unnes.ac.id/sju/index.php/prisma/>
- Lailly, N. R., & Wisudawati, A. W. (2015). Analisis Soal Tipe Higher Order Thinking Skill (HOTS) dalam Soal UN Kimia SMA Rayon B Tahun 2012 / 2013. *Pendidikan*, XI(1), 27-39.
- Lubis, A. (2005). Pelaksanaan Standar Nasional Dalam Dunia Pendidikan [Universitas Negeri Medan]. In *Digital Repository: Universitas Negeri Medan*. <http://digilib.unimed.ac.id/id/eprint/599>
- Nhurul Desyawati, W. (2018). Strategi untuk Meningkatkan Kemampuan Berfikir Kritis Melalui Pemecahan Masalah Polya. *Attulab: Islamic Religion Teaching and Learning*, 3(1), 1-12. <https://doi.org/doi.org/10.15575.1th.v3i1.4196>
- Nugrahani, F. (2014). *METODE PENELITIAN KUANTITATIF: dalam Penelitian Pendidikan Bahasa*.
- Rohim, D. C. (2019). Strategi Penyusunan Soal Berbasis HOTs pada Pembelajaran. *Riset Dan Kemampuan*, 4(November), 436-446. <https://doi.org/http://dx.doi.org/10.28926/briliant.v3i4.374>
- Saputra, H., & Mirunnisa. (2020). Analisis Kemampuan Berfikir Kritis Matematis Siswa dengan Menggunakan GRaded response models di SMP Negeri 1 Simpang Tiga Kabupaten Pidie. *Prosiding Seminar Nasional Universitas Jabal Gafur*, 1(1), 15-24. <http://journal.unigha.ac.id/index.php/semNas>
- Victoria Nalurit, I., Sutinah, & Budi Rahaju, E. (2013). PROFIL KEMAMPUAN SISWA SMP DALAM MENYELESAIKAN SOAL HOT PADA MATERI LINGKARAN DITINJAU DARI KEMAMPUAN MATEMATIKA SISWA. *MATHEdunesa*, 2(3), 1-8.

- <https://doi.org/doi.org/10.26740/mathedunesa.v2n3.p%25p>
Wardany, K., Ramli, M., & Sajidan. (2015). Penyusunan Instrumen Tes Higher Order Thinking Skill Pada Materi Ekosistem SMA Kelas X. *Proceeding Biology Education Conference*, 12(1).
<http://jurnal.uns.ac.id/prosbi/article/view/7000>
- Widarta, F. O., & Artika, W. (2021). Jurnal IPA dan Pembelajaran IPA Analisis Bentuk Stimulus , Dimensi Kognitif , dan Karakteristik HOTS pada Instrumen Evaluasi Mata Pelajaran IPA Karya Guru Pendahuluan Metode. *Jurnal IPA Dan Pelajaran IPA*, 5(3), 197-208.
<https://doi.org/10.24815/jipi.v5i3.21429>
- Zaenal Fanani, M. (2018). Strategi Pengembangan Soal Higher Order Thinking Skills (HOTS) dalam Kurikulum 2013. *Edudeena*, 2(1), 57-76.
<https://doi.org/http://doi.org/10.30762/ed.v2i1.582>