

# Trends in the Implementation of Higher-Order Thinking Skills in Islamic Religious Education in Madrasahs and Schools: A Systematic Literature Review

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DOI: [10.14421/jpi.2020.92.195-216](https://doi.org/10.14421/jpi.2020.92.195-216)

Received: 13 November 2020

Revised: 02 December 2020

Approved: 27 December 2020

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## **Abstract**

*The new curriculum (2013 curriculum) encourages implementing the higher-order thinking skills (HOTS) approach in learning Islamic religious education in each academic unit in Indonesia. This paper intends to study the HOTS implementation trend in the learning process of Islamic religious education in Madrasahs and schools. The method in this study is a systematic literature review. Researchers found that this trend began to emerge after implementing the 2013 curriculum by the Indonesian Government, where the curriculum used a scientific approach. Teachers, educators, and experts' efforts in implementing HOTS in Islamic Education learning can be grouped into two*

categories. The first is that they innovate the HOTS-based learning process, and the second is those who develop HOTS-based assessment instruments. Several innovations in the learning process were carried out by applying various learning methods, models, and strategies. The application of HOTS-based learning in Islamic Education learning can improve learning quality to be more effective, efficient, fun, and meaningful. This improvement, then, has an impact on increasing the quality of learning achievement. This study provides highlights and helps to understand the results of previous studies that discuss HOTS using systematic reviews in the implementation of Islamic Religious Education in Madrasahs and Schools.

**Keywords:** Higher-Order Thinking Skills, Islamic Religious Education, Madrasahs and Schools, HOTS

### **Abstrak**

Pelaksanaan kurikulum baru (kurikulum tahun 2013) mendorong implementasi pendekatan Higher-Order thinking skills (HOTS) dalam pembelajaran pendidikan agama Islam di setiap satuan pendidikan di Indonesia. Tulisan ini bermaksud untuk melakukan studi terhadap tren implementasi HOTS dalam proses pembelajaran mata pelajaran pendidikan agama Islam di Madrasah dan Sekolah. Metode dalam penelitian ini adalah systematic literature review. Peneliti menemukan bahwa tren ini mulai muncul setelah diberlakukannya kurikulum 2013 oleh pemerintah Indonesia, dimana kurikulum tersebut menggunakan pendekatan saintifik. Usaha para guru, pendidik, dan ahli dalam mengimplementasikan HOTS dalam pembelajaran PAI dapat dikelompokkan dalam dua kelompok, pertama adalah mereka melakukan inovasi proses pembelajaran berbasis HOTS; dan yang kedua adalah mereka yang mengembagakan instrumen penilaian berbasis HOTS. Beberapa inovasi proses pembelajaran dilakukan dengan menerapkan metode, model, dan strategi pembelajaran yang variatif. Diterapkannya pembelajaran berbasis HOTS dalam pembelajaran PAI mampu meningkatkan kualitas pembelajaran menjadi lebih efektif, efisien, menyenangkan, dan bermakna, yang kemudian berdampak pada meningkatnya kualitas pencapaian hasil belajar. Penelitian ini memberikan highlight dan membantu memahami terhadap hasil penelitian-penelitian terdahulu dengan menggunakan systematic review yang membahas tentang HOTS dalam pelaksanaan Pendidikan Agama Islam di Madrasah dan Sekolah.

**Kata Kunci:** Higher-Order Thinking Skills, Pendidikan Agama Islam, Madrasah dan Sekolah, HOTS

### **Introduction**

The Government continues to make efforts to improve the quality of education in Indonesia. One of the ongoing agendas is curriculum development, including the development of an assessment system. The assessment model used in the 2013 curriculum has adopted international

standard assessment models. One of the assessment model characteristics is that it places more emphasis on higher-order thinking skills. This concept of assessment does not only focus on predetermined educational goals but further leads to the formation of students' abilities to think critically, creatively, and innovatively and to be able to solve more complex problems<sup>1</sup>.

Bloom proposes a cognitive taxonomy consistent with critical thinking and a hierarchy of educational learning<sup>2</sup>. The revision of Bloom's taxonomy introduced by Anderson uses a learner-centered approach that aims to improve students' cognitive abilities. Anderson revised the dimensions of cognitive processing while maintaining six categories, but with substantial changes. Bloom's six cognitive processes were revised from nouns to verb tenses to signify the importance of learners' actions. In the revised taxonomy, the knowledge aspect is changed to remembering. Also, at the level of comprehension in the original taxonomy, it is changed to understanding.

Meanwhile, the application category was changed to applying; analysis becomes analyzing, and evaluation becomes evaluating. Finally, the categories of synthesis were changed to creating, and the order of creating and evaluating was exchanged in the revised taxonomy<sup>3</sup>. In contrast to the original, Anderson's revised taxonomy allows the categories to overlap one another<sup>4</sup>. Higher-order thinking skills (HOTS) are in analyzing, evaluating, and creating in Bloom's taxonomy<sup>5</sup>.

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<sup>1</sup> Iqbal Faza Ahmad and Sukiman Sukiman, "Analisis Higher Order Thinking Skills (Hots) Pada Soal Ujian Akhir Siswa Kelas 6 Kmi Dalam Kelompok Mata Pelajaran Dirosah Islamiyah Di Pondok Modern Tazakka Batang," *Jurnal Pendidikan Agama Islam* 16, no. 2 (2019): 137–64.

<sup>2</sup> Mathews Zanda Nkhoma et al., "Unpacking the Revised Bloom's Taxonomy: Developing Case-Based Learning Activities," *Education+ Training* 59, no. 3 (2017): 250–64, doi:10.1108/ET-03-2016-0061.

<sup>3</sup> Lorin W Anderson and Benjamin Samuel Bloom, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives* (New York: Longman, 2001).

<sup>4</sup> David R Krathwohl, "A Revision of Bloom's Taxonomy: An Overview," *Theory into Practice* 41, no. 4 (2002): 212–18.

<sup>5</sup> Wiwik Setiawati and dkk., *Buku Penilaian Berorientasi Higher Order Thinking Skills* (Jakarta: Direktorat Jendral Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan, 2018).

HOTS-based learning has been developed and applied in traditional schools from elementary, secondary, and tertiary levels<sup>6</sup>. Learning is an attempt to direct students into the learning process to achieve learning objectives in line with what is expected<sup>7</sup>. The learning strategy contributes to the learning process. Many educational experts provide alternatives to effective learning strategies to achieve learning goals. HOTS-based learning supports 21<sup>st</sup>-century learning that is oriented toward the growth of students both spiritually and emotionally. Its means that learning must be student-centered so that it can improve many skills<sup>8</sup>. Among these skills, higher-order thinking skills are skills that students need in the future.

The development of an assessment model with HOTS characteristics is also one of the Directorate of Islamic Religious Education's agenda in implementing Islamic Religious Education assessments in schools and madrasahs. It can be seen from the number of HOTS-based question preparation workshops held by the Ministry of Religion in various regions. This assessment model is expected to improve the items' quality as a test instrument used by Islamic Education teachers.

Many previous researchers have carried out studies on the implementation of HOTS in learning. Herawati studied the development of HOTS assessments on problem-based learning in elementary schools<sup>9</sup>. Hanifiyah et al. conducted a study on Islamic Education learning activities in building the competence of High Order Thinking Skills. The study results stated that to build the competence of High Order Thinking Skills in students,

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<sup>6</sup> I Wayan Widana, *Modul Penyusunan Soal Higher Order Thinking Skill (HOTS)* (Jakarta: Direktorat Pembinaan SMA Kemdikbud, 2017).

<sup>7</sup> Ida Zusnani and Ali Murfi, "Strategi Pembelajaran Aktif Question Student Have (QSH) pada Mata Pelajaran Fiqh di MTs Negeri 9 Bantul," *EDULAB: Majalah Ilmiah Laboratorium Pendidikan* 5, no. 1 (2020): 84-102.

<sup>8</sup> Ali M Al Kandari and Mousa M Al Qattan, "E-Task-Based Learning Approach to Enhancing 21st-Century Learning Outcomes.," *International Journal of Instruction* 13, no. 1 (2020): 551-66.

<sup>9</sup> Rahayu Herawati and Ghullam Hamdu, "Pengembangan Asesmen Hots pada Pembelajaran Berbasis Masalah Tema Bermain dengan Benda-Benda di Sekitar," *PEDADIDAKTIKA: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar* 1, no. 2 (2014): 151-59.

a teacher must have competencies such as pedagogy, personality, social, and professional<sup>10</sup>.

Furthermore, Taufiqurrahman et al. conducted a study on development using the R and D approach, with the results in the form of a higher-order thinking skill assessment instrument in Islamic Education subjects<sup>11</sup>. A similar study was also carried out by Bahri and Supahar, who produced an integrated religious and science test instrument product to measure critical thinking skills in Islamic education learning in Senior High School (SHS)<sup>12</sup>. On the other hand, Sinaga et al. conducted an analysis of Islamic religious education test instruments from the material, construct, and language aspects based on higher-order thinking skills<sup>13</sup>.

This study has specificity in terms of the object being analyzed, i.e., the results of studies related to the implementation of higher-order thinking skills in Islamic Religious Education learning in Madrasahs and Schools. The researchers conducted a systematic review of the related literature that the researchers compiled from various sources.

The gap between this study and previous studies highlights the results of previous studies that discuss HOTS in the implementation of Islamic Religious Education in Madrasahs and Schools using a systematic review.

The method in this study is a systematic review, which is used to answer the research questions. A systematic review is defined as a scientific process governed by a set of explicit and demanding rules oriented to demonstrate completeness, immunity from bias, and transparency and accountability of

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<sup>10</sup> Rissalah Hanifiyah, Heri Cahyono, and Yusuf Faisal Ali, "Membangun Kompetensi High Order Thinking Skills Melalui Aktivitas Pembelajaran Pendidikan Agama Islam di SMP Negeri 1 Metro," *Jurnal Pendidikan Islam Al-Affan* 1, no. 1 (2020): 23–29.

<sup>11</sup> Taufiqurrahman Taufiqurrahman, M. Tubi Heryandi, and Junaidi Junaidi, "Pengembangan Instrumen Penilaian Higher Order Thinking Skills pada Mata Pelajaran Pendidikan Agama Islam," *Jurnal Pendidikan Islam Indonesia* 2, no. 2 (2018): 199–206, <https://doi.org/10.35316/jpii.v2i2.74>.

<sup>12</sup> Fajrul Muhammad Bahri and Supahar Supahar, "Kemampuan Berpikir Kritis Menggunakan Tes Terintegrasi Agama dan Sains dalam Pembelajaran Pai di SMA," *Edukasi Islami: Jurnal Pendidikan Islam* 8, no. 02 (2019): 233–52.

<sup>13</sup> Ali Imran Sinaga and Alnida Azty, "Quality Analysis of Islamic Education Problem Based on Higher Order Thinking Skill Class V SDS Budi Mulia Medan," *Britain International of Linguistics Arts and Education (BIoLAE) Journal* 2, no. 2 (2020): 610–15.

techniques and execution<sup>14</sup>. In this study, most of the studies used qualitative data, so a systematic process for assessing evidence's weight did not limit our findings.

This systematic review is driven by several research questions (RQ):

RQ1: What do teachers, educators, and experts do to help develop higher-order thinking skills in Islamic Education learning?

RQ2: What methods or models, or strategies in implementing HOTS are effectively used to help develop higher-order thinking skills of students for Islamic Education learning?

RQ3: What is the impact of the application of HOTS-based learning on students in Islamic Education learning?

To ensure that the review is systematic, the researchers follow the following procedures<sup>15</sup>:

1. Scoping the review: the researchers begin by developing explicit criteria for determining which studies to include in the review.
2. Searching for literature: the researchers identify relevant studies in various literature. The databases used in this systematic literature review were Google Scholar, Emerald, and Taylor & Francis Online database. The steps taken by the researcher are first by making relevant keywords for this study. Researchers used the following keywords: ("higher-order thinking skills\*" OR "kemampuan berpikir tingkat tinggi") AND ("Islamic religious education" OR PAI) AND (implementation of OR method OR strategy OR development OR assessment OR assessment).
3. Filtering the literature: each literature was screened based on inclusion criteria. It helps avoid hidden bias by having clear, consistent rules about which studies to use to answer research questions. By assessing each study against the same criteria and recording the results, the basis for the

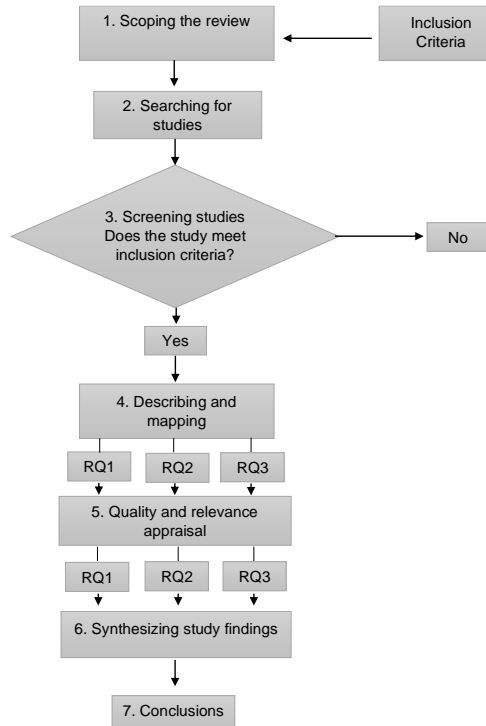
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<sup>14</sup> Mary Dixon-Woods, "Systematic Reviews and Qualitative Methods," *Qualitative Research: Theory, Method and Practice*. 3rd Edn. London: Sage, 2010, 331–46.

<sup>15</sup> Dan Davies et al., "Creative Learning Environments in Education—A Systematic Literature Review," *Thinking Skills and Creativity* 8 (2013): 80–91.

review's conclusions is made transparent. The inclusion and exclusion criteria used in this study are as follows:

- a. The literature must be relevant to at least one of the research questions
  - b. The literature was published in 2016-2020
  - c. The literature is based on empirical research, both qualitative and quantitative
  - d. The literature has an explicitly described methodology
  - e. The literature is geographically related to education in Indonesia
4. Describing and mapping: the researchers describe the methodology and findings of each included study, including variables such as population focus, study design, and the main characteristics associated with the research question. These were used to construct a 'descriptive map' that provides a systematic description of each question's research activity.
  5. Assessment of quality and relevance: researchers evaluate each study in a descriptive map.
  6. Literature findings were synthesizing.
  7. Conclusions/recommendations: the researcher draws up a series of recommendations closely linked to the synthesis findings to create a transparent basis on which each recommendation is made. It includes the identification of potential limitations in generalizing or transferring findings.



**Figure 1. Research Framework**  
 (adapted from Davies et al.)<sup>16</sup>.

## Higher-Order Thinking Skills in Education

21<sup>st</sup>-century learning is oriented toward the growth of learners both spiritually and emotionally. It means that learning must be student-centered so that it can improve many skills<sup>17</sup>. Higher-order thinking skills (HOTS) are abilities that require complex thinking and have several criteria<sup>18</sup>. According to Bloom's taxonomy, some of the cognitive criteria defined include remembering, understanding, applying, analyzing, evaluating, and creating<sup>19</sup>. The generally accepted classification defines the top three-level skills of

<sup>16</sup> Ibid.

<sup>17</sup> Al Kandari and Al Qattan, "E-Task-Based Learning Approach to Enhancing 21st-Century Learning Outcomes."

<sup>18</sup> Qingquan Meng, Jiyou Jia, and Zhiyong Zhang, "A Framework of Smart Pedagogy Based on the Facilitating of High Order Thinking Skills," *Interactive Technology and Smart Education* 17, no. 3 (2020): 251–66, doi:10.1108/ITSE-11-2019-0076.

<sup>19</sup> Anderson and Bloom, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*.



Bloom's taxonomy (analyzing, evaluating, and creating) as higher-order thinking skills (HOTS), and those of the lower three levels (knowing, understanding, and applying) as lower-order thinking skills. (LOTS)<sup>20</sup>.

Moreover, in the knowledge dimension, Anderson et al. determine the four types of knowledge contained in Bloom's taxonomy, i.e.<sup>21</sup>:

1. Factual knowledge — the essential elements that students must know to study a discipline or solve problems in that discipline.
2. Conceptual knowledge—the relationships between elements in a large structure that allows the elements to function together.
3. Procedural knowledge—how to do something, practice research methods, and criteria for using skills, algorithms, techniques, and methods.
4. Metacognitive knowledge—knowledge of cognition in general, awareness and knowledge of individual cognition.

Higher-order thinking (HOTS) contains the last three sections of the taxonomy, including analyzing, evaluating, and creating<sup>22</sup>. Higher-order thinking is also considered a type of mindset that requires more mental effort to face doubts, find knowledge, and solve problems in innovative ways<sup>23</sup>.

Apart from the above understanding, researchers and educators also define HOTS in another sense outside of Bloom's taxonomic perspective. Hwang et al. identified three HOTS abilities: problem-solving, critical thinking, and creativity. Problem-solving refers to identifying problems, gathering and analyzing relevant information, selecting and implementing relevant solutions. Critical thinking refers to analyzing information objectively, thinking clearly and rationally, and making sound judgments. Creativity refers to creating new objects and developing innovative ideas and methods by elaborating, refining,

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<sup>20</sup> Emil Hadzhikolev et al., "Models for Multicomponent Fuzzy Evaluation, with a Focus on the Assessment of Higher-Order Thinking Skills," *TEM Journal* 9, no. 4 (2020): 1656–62.

<sup>21</sup> Anderson and Bloom, *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*.

<sup>22</sup> John Pegg, "Promoting the Acquisition of Higher Order Skills and Understandings in Primary and Secondary Mathematics," *Research Conference*, 2010, 35–38.

<sup>23</sup> Fred M Newmann, "Promoting Higher Order Thinking in Social Studies: Overview of a Study of 16 High School Departments," *Theory & Research in Social Education* 19, no. 4 (1991): 324–40.

analyzing, and evaluating existing ones<sup>24</sup>. Brookhart defines higher-order thinking skills more practically. According to Brookhart, the HOTS definition can be divided into three categories: (1) definition of higher-order thinking skills in terms of the transfer, (2) definitions in terms of critical thinking, and (3) definitions in terms of problem-solving<sup>25</sup>.

Higher-Order thinking in terms of transfer cannot be separated from the division of learning according to Anderson, i.e., learning for recall and learning for transfer. Learning to remember certainly requires thinking skills, but it is learning for transfer that Anderson and colleagues consider to be meaningful learning. This approach has informed the construction of the Cognitive dimension of Bloom's revised taxonomy. The goal of teaching cognitive taxonomy is to equip students to make transfers. "Being able to think" means learners can apply the knowledge and skills they developed during their learning to new contexts. Higher-order thinking is understood as students can relate their learning to other elements beyond those taught to be associated<sup>26</sup>.

Higher-Order thinking in the sense of critical thinking is focused on deciding what to believe or do. Critical thinking is a common ability that is sometimes described as a learning goal. In this case, "being able to think" means students can apply wise judgments or produce reasonable criticism. The purpose of teaching here is to equip students with argumentation (reason), reflection, and making the right decisions. Higher-order thinking means students can do this. One of the characteristics of "educated" people is that they reason, reflect, and make the right decisions independently without prompts from teachers or assignments<sup>27</sup>.

Higher-Order thinking in terms of problem-solving as a non-automatic strategy needed to achieve a goal can also be seen as a broad educational goal. Every discipline has problems. Some are closed problems, such as a series of math problems designed to get repeated practice with a specific algorithm.

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<sup>24</sup> Gwo-Jen Hwang et al., "A Long-Term Experiment to Investigate the Relationships between High School Students' Perceptions of Mobile Learning and Peer Interaction and Higher-Order Thinking Tendencies," *Educational Technology Research and Development* 66, no. 1 (2018): 75-93.

<sup>25</sup> Susan M Brookhart, *How to Assess Higher-Order Thinking Skills in Your Classroom* (Virginia: ASCD, 2010).

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

However, many problems are open-ended, have multiple correct solutions or multiple paths to the same solution, or are genuine questions for which the answer is unknown by the educators. Teachers propose solution strategies for complex problems, effectively teach specific learning targets to specific students in a certain amount of time, and with the material available each time they write a lesson plan. If higher-order thinking is considered problem-solving, teaching aims to equip students to identify and solve problems in their work and academic life. It includes solving the problems assigned to them (solving the problems we usually think of in school) and solving new problems that define themselves, creating new solutions. In this case, "able to think" means students can solve problems and work creatively<sup>28</sup>.

Researchers argue that HOTS is a 21<sup>st</sup>-century skill, comprising the essential skills youth need to prepare for the future. Therefore, educators need to prepare and create a learning environment that stimulates the development of HOTS students<sup>29</sup>.

Then, it can be concluded Higher-Order Thinking Skills are thinking skills that are not only remembering, restating, and also referring without processing, but also thinking skills to critically and creatively analyze information, to create, and solve problems.

### **Trends in the Implementation of Higher-Order Thinking Skills in Islamic Religious Education in Madrasahs and Schools**

Results of HOTS literature searches in Google Scholar, Emerald, and Taylor & Francis Online databases, using keywords that the researchers have created ("higher-order thinking skills \*" OR "kemampuan berpikir tingkat tinggi") AND ("Islamic religious education" OR PAI) AND (implementation of OR method OR strategy OR development OR assessment OR assessment), obtained data of 1289 articles. The results were then narrowed down to 759 articles using the criteria for the 2016-2020 timeframe. Furthermore, the results of the 759 articles were filtered through abstracts; from this process, the researcher removed 694 that did not meet the criteria and left 65 articles. After

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<sup>28</sup> Ibid.

<sup>29</sup> Robyn Collins, "Skills for the 21st Century: Teaching Higher-Order Thinking," *Curriculum & Leadership Journal* 12, no. 14 (2014).

the researchers read the full text, only 26 literature articles were left that matched the inclusion criteria.

**Table 1. Database Literature**

No	Database	Collected	Selected
1	Google Scholar	937	26
2	Emerald Insight	338	0
3	Taylor & Francis Online	14	0
	Total	1289	26

The details of the 26 pieces of literature were classified into several categories. First, according to the type, the entire literature consists of 8 journal articles, 2 proceeding articles, 11 Bachelor's theses, and 5 Master's theses. Second, seen from the topics discussed, 6 articles discussed instrument development; 14 articles examined learning models, methods, and strategies; and 6 articles fell into the miscellaneous category. Third, from the form of research design, 5 articles were included in the development research design category, 7 articles used quantitative research design, 4 articles were included in the classroom action research category, 7 articles used a qualitative design, and 3 articles used mixed methods.

**Table 2. Summary of Analyzed Literature**

No	Author	Year	Context
1	Kajin	2017	Collaborative constructivist-based learning model
2	Hidayati	2017	Problem Solving learning method
3	Sinta	2017	The cooperative learning model of learning
4	Sukiman	2017	Problem-based learning strategies
5	Taufiqurrahman, et al.	2018	Islamic Education HOTS instrument in vocational high school
6	Nadlir & Alfiyah	2018	Comparison between Burhani's scientific approach and the 2013 Curriculum scientific approach
7	Sari	2018	HOTS based evaluation
8	Ulayyah	2018	Final Semester Exam test instrument development

9	Jumania	2019	Index Card Match learning method
10	Nurhidayah	2019	A problem-Based Learning learning model
11	Ula	2019	Constructivist learning model
12	Mursyidah	2019	Islamic Religious Education teaching material development
13	Bahri & Supahar	2019	Analysis of the characteristics of the integrated religious and science test instrument
14	Qomariah	2019	Discovery learning strategy
15	Alfian	2019	HOTS learning in Islamic Education subjects in senior high school
16	Lestari	2019	Development of objective question instruments
17	Sinaga, et al.	2020	Analyze the quality of the items
18	Suntiah	2020	Reflective learning model
19	Ahyun	2020	Problem posing learning methods
20	Hendrawanto	2020	Learning strategies to improve thinking skills
21	Hidayat	2020	Inquiry learning strategies
22	Hanifyyah, et al.	2020	Competence of high order thinking skills
23	Fatwati	2020	Penerapan keterampilan abad 21 (4C) The implementation of 21 <sup>st</sup> century (4C) skills
24	Setiawan & Jatmikowati	2020	The influence of HOTS on religious and spiritual behavior
25	Aslamiyah	2020	Development of evaluation instruments
26	Qomariyah & Rifan	2020	Mind mapping learning strategies

Researchers then use this literature to answer the research questions (RQ) that the researcher previously formulated. In this study, the researchers asked 3 research questions covering the implementation of HOTS in learning Islamic religious education in schools and madrasahs.

*RQ1: What do teachers, educators, or experts do to help develop higher-order thinking skills (HOTS) of students in Islamic Education learning?*

The findings from the entire literature, which lead to answer the first research question (RQ1), can be grouped into 2 topics concerning efforts to develop students' higher-order thinking skills in Islamic Islamic education learning. The first is learning process innovation. Teachers and some

researchers mostly make efforts to improve higher-order thinking skills by innovating in the Islamic Education learning process. These innovations include learning models, methods, strategies, and media, as identified by Qomariyah and Rif'an<sup>30</sup> Kemudian Kajin by applying mind mapping to the subject of Qur'an and Hadith in Madrasah Aliyah. Then, Kajin<sup>31</sup> conducted a study on implementing a collaborative constructivist-based learning model in Islamic Religious Education to improve elementary school students' critical thinking skills. Meanwhile, Sukiman<sup>32</sup> implemented problem-based learning strategies to form students' critical thinking skills in Islamic Education learning in Junior High Schools. In general, they argue that innovating the Islamic Education learning process can significantly improve students' higher-order thinking skills.

The second is the development of the test instrument. In addition to learning innovation, instrument development is a step taken by both teachers and researchers to develop higher-order thinking skills of students in Islamic Education learning. Aslamiah developed and tested an evaluation instrument's feasibility in the form of an essay test based on higher-order thinking skills (HOTS) in the eighth grade akidah akhlak subject at Madras Tsanawiyah<sup>33</sup>. Lestari developed an objective question instrument for final semester exams (UAS) in Islamic Religious Education subjects and HOTS-based Characteristics at the high school level<sup>34</sup>. The development of test

<sup>30</sup> Siti Qomariyah and Ali Rif'an, "Peningkatan Kemampuan High Order Thinking Skill (HOTS) Siswa Melalui Media Mind Mapping pada Mata Pelajaran Al-Qur'an Hadist Kelas XI MA Mu'allimat Kota Malang," *Piwulang: Jurnal Pendidikan Agama Islam* 3, no. 1 (2020): 16-34.

<sup>31</sup> Sudar Kajin, "Pengembangan Model Pembelajaran Berbasis Konstruktivistik Kolaboratif Mata Pelajaran Pendidikan Agama Islam untuk Meningkatkan Kemampuan Berfikir Kritis Siswa Kelas V SDN Meri 1 Kota Mojokerto," *Ta'dibia: Jurnal Ilmiah Pendidikan Agama Islam* 7, no. 1 (2017): 61-70.

<sup>32</sup> Sukiman Sukiman, "Efektivitas Penerapan Strategi Pembelajaran Berbasis Masalah untuk Membentuk Kemampuan Berpikir Kritis Peserta Didik dalam Pembelajaran Pendidikan Agama Islam di SMP Negeri 26 Makassar" (Universitas Islam Negeri Alauddin Makassar, 2018).

<sup>33</sup> Nuryunita Aslamiah, "Pengembangan Instrumen Evaluasi Bentuk Tes Uraian Berbasis Higher Order Thinking Skills (HOTS) pada Mata Pelajaran Akidah Akhlak di Mts Negeri 1 Pandeglang" (UIN SMH BANTEN, 2020).

<sup>34</sup> Puji Lestari, "Pengembangan Instrumen Soal Objektif UAS pada Mata Pelajaran Pendidikan Agama Islam dan Budi Pekerti di SMA Berbasis Higher Order Thinking Skill (HOTS)" (Universitas Pendidikan Indonesia, 2019).

instruments is a significant step to encourage students' higher-order thinking skills.

*RQ2: What methods, models, or strategies in implementing HOTS are effectively used to help develop students' higher-order thinking skills for Islamic Education learning?*

The evidence that the researchers found from 27 literature shows that educators use several methods, models, or strategies to help develop students' higher-order thinking skills in Islamic religious education subjects' learning process. Some of these studies were conducted by Nurhidayah, who applied the Problem-Based Learning learning model with a contextual approach to Islamic Education subjects in elementary schools<sup>35</sup>. The same thing was done by Ahyun<sup>36</sup>, Hidayati<sup>37</sup>, and Sukiman<sup>38</sup>, who uses a problem-based learning model in Islamic Education learning. These studies indicate that the problem-based learning model is useful for improving students' higher-order thinking skills.

Kajin conducted another study by developing a collaborative constructivist-based learning model in Islamic religious education subjects to improve critical thinking skills<sup>39</sup>. The study results are in the form of a learning implementation plan (RPP) based on collaborative constructivism that effectively improves students' critical thinking skills. Ula and Sinta also

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<sup>35</sup> Konik Afifah Nurhidayah, "Pengembangan Perangkat Pembelajaran Pendidikan Agama Islam Model Problem Based Learning dengan Pendekatan Contextual Teaching and Learning untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa" (UIN Sunan Ampel Surabaya, 2019).

<sup>36</sup> Yuki Zairina Ahyun, "Efektivitas Metode Problem Posing dalam Meningkatkan Kemampuan Analisis Siswa pada Mata Pelajaran Fiqih di MTs Negeri 2 Sidoarjo" (UIN Sunan Ampel Surabaya, 2020).

<sup>37</sup> Fitri Aliya Hidayati, "Pengaruh Metode Pemecahan Masalah (Problem Solving) Terhadap Kemampuan Berpikir Kritis Siswa dalam Pembelajaran Pendidikan Agama Islam (PAI)(Studi di SMA Negeri 1 Puloampel)" (Universitas Islam Negeri " Sultan Maulana Hasanuddin" Banten, 2018).

<sup>38</sup> Sukiman, "Efektivitas Penerapan Strategi Pembelajaran Berbasis Masalah untuk Membentuk Kemampuan Berpikir Kritis Peserta Didik dalam Pembelajaran Pendidikan Agama Islam di SMP Negeri 26 Makassar."

<sup>39</sup> Kajin, "Pengembangan Model Pembelajaran Berbasis Konstruktivistik Kolaboratif Mata Pelajaran Pendidikan Agama Islam untuk Meningkatkan Kemampuan Berfikir Kritis Siswa Kelas V SDN Meri 1 Kota Mojokerto."

conducted similar studies<sup>40</sup>. Furthermore, Qomariyah and Rif'an proved that the use of mind mapping strategies in the Qur'an and Hadith subject at Madrasah Aliyah was able to improve students' higher-order thinking skills<sup>41</sup>.

Lastly, Hidayat<sup>42</sup> and Qomariyah<sup>43</sup> explained that inquiry and discovery learning methods are also effectively used to improve higher-order thinking skills in Islamic religious education subjects. Several other study results also share the same opinion, such as the studies by Jumania<sup>44</sup> and Suntiiah<sup>45</sup>, Whom each applies the Index Card Match method and the reflective model in learning Islamic education.

*RQ3: What is the impact of the application of HOTS-based learning on students in Islamic Education learning?*

The literature that the researchers have collected shows that with the implementation of HOTS-based learning in learning Islamic religious education subjects, there is a strengthening of the learning process, which can improve the quality of learning more effectively, efficiently, fun, and

<sup>40</sup> Sinta Sinta, "Pengaruh Model Pembelajaran Kooperatif Learning Tipe Think Pair Share Terhadap Peningkatan Berpikir Kritis Siswa pada Mata Pelajaran PAI: Penelitian Kelas VIII C SMP AL-Hasan Kec. Panyileukan Kota Bandung" (UIN Sunan Gunung Djati Bandung, 2017).

<sup>41</sup> Qomariyah and Rif'an, "Peningkatan Kemampuan High Order Thinking Skill (HOTS) Siswa Melalui Media Mind Mapping pada Mata Pelajaran Al-Qur'an Hadist Kelas XI MA Mu'allimat Kota Malang."

<sup>42</sup> M Hidayat, "Pengaruh Penerapan Strategi Inkuiri dan Penggunaan Media Power Point Terhadap Kreativitas Belajar Siswa pada Pelajaran Pendidikan Agama Islam di SMK Swasta Se-Kecamatan Bukit Raya Kota Pekanbaru" (Universitas Islam Negeri Sultan Syarif Kasim Riau, 2020).

<sup>43</sup> Nur Hasanah Qomariyah, "Pemberdayaan Higher Order Thinking Skill Melalui Penerapan Pembelajaran Fiqih dengan Strategi Discovery: Studi Kasus di MA Nurul Huda Peleayan Kapongan Situbondo dan MA Nurul Hikam Kesambirampak Kapongan Situbondo" (UIN Sunan Ampel, 2019).

<sup>44</sup> Jumania Jumania, "Peningkatan Higher Order Thinking Skills Peserta Didik Menggunakan Metode Index Card Match pada Mata Pelajaran Fiqhi Materi Hukum Waris dalam Islam KelaS XI IPS 1 MAN 4 Bone" (Institut Agama Islam Muhammadiyah Sinjai, 2019).

<sup>45</sup> Ratu Suntiiah, "Pembelajaran Reflektif pada Mata Pelajaran Sejarah Kebudayaan Islam dalam Meningkatkan Kemampuan Berpikir Kritis Siswa: Penelitian di MAN 1 dan MAN 2 Kota Bandung" (UIN Sunan Gunung Djati Bandung, 2020).



meaningfully, to improve the quality of learning outcomes and promote students to think critically, not only to convey the facts<sup>46</sup>.

Therefore, educators need to prepare and create a learning environment that stimulates students' HOTS development<sup>47</sup>. It is to equip students with higher-order thinking skills, which are 21<sup>st</sup>-century skills. These essential skills are needed by youth to prepare for the future.

## Conclusion

This is a study on the trend of implementing higher-order thinking skills (HOTS) in the learning process of Islamic religious education in madrasahs and schools. Researchers found that this trend began to emerge after implementing the Government's 2013 curriculum, where the curriculum used a scientific approach. The data that the researchers collected show that teachers, educators, and experts in implementing HOTS in Islamic Education learning can be grouped into two First, they innovate HOTS-based learning processes; and the second is those who develop HOTS-based assessment instruments. Several innovations in the learning process were carried out by applying various learning methods, models, and strategies. With the implementation of HOTS-based learning for students in Islamic Education learning, it can improve learning quality to be more effective, efficient, fun, and meaningful, impacting the quality of learning outcomes achievement and promoting critical thinking students.

Through this systematic literature review, the researchers hope to contribute to the existing literature by strengthening the gap and highlighting the importance of innovation in Islamic religious education in schools and madrasahs, especially concerning developing students' higher-order thinking skills. However, this study is a literature review that has not produced enough authentic novelty on the issues raised. Therefore, the researchers encourage all teachers, educators, and experts to continue conducting further research.

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<sup>46</sup> Miftakhul Muthoharoh, "Inovasi Pembelajaran Pendidikan Agama Islam Berbasis Hots (Higher Order Thinking Skill)," *JIE (Journal of Islamic Education)* 5, no. 2 (2020): 131-43.

<sup>47</sup> Collins, "Skills for the 21st Century: Teaching Higher-Order Thinking."

## References

- Ahmad, Iqbal Faza, and Sukiman Sukiman. "Analisis Higher Order Thinking Skills (Hots) Pada Soal Ujian Akhir Siswa Kelas 6 Kmi Dalam Kelompok Mata Pelajaran Dirosah Islamiyah Di Pondok Modern Tazakka Batang." *Jurnal Pendidikan Agama Islam* 16, no. 2 (2019): 137–64.
- Ahyun, Yuki Zairina. "Efektivitas Metode Problem Posing Dalam Meningkatkan Kemampuan Analisis Siswa Pada Mata Pelajaran Fiqih Di MTs Negeri 2 Sidoarjo." UIN Sunan Ampel Surabaya, 2020.
- Anderson, Lorin W, and Benjamin Samuel Bloom. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman, 2001.
- Aslamiyah, Nuryunita. "Pengembangan Instrumen Evaluasi Bentuk Tes Uraian Berbasis Higher Order Thinking Skills (HOTS) Pada Mata Pelajaran Akidah Akhlak Di Mts Negeri 1 Pandeglang." UIN SMH BANTEN, 2020.
- Bahri, Fajrul Muhammad, and Supahar Supahar. "Kemampuan Berpikir Kritis Menggunakan Tes Terintegrasi Agama Dan Sains Dalam Pembelajaran Pai Di SMA." *Edukasi Islami: Jurnal Pendidikan Islam* 8, no. 02 (2019): 233–52.
- Brookhart, Susan M. *How to Assess Higher-Order Thinking Skills in Your Classroom*. Virginia: ASCD, 2010.
- Collins, Robyn. "Skills for the 21st Century: Teaching Higher-Order Thinking." *Curriculum & Leadership Journal* 12, no. 14 (2014).
- Davies, Dan, Divya Jindal-Snape, Chris Collier, Rebecca Digby, Penny Hay, and Alan Howe. "Creative Learning Environments in Education—A Systematic Literature Review." *Thinking Skills and Creativity* 8 (2013): 80–91.
- Dixon-Woods, Mary. "Systematic Reviews and Qualitative Methods." *Qualitative Research: Theory, Method and Practice*. 3rd Edn. London: Sage, 2010, 331–46.
- Hadzhikolev, Emil, Stanka Hadzhikoleva, Kostadin Yotov, and Daniela Orozova. "Models for Multicomponent Fuzzy Evaluation, with a Focus on the Assessment of Higher-Order Thinking Skills." *TEM Journal* 9, no. 4 (2020): 1656–62.

- Hanifiyah, Rissalah, Heri Cahyono, and Yusuf Faisal Ali. "Membangun Kompetensi High Order Thinking Skills Melalui Aktivitas Pembelajaran Pendidikan Agama Islam Di SMP Negeri 1 Metro." *Jurnal Pendidikan Islam Al-Affan* 1, no. 1 (2020): 23–29.
- Herawati, Rahayu, and Ghullam Hamdu. "Pengembangan Asesmen Hots Pada Pembelajaran Berbasis Masalah Tema Bermain Dengan Benda-Benda Di Sekitar." *PEDADIDAKTIKA: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar* 1, no. 2 (2014): 151–59.
- Hidayat, M. "Pengaruh Penerapan Strategi Inkuiri Dan Penggunaan Media Power Point Terhadap Kreativitas Belajar Siswa Pada Pelajaran Pendidikan Agama Islam Di SMK Swasta Se-Kecamatan Bukit Raya Kota Pekanbaru." Universitas Islam Negeri Sultan Syarif Kasim Riau, 2020.
- Hidayati, Fitri Aliya. "Pengaruh Metode Pemecahan Masalah (Problem Solving) Terhadap Kemampuan Berpikir Kritis Siswa Dalam Pembelajaran Pendidikan Agama Islam (PAI)(Studi Di SMA Negeri 1 Puloampel)." Universitas Islam Negeri" Sultan Maulana Hasanuddin" Banten, 2018.
- Hwang, Gwo-Jen, Chiu-Lin Lai, Jyh-Chong Liang, Hui-Chun Chu, and Chin-Chung Tsai. "A Long-Term Experiment to Investigate the Relationships between High School Students' Perceptions of Mobile Learning and Peer Interaction and Higher-Order Thinking Tendencies." *Educational Technology Research and Development* 66, no. 1 (2018): 75–93.
- Jumania, Jumania. "Peningkatan Higher Order Thinking Skills Peserta Didik Menggunakan Metode Index Card Match Pada Mata Pelajaran Fiqhi Materi Hukum Waris Dalam Islam KelaS XI IPS 1 MAN 4 Bone." Institut Agama Islam Muhammadiyah Sinjai, 2019.
- Kajin, Sudar. "Pengembangan Model Pembelajaran Berbasis Konstruktivistik Kolaboratif Mata Pelajaran Pendidikan Agama Islam Untuk Meningkatkan Kemampuan Berfikir Kritis Siswa Kelas V SDN Meri 1 Kota Mojokerto." *Ta'dibia: Jurnal Ilmiah Pendidikan Agama Islam* 7, no. 1 (2017): 61–70.
- Kandari, Ali M Al, and Mousa M Al Qattan. "E-Task-Based Learning Approach to Enhancing 21st-Century Learning Outcomes." *International Journal of Instruction* 13, no. 1 (2020): 551–66.

- Krathwohl, David R. "A Revision of Bloom's Taxonomy: An Overview." *Theory into Practice* 41, no. 4 (2002): 212–18.
- Lestari, Puji. "Pengembangan Instrumen Soal Objektif UAS Pada Mata Pelajaran Pendidikan Agama Islam Dan Budi Pekerti Di SMA Berbasis Higher Order Thinking Skill (HOTS)." Universitas Pendidikan Indonesia, 2019.
- Meng, Qingquan, Jiyou Jia, and Zhiyong Zhang. "A Framework of Smart Pedagogy Based on the Facilitating of High Order Thinking Skills." *Interactive Technology and Smart Education* 17, no. 3 (2020): 251–66. doi:10.1108/ITSE-11-2019-0076.
- Muthoharoh, Miftakhul. "Inovasi Pembelajaran Pendidikan Agama Islam Berbasis Hots (Higher Order Thinking Skill)." *JIE (Journal of Islamic Education)* 5, no. 2 (2020): 131–43.
- Newmann, Fred M. "Promoting Higher Order Thinking in Social Studies: Overview of a Study of 16 High School Departments." *Theory & Research in Social Education* 19, no. 4 (1991): 324–40.
- Nkhoma, Mathews Zanda, Tri Khai Lam, Narumon Sriratanaviriyakul, Joan Richardson, Booi Kam, and Kwok Hung Lau. "Unpacking the Revised Bloom's Taxonomy: Developing Case-Based Learning Activities." *Education+ Training* 59, no. 3 (2017): 250–64. doi:10.1108/ET-03-2016-0061.
- Nurhidayah, Konik Afifah. "Pengembangan Perangkat Pembelajaran Pendidikan Agama Islam Model Problem Based Learning Dengan Pendekatan Contextual Teaching and Learning Untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa." UIN Sunan Ampel Surabaya, 2019.
- Pegg, John. "Promoting the Acquisition of Higher Order Skills and Understandings in Primary and Secondary Mathematics." *Research Conference*, 2010, 35–38.
- Qomariyah, Nur Hasanah. "Pemberdayaan Higher Order Thinking Skill Melalui Penerapan Pembelajaran Fikih Dengan Strategi Discovery: Studi Kasus Di MA Nurul Huda Peleyan Kapongan Situbondo Dan MA Nurul Hikam Kesambirampak Kapongan Situbondo." UIN Sunan Ampel, 2019.
- Qomariyah, Siti, and Ali Rif'an. "Peningkatan Kemampuan High Order Thinking Skill (HOTS) Siswa Melalui Media Mind Mapping Pada Mata Pelajaran Al-Qur'an Hadist Kelas XI MA Mu'allimat Kota

- Malang.” *Piwulang: Jurnal Pendidikan Agama Islam* 3, no. 1 (2020): 16–34.
- Setiawati, Wiwik, and dkk. *Buku Penilaian Berorientasi Higher Order Thinking Skills*. Jakarta: Direktorat Jendral Guru dan Tenaga Kependidikan Kementerian Pendidikan dan Kebudayaan, 2018.
- Sinaga, Ali Imran, and Alnida Azty. “Quality Analysis of Islamic Education Problem Based on Higher Order Thinking Skill Class V SDS Budi Mulia Medan.” *Britain International of Linguistics Arts and Education (BIO LAE) Journal* 2, no. 2 (2020): 610–15.
- Sinta, Sinta. “Pengaruh Model Pembelajaran Kooperatif Learning Tipe Think Pair Share Terhadap Peningkatan Berpikir Kritis Siswa Pada Mata Pelajaran PAI: Penelitian Kelas VIII C SMP AL-Hasan Kec. Panyileukan Kota Bandung.” UIN Sunan Gunung Djati Bandung, 2017.
- Sukiman, Sukiman. “Efektivitas Penerapan Strategi Pembelajaran Berbasis Masalah Untuk Membentuk Kemampuan Berpikir Kritis Peserta Didik Dalam Pembelajaran Pendidikan Agama Islam Di SMP Negeri 26 Makassar.” Universitas Islam Negeri Alauddin Makassar, 2018.
- Suntiah, Ratu. “Pembelajaran Reflektif Pada Mata Pelajaran Sejarah Kebudayaan Islam Dalam Meningkatkan Kemampuan Berpikir Kritis Siswa: Penelitian Di MAN 1 Dan MAN 2 Kota Bandung.” UIN Sunan Gunung Djati Bandung, 2020.
- Taufiqurrahman, Taufiqurrahman, M. Tubi Heryandi, and Junaidi Junaidi. “Pengembangan Instrumen Penilaian Higher Order Thinking Skills Pada Mata Pelajaran Pendidikan Agama Islam.” *Jurnal Pendidikan Islam Indonesia* 2, no. 2 (2018): 199–206. doi:10.35316/jpii.v2i2.74.
- Widana, I Wayan. *Modul Penyusunan Soal Higher Order Thinking Skill (HOTS)*. Jakarta: Direktorat Pembinaan SMA Kemdikbud, 2017.
- Zusnani, Ida, and Ali Murfi. “Strategi Pembelajaran Aktif Question Student Have (QSH) Pada Mata Pelajaran Fiqh Di MTs Negeri 9 Bantul.” *EDULAB: Majalah Ilmiah Laboratorium Pendidikan* 5, no. 1 (2020): 84–102.

