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HOTS Skills in Arabic Learning: What are the Opportunities and Challenges in The Digital Age?

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ABSTRACT
The integration of HOTS (Higher Order Thinking Skills) into Arabic language learning is essential to prepare 21st-century students for increasingly complex global demands. This study explores the implementation of HOTS-based Arabic learning by examining the opportunities and challenges encountered in the digital era, with a specific focus on a technology-integrated Islamic boarding school context. Employing a qualitative case study approach at Thursina International Islamic Boarding School (IIBS) Malang, Indonesia, data were collected through observation, interviews, and documentation. Analysis followed the Miles and Huberman framework, encompassing data reduction, presentation, and verification, with validity strengthened through triangulation of data and sources. The findings indicate that: a) HOTS implementation in Arabic learning is highly relevant and feasible through digital platforms, yet it faces significant challenges; b) the primary opportunities include enhanced accessibility, student engagement, and global competitiveness, while the most dominant challenges stem from teachers' limited HOTS pedagogical knowledge, uneven student Arabic proficiency, and a lack of HOTS-oriented teaching materials. This study concludes that HOTS skills, when effectively integrated with digital tools, can significantly foster globally competitive learners, provided that systemic supports are strengthened.

Keywords: *21st Century Skills; Arabic Learning; Digital Era; HOTS*

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INTRODUCTION

Technology in education is rapidly and widely evolving. Arabic, as a foreign language in Indonesia, must adapt to these developmental and temporal shifts. The transformation from classical, student-centered teaching methods to modern learning approaches that leverage technology is crucial for achieving educational objectives. Hashim et al. (2017) assert that the use of multimedia in Arabic learning should be advanced to ensure equitable development of students' digital literacy skills. Concurrently, students' analytical, critical, innovative, and creative capacities must be emphasized (Latorre-Cosculluela et al., 2021).

Critical thinking skills constitute a core criterion of Higher Order Thinking Skills (HOTS), which stands in contrast to Lower Order Thinking Skills (LOTS) and Middle Order Thinking Skills (MOTS). Orienting Arabic learning toward enhancing students' HOTS aligns with the mandate of curriculum reform in Islamic and Arabic Education under KMA Number 183 of 2019 (Ritonga et al., 2021). The national education system must facilitate the development of knowledge, skills, and character traits that enable students to become successful individuals, economically productive citizens, and active social participants (Anagün, 2018).

However, implementing HOTS in Arabic learning within digital contexts presents multifaceted challenges. Rachmadtullah et al. (2020) note that these challenges are particularly acute for teachers, who are now required to integrate technology into every learning process, despite many lacking proficiency in its use. Alsowat (2016) emphasizes the need to enhance teachers' technological competencies to realize effective digital-based HOTS learning. Lee and Choi (2017) affirm that technology serves as a vital medium to facilitate higher-order thinking activities among students.

Bloom's Taxonomy, which classifies learning into cognitive, affective, and psychomotor domains (Zohar, 1999), underpins the conceptualization of HOTS. Within the cognitive domain, higher-order thinking involves abstract mental processes manifested during learning (Mansor et al., 2021), such as drawing conclusions by synthesizing various clues, facts, and prior knowledge. Thinking skills encompass high-level, complex, and critical thinking. High-level thinking involves processing information beyond mere recall (Nofrion & Wijayanto, 2018). Complex thinking entails holistic problem interpretation (Micheli et al., 2019), while critical thinking involves analyzing arguments, reasoning, evaluating, and decision-making (Supena et al., 2021). These skills are cultivated through classroom activities that encourage knowledge construction, creativity, and critical engagement (Sulaiman et al., 2017).

In Indonesia, the Decree of the Minister of Religious Affairs (KMA) Number 184 of 2019 advocates for an educational approach oriented toward high-level thinking skills, reflecting the demands of contemporary life. The curriculum emphasizes student-centered, interactive, and media-rich learning that fosters collaboration, criticality, and relevance (Muradi et al., 2020). Consequently, Arabic language instruction must be active, creative, innovative, and interactive, requiring teacher proficiency in both content and instructional media selection (Mei et al., 2018).

Philosophically, the current Arabic curriculum balances cognitive, affective, and psychomotor development, with affective education serving as a foundational pillar for future competence. Theoretically, it aligns with competency-based standards, urging a shift toward digital-based learning to keep pace with other subjects (Dakhi et al., 2020).

While prior research highlights the importance of integrating HOTS and technology in Arabic learning (Kamarudin et al., 2016; Albantani & Madkur, 2019), several gaps remain. Existing studies often lack contextual specificity regarding HOTS implementation models within digitally equipped Islamic boarding schools (*pesantren*). Moreover, detailed analyses of the interplay between opportunities and challenges in such settings are limited. Most studies address general challenges without delineating the dominant factors or providing actionable implementation frameworks. Therefore, this study aims to address the following research

questions: 1) How is HOTS implemented in Arabic learning at a technology-integrated Islamic boarding school ?, 2) What are the most significant opportunities and challenges in implementing HOTS-based Arabic learning in the digital era?

This research contributes by offering a contextualized case study of HOTS implementation at Thursina IIBS Malang a boarding school with robust digital infrastructure thereby elucidating a practical model and identifying key leverage points and obstacles for educators and policymakers.

RESEARCH METHODOLOGY

This study employed a qualitative approach with a case study design to holistically explore the research problem. The research was conducted at Thursina International Islamic Boarding School (IIBS) Malang, Indonesia, a context selected due to its explicit commitment to integrating technology and advanced learning models within an Islamic educational framework.

Participants consisted of 45 students from grades X, XI, and XII, alongside 6 Arabic language teachers. Students were purposively sampled and categorized into three proficiency levels basic, intermediate, and expert based on their scores from the school's standardized Arabic competency test administered at the beginning of the academic year. Each level comprised 15 students. This stratification enabled the examination of HOTS implementation across varying language capabilities. Teachers were selected based on their involvement in HOTS-oriented instruction and their willingness to participate in in-depth interviews.

Data were collected through triangulated methods: 1) Observation, structured classroom observations were conducted over 12 sessions to document HOTS-based learning activities, teacher strategies, technology use, and student engagement. 2) Interviews, Semi-structured interviews were held with all 6 Arabic teachers and 18 students (6 from each proficiency level). Interview protocols focused on teachers' understanding of HOTS, instructional design processes, perceived opportunities, and challenges, as well as students' learning experiences and skill development. 3) Document Analysis, relevant documents were reviewed, including textbooks (*Durus Al-lughah, Al-manhajy*), Learning Implementation Plans (RPP), digital learning materials, and student assignments.

Data analysis followed the interactive model of Miles and Huberman (1994), involving data reduction, data display, and conclusion drawing/verification. To ensure validity, methodological triangulation was applied by cross-verifying findings from observations, interviews, and documents. Furthermore, peer debriefing was conducted with two Arabic education experts to enhance interpretive credibility.

RESULT AND DISCUSSION

HOTS Implementation Strategy

Arabic learning in the digital era must be done well. Every teacher should prepare a learning design that adapts to digital media that is always evolving (Masyhud et al., 2021). This is done so that the Arabic language does not lag behind other lessons that have adopted digital in learning such as Civics, Mathematics, Science, etc.

It is time for digital-based Arabic learning to become a leading subject, considering the urgency of the Arabic language in the world of work and professionals. Arabic learning needs

to be formulated well by considering digital developments globally that are in accordance with the current level of student needs (Ritonga et al., 2020). In the goal of national education, learning Arabic can be directed to character education as a provision for students to compete and co-exist with Arabs globally (Nira & Fauziyah, 2021)..

The implementation of HOTS in learning Arabic at Thursina IIBS Malang is a demand for institutions that must be implemented professionally. All teachers have an obligation to design HOTS-based Arabic learning and apply it professionally (Ritonga, et al., 2021). It is undeniable that not all Arabic teachers at Thursina IIBS Malang have good skills in formulating HOTS-based learning. This is known when the researcher observes the process of learning Arabic in the classroom. Meanwhile, Zhaffar et al., (2021) say that the experience of teachers in implementing HOTS is a supporting factor in achieving the expected learning objectives.

Teachers' skills in implementing HOTS are a necessity that must be improved. The success of the implementation of HOTS is also motivated by the teaching materials used in the learning process. If you want students who are skilled in HOTS learning, the textbooks and teaching they get must also emphasize the HOTS aspect, so that the desired goals and the process carried out go hand in hand. Through these teaching materials, it is expected to be able to develop problem-solving skills to the problems faced by students in their present and future lives (Hasibuan et al., 2019).

Arabic teaching materials used at Thursina IIBS Malang have not led to HOTS skills. Based on the researcher's observations, the Arabic learning books are books that in fact are in Arabic and are not equipped with HOTS instruments such as *Durus Al-lughah, Al-manhajy, Muthola'ah Nusush, Al-imla' wa Al-khat, Insya'*. That way, Arabic teachers are given the opportunity to design Arabic lessons that are in accordance with HOTS skills.

The strategy for implementing HOTS carried out by teachers at Thursina IIBS Malang uses a cooperative learning model. According to Green in Kövecses-Gősi, (2018), cooperative learning is not only a teaching method but an attitude of life that prioritizes cooperation based on mutual respect for the individual work of each member of the community. Cooperative learning is also able to adapt students to other areas of life.

In the context of cooperative learning at Thursina IIBS Malang, the Arabic language teacher forms 4-6 students in groups which are divided into weak and intelligent students in the field of Arabic. In cooperative learning, each group is given instructional instruction that will be the topic of discussion, and each student has different responsibilities in completing the task. Silalahi & Hutauruk, (2020) noted three main objectives of cooperative learning, namely: (a) to help students achieve learning outcomes, (b) to become a learning space for accepting diversity for students with different cultural, religious, ethnic backgrounds to create attitudes mutual respect for each other, (c) train students to develop their social skills.

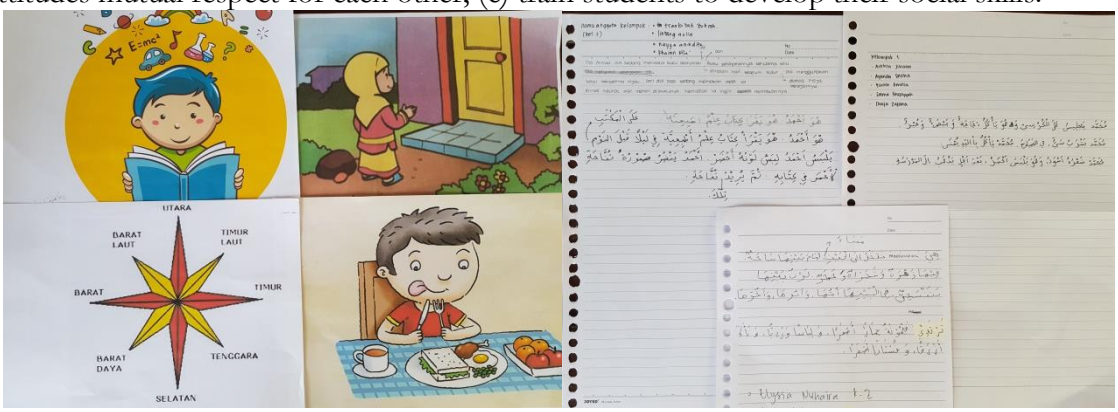

Figure 1. The results of student collaborative work

Figure 1 above shows students' creativity in describing images in Arabic discourse. The cooperative model directs student-centered learning so that active and innovative and fun learning is realized. Teacher creativity and innovation in presenting material must also be improved through the selection of varied methods and media (Fatimah & Santiana, 2017). Because the media and methods are chosen are important aspects in supporting the realization of students' HOTS skills.

In addition to cooperative learning, Arabic teachers also adopt quizizz as a medium to support learning. Quizizz media is used to improve students' HOTS skills in the field of learning problem solving, critical thinking and analysis of the questions given. Quizizz media is an alternative solution used by teachers to bring fun Arabic learning (Ritonga, et al., 2021). Quizizz is also present as a form of digitizing Arabic learning with other media such as Crossword Puzzle, Kahoot, Google Drive, etc.

Figure 2. Quizizz Utilization

Figure 2 describes the use of quizizz as an online media that can be accessed by students whenever and wherever students are. The use of quizizz media requires students' accuracy in choosing the correct answer with a very short time limit. Students who are accustomed to being trained to do difficult learning activities with a time limit will have critical and analytical thinking power towards each work.

Critical and analytical attitude in HOTS skills including the necessities of life with intense global competition. Arabic teachers need to formulate HOTS indicators to be achieved in learning so that the learning process becomes focused and students are ready to follow all the formulated learning agendas. At Thursina IIBS Malang, researchers did not find a guide to the achievement indicators of HOTS-based Arabic learning. However, based on its application, the HOTS indicator which is emphasized in Arabic learning leads to 21st-century life skills, known as 4C (critical thinking & problem solving, creativity & innovation, communication & collaboration).

In the era of digital development, the 21st-century learning model is a mandatory skill that students must have. Why not, because technology plays an important role in the development of science. Students who easily adapt to the development of this era will be able to live along with the growth of technology. To realize the skills of students who are ready to compete, Arabic language teachers must be equipped with the knowledge and skills needed in the 21st century such as learning innovation skills, communication skills, use of media and

technology, and professional life and work skills (van Laar et al., 2020). Teachers will find it easier to develop students' skills in learning when they are equipped with a more comprehensive knowledge of 21st century skills.

The 21st-century learning model with the 4C concept is an indicator of the application of HOTS in learning Arabic at Thursina IIBS Malang. This is different from the HOTS indicator in the formulation of Bloom's Taxonomy concept, namely level C-1 (knowing), C-2 (understanding) as Lower Order Thinking Skills (LOTS), and C-3 (applying) as level Middle Order Thinking Skills (MOTS), and levels C-4 (synthesizing/analyzing), C-5 (evaluating), C-6 (creating) as a category of High Order Thinking Skills (HOTS) (Baransi & Burbara, 2019).

The HOTS indicator in the 4C concept is more measurable than the HOTS indicator initiated by Taxonomy Bloom. The reason is that the 4C content in Arabic learning can be carried out by students and teachers, while analyzing, evaluating and creating activities are teacher activities that require certain indicators in each aspect. Students will have difficulty determining the analysis, evaluation, and creation activities carried out in the HOTS or MOTS categories and even LOTS.

Opportunities and challenges of HOTS in the digital era

The use of digital in the Arabic learning process is not new for the Thursina IIBS Malang institution, because the study room has been equipped with technology such as smart tv, every student has a laptop, WiFi access. This opens up a great opportunity for Arabic to become a subject that is easily accessible and learned by all students. Through online platforms, Arabic material can be learned anytime and anywhere (Abdullahi et al., 2018). Today, many web-based digital platforms are used to learn Arabic for free such as Arabic Teacher, Busuu, Areeg, School Arabia, Alef-ba-ta, Medina Arabic, Arabic Online, Arabic Academy, etc.

Learning Arabic using this website is an online learning medium that can support the learning process in the classroom. The similarity of perceptions between students and teachers on the use of technology in learning will not only arouse their interest in operating the technology, students will definitely feel more comfortable learning to use the media they have been using (Hadinugrahaningsih et al., 2017). Through the transition of learning Arabic to the digital world, there are no more real-time and space constraints.

The presentation of material in website-based Arabic learning is important to analyze to see the aspects of HOTS skills contained therein. In principle, the orientation of learning Arabic should be directed at increasing students' HOTS both in the material contained in textbooks at school and in Arabic language material spread on online media. So that through HOTS-based Arabic learning, students are able to process information in their own way (Ichsan et al., 2019), not just memorize facts or just repeat previously obtained information.

In the era of technology, learning Arabic must be able to create new creations and innovations, so that they can survive with existing developments. As a policymaker, the government is expected to examine the balance between Arabic language education and employment to face the changes, opportunities, and challenges in this era while still paying attention to the skills aspect. Other aspects such as character and knowledge that all graduates of Arabic and Arabic language education must possess to ensure they have the ability to be effective in the workplace for their own benefit, employers' institutions, and wider economic development. Education in the technological era has changed globalization to innovation education, the main goal of this educational era is to produce graduates who have much higher innovation and digital technology skills than before (Puriwat & Tripopsakul, 2020). This burdens students' creative and innovative thinking skills to encourage the formation of a skilled student community in accordance with the needs of the times.

Table 1. Summary of Key Opportunities and Challenges

No	Aspect	Oportunities	Challegens
1	Access and Resources	Unlimited access to online materials and platforms; flexible learning.	Over-reliance on non-HOTS specific external resources.
2	Student Engagement	Increased motivation through interactive media (Quizizz, videos); fosters creativity and digital literacy.	Varied Arabic proficiency levels hinder uniform HOTS engagement.
3	Teacher Capacity	Digital tools aid instructional design and content delivery.	Limited pedagogical knowledge of HOTS; need for continuous training.
4	Curriculum and Materials	Potential for innovative, integrated digital content.	Existing textbooks lack explicit HOTS orientation; teachers must supplement heavily.

Despite these opportunities, several entrenched challenges were identified, predominantly stemming from three core factors: teacher capacity, student proficiency, and instructional materials.

First, Teacher-Related Challenges: A primary obstacle is teachers' limited conceptual and pedagogical understanding of HOTS. While technology facilitates information access, effectively designing and implementing HOTS-based lessons requires specialized training that remains inadequate. This aligns with findings by Zohar (1999) and Al-shaye (2021), who stress the necessity of professional development for HOTS integration. At Thursina IIBS, HOTS is less familiar in Arabic compared to other subjects, underscoring the need for targeted skill enhancement.

Second, Student-Related Challenges**,** students' Arabic language proficiency significantly impacts HOTS implementation. Those with weaker skills often regress to focusing on basic vocabulary and text comprehension, thereby constraining higher-order cognitive activities (Sultonova & Ahmedov, 2021). This creates a divergence in learning pace and depth within classrooms.

Third, Material-Related Challenges, the prescribed Arabic textbooks at Thursina IIBS do not inherently incorporate HOTS elements. Teachers must therefore invest considerable effort in adapting or creating supplementary materials, a process that is time-intensive and requires advanced design skills. The lack of HOTS-aligned teaching resources poses a systemic barrier to consistent implementation (Widayanti et al., 2019).

These challenges are interrelated; for instance, teacher knowledge gaps affect material adaptation, which in turn influences student engagement and skill development. The findings corroborate earlier studies indicating that successful HOTS integration demands synchronized support across teacher training, curriculum design, and resource provision (Jubran & Arabiat, 2021; Tyas & Naibaho, 2021).

In the learning process at Thursina IIBS Malang, students enjoy taking part in online searches, taking quizzes, doing questions using laptops. At the same time, the development of students' thinking and analytical skills remains a major concern for teachers when presenting Arabic subject matter. In addition, students should also be given the opportunity to be creative and innovate on school assignments given by teachers such as design works, pictures, audio, and videos related to the subject matter being taught (Ilmiani & Delima, 2021). Each student assignment can also be uploaded via Youtube, Instagram, Facebook, Google Drive, Email so that it can reach the wider community.

Apart from the fact that digital technology opens up new opportunities to increase students' creativity and innovation in the HOTS category, teachers also experience challenges in every learning process carried out. The challenge when applying HOTS in learning Arabic is a complex problem for teachers who need serious handling (Jubran & Arabiat, 2021).

The challenge of implementing HOTS in learning Arabic for Thursina IIBS Malang teachers comes from three main factors, namely, teachers, students, and learning devices. These three factors play a very important role in achieving the expected learning goals, if one of them does not go well, it will have an impact on decreasing the quality of the learning provided (Tyas & Naibaho, 2021).

The Arabic teacher's limited knowledge of the HOTS concept is an initial challenge to the implementation of HOTS. Learning technology that is increasingly developing makes it easier for teachers to explore information about the HOTS concept in detail. Applying HOTS in learning Arabic will be difficult if the teacher's knowledge of HOTS is still minimal. Therefore, in addition to information from the internet, teachers should also be given training in the preparation of learning and its application in learning activities (Zohar, 1999).

The term HOTS in Arabic learning is not very familiar at Thursina IIBS Malang, in contrast to other subjects in the social sciences and science class that have already adopted HOTS. So it is very natural that Arabic language teachers need skills improvement training in HOTS-based teaching. It is undeniable if these skills are in line with the demands for the use of an Arabic curriculum that emphasizes improving critical thinking and analytical skills and student-centered learning in KMA Number 183 of 2019 concerning Islamic Religious Education and Arabic (Al-shaye, 2021).

The success of learning Arabic in the digital era with HOTS skills is also influenced by students' Arabic language skills. When students' Arabic skills are good, it is easier for teachers to direct HOTS-based Arabic learning, because teachers and students can focus on exploring the material that has been prepared. The phenomenon that occurs when students' Arabic skills are still weak is that Arabic learning will return to the basic aspects, namely understanding Arabic text and vocabulary (Sultonova & Ahmedov, 2021). Therefore, Arabic books must be designed with HOTS elements in mind.

In addition to the factors mentioned above, the Arabic language learning tools at Thursina IIBS Malang did not lead to an increase in HOTS skills. However, teachers continue to innovate fun learning in varied ways such as using video, audio, online quizzes, and discussions. Widayanti et al., (2019) explains that the linkage of the curriculum and the teaching materials used will make students active in learning so that the teaching and learning process becomes fun.

CONCLUSION

This study demonstrates that implementing HOTS in Arabic learning within digital environments is both a necessity and a viable pathway toward developing globally competitive learners. At Thursina IIBS Malang, HOTS is operationalized through cooperative learning and digital tools like Quizizz, leveraging online resources to enhance accessibility and engagement. The digital era affords substantial opportunities, including flexible learning environments and the potential for creative student expression.

However, significant challenges persist, predominantly concerning teachers' pedagogical knowledge of HOTS, disparities in student Arabic proficiency, and a lack of purposefully designed HOTS teaching materials. These factors collectively hinder the optimal implementation of higher-order thinking in Arabic classrooms.

For practitioners, this study implies the urgent need for structured professional development programs focusing on HOTS pedagogy and digital tool integration. Curriculum developers and policymakers should prioritize the creation and dissemination of HOTS-oriented Arabic learning resources. For researchers, future studies could employ mixed-methods approaches across multiple institutions to generalize findings, or conduct longitudinal designs to assess the long-term impact of HOTS integration on language competence and cognitive skill development. A key limitation of this study is its single-case design; broader investigations across diverse educational contexts would enrich the understanding of HOTS implementation dynamics in Arabic language education.

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