HOTS in Arabic Learning: A Study of The Implementation of HOTS on Students' Critical Thinking Ability

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Abstract

Seeing the increasingly fierce scientific competition in the international world, the government has begun to implement HOTS-based learning (Higher Order Thinking Skills) in the 2013 curriculum. HOTS has been applied in learning, including learning Arabic. Using HOTS-based Arabic learning is expected to produce human resources who can think critically about global issues and competition. This study aims to find the effect of learning Arabic based on HOTS and critical thinking skills. This study uses a mixed method approach called sequential explanatory design, started with quantitative and then followed by qualitative. The population in this study is students of X graders of MAN 1 Kota Malang. The data collection technique used is random cluster sampling using X graders of Language Class 1 as the experimental class and Language Class 2 as the control class. Collecting data is done using tests that is analyzed by independent sample t-test. The study results indicate that HOTS-based Arabic learning significantly affects students' critical thinking skills. It is shown by the average value of the experimental class students, which is 68.13, while the average value of the control class is 54.69, with a significance (sig-2 tailed) of 0.00 <0.05. It means that HOTS-based learning positively impacts learning Arabic so that it can improve students' ability to think critically. Further research is recommended to measure its effectiveness.

Keywords*: Arabic Learning, Higher Order Thinking Skills, Critical Thinking*

Abstrak

Melihat semakin ketatnya persaingan keilmuan di dunia internasional, pemerintah mulai menerapkan pembelajaran berbasis HOTS (*Higher Order Thinking Skill*) dalam kurikulum 2013. HOTS sudah diterapkan dalam pembelajaran termasuk pembelajaran bahasa Arab. Menggunakan pembelajaran bahasa Arab berbasis HOTS diharapkan dapat menghasilkan SDM yang dapat berpikir secara kritis terhadap persoalan dan persaingan global. Keterampilan HOTS menjadi Tujuan penelitian ini untuk mengetahui pengaruh pembelajaran bahasa Arab berbasis HOTS terhadap keterampilan berpikir kritis. Penelitian ini menggunakan pendekatan mix method dengan *sequential explanatory design* yaitu kuantitatif dilanjutkan kualitatif. Populasi penelitian ini adalah siswa kelas X MAN 1 Kota

Malang. Teknik pengambilan data menggunakan cluster random sampling dengan menggunakan kelas X Bahasa 1 sebagai kelas eksperimen dan kelas X Bahasa 2 sebagai kelas kontrol. Penggumpulan data menggunakan test yang dianalisis dengan uji independent sample t-test. Hasil penelitian ini menunjukkan bahwa pembelajaran bahasa Arab berbasis HOTS telah memberikan pengaruh yang signifikan terhadap keterampilan berpikir kritis siswa. Hal ini dibuktikan dengan nilai rata-rata siswa kelas eksperimen yaitu 68,13, sedangkan nilai rata-rata kelas kontrol 54,69 dengan signifikansi (sig-2 tailed) 0,00 < 0,05. Artinya pembelajaran berbasis HOTS memberikan dampak yang sangat positif dalam pembelajaran bahasa Arab sehingga dapat meningkatkan kemampuan siswa dalam berpikir kritis. Adapun penelitian selanjutnya disarankan untuk mengukur efektifitasnya.

Kata Kunci: Pembelajaran Bahasa Arab, HOTS, Berpikir Kritis

INTRODUCTION

Education is the backbone of the nation's progress providing services that are in line with the demands of the times. Living in the 21st Century requires various relevant skill mastery to adapt, contribute, and compete properly and successfully (DiCerbo, 2014). The 21st Century demands different skills from previous centuries. More than 250 researchers from 60 world institutions that are members of the Assessment and Teaching of 21st Century Skills classify 21st-century skills into four categories known as 4C's (Critical Thinking, Communication, Collaboration, and Creativity). These four skills have been identified as essential in the 21st Century (Widana, 2018).

Therefore, this is also related to the issue of education development at the international level. The 2013 Curriculum and the KMA Curriculum No. 183 of 2019 concerning the Arabic language curriculum are designed with various improvements (Kemenag, 2019). The development of this curriculum is based on the development of science which requires students to have four skills: critical thinking, communication, collaboration, and creativity. According to Jauhari, a curriculum inevitably requires a new direction by its time, especially in Arabic language learning. First, content standards must reduce irrelevant material, deepen and expand relevant material to students, and cater to students' needs to think critically and analytically according to international standards. Second, assessment standards must gradually adapt to international standard assessment models (Nasaruddin, 2015). Assessment of learning outcomes is expected to help students to improve higher-order thinking skills because they can encourage students to think broadly and deeply about the subject matter.

Thinking skills are usually classified based on the type of learning achievement. Some types of learning require more or deeper cognitive processing, such as critical thinking, analysis, and synthesis. In contrast, recognition and memory may suffice for others. One of the most widely applied taxonomies is that proposed by Bloom to conceptualize and enhance higher forms of thinking in education, including analyzing and judging, in addition to memorizing and remembering facts (rote learning) (Desrani et al., 2019). It is generally applied in designing curricula and assessing learning outcomes.

Bloom's taxonomy of educational goals has been applied in many fields, such as biology, engineering, languages, psychology, and many others. Proponents of

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Bloom's Taxonomy postulate that the taxonomy of educational goals can be applied to any subject matters and learners at any level and age. Of course, Bloom's Taxonomy's popularity lies in its application to various disciplines and groups. Scholars in different fields have used it for different purposes (Ghanizadeh et al., 2020).

Figure 1. Bloom's Taxonomy (Huitt, 2011)
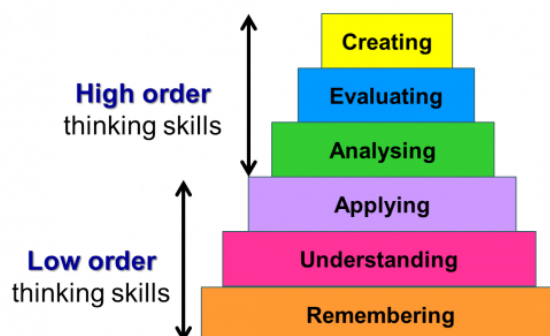
In the notes of Krathwohl and Anderson, Bloom has laid a foundation in his taxonomy related to higher-order thinking: C4 analysis, C5 evaluation, and C6 creation. The criteria for measuring higher-order thinking skills are as follows (Anderson et al., 2001): (1) examining data which is a unit of small parts, then finding the relationship of these small parts from the aspect of cause and effect, (2) providing an assessment based on standards on problem-solving, providing input, and ways to see the extent of the activity and its benefits, and (3) creating which is being creative in making breakthroughs that come from existing problems and then finding solutions. According to Sefer in Benjamin et al., higher-order thinking skills are divided into two thinking skills, critical thinking skills and creative thinking skills (Bloom & Krathwohl, 1956).

Critical thinking is a skill that uses basic thinking processes to solve problems systematically. In Johnson's opinion, critical thinking skills are the ability to think well and are essential (Abdullah et al., 2015). Meanwhile, Herlinda argues that critical thinking is thinking that uses her mind to solve a problem by first understanding the problem, expressing opinions or arguments clearly, detecting bias from various points of view, and concluding from existing problems. It can be concluded that critical thinking is a complex process that aims to make sound decisions logically through a systematic scientific process of analyzing, synthesizing, recognizing problems, solving them, evaluating, and concluding (Herlinda & Siregar, 2020).

According to (Ghanizadeh & Mizaee, 2012), critical thinking is thinking reasonably and reflectively by emphasizing on making decisions about what to believe or do. According to Ennis, five indicators of critical thinking are derived from critical activities. These indicators are (1) being able to compile the main problems, (2) being able to reveal facts needed to solve a problem, (3) being able to choose logical, relevant, and accurate arguments, (4) being able to determine different viewpoints based on bias, and (5) being able to determine and make a decision. Everyone needs critical thinking to respond to problems in real life.

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Educators must constantly develop learning innovations in Arabic language that can improve students thinking skills to a higher level (Faruq & Huda, 2020). In general, educators at Madrasah Ibtidaiyah are still lacking in developing Arabic language learning innovations, especially learning based on higher-order thinking skills (HOTS), because HOTS is relatively new and developed by the Ministry of Education and Culture and KMA No. 2019. This problem often causes students to have difficulties facing problems requiring higher-order thinking skills (Desrani & Zamani, 2021). It also occurs in MAN 1 Kota Malang.

Several studies suggest that a teacher must recognize the importance of teaching higher-order thinking skills to prepare students for life in the 21st Century. Collins suggests that there are five stages that teachers can take to achieve teaching thinking skills in a structured way: 1) teaching language and higher-order thinking concepts, 2) improving higher-order thinking skills by discussion, 3) explaining basic concepts in a simple manner, 4) giving examples and models, and 5) always motivating students in higher order thinking (Collins, 2014).

Improvement and development of Human Resources (HR) and technology in preparing the next generation of a nation are conducted through learning in schools. The success of the teacher in teaching is significant. Teachers determine success in student learning which will ultimately affect the quality of national education. Improving superior human resources for the next generation does not only require the ability to memorize and apply, but students also need to analyze and think critically to make decisions and solve problems rationally so they can produce the right decision (Saptono, 2016). Learning is an activity that is deliberately designed to help someone to be able to learn new skills and abilities. In the learning process, hots-based learning is one of the supporting components that support teachers in learning activities to help develop students' creative thinking.

Arifka Mahmudi's research suggests that implementing Arabic learning based on higher-order thinking skills (HOTS) in MAN 1 Kota Malang is still challenging for teachers there. Arabic learning still tends to be teacher-centered, and the method used is still dominated by translation and reading proficiency. The media used are teacher's handbooks, blackboards, and occasional use of PowerPoints and language laboratories. Considering that Arabic language learning is still very conventional, researchers are interested in developing learning by applying Arabic language learning based on higher-order thinking skills (HOTS) in MAN 1 Kota Malang (Mahmudi, 2020). It is supported by several studies on developing higher-order thinking skills and learning methods so that students can be emotionally and cognitively positive in learning (Sani, 2019; Fensham & Bellocchi, 2013). Arabic language learning based on HOTS can build creativity and improve students' critical thinking skills in obtaining the target language (Muradi et al., 2020).

The main implication of critical thinking is that teachers must update and develop their knowledge and skills to adapt their pedagogy toward the HOTS improvement. It will not happen quickly. As scholars have noted, higher levels of thinking, particularly critical thinking, cannot be automated and demands planning and training (Ghanizadeh, 2011). In other words, critical thinking must be fostered and taught in a directed and meaningful way (Susanto et al., 2022). Therefore, as practitioners and agents of change in the education system, teachers are

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responsible for developing innovative procedures and techniques for incorporating critical thinking enhancement elements into their curriculum and teaching. This requirement can have salient implications for pre-service and in-service teacher education and continuity of professional development. Of course, this is not an easy feat and can be a perennial challenge for teachers. They should train teachers to be familiar with innovative approaches to integrate them skillfully and carefully in their teaching.

METHOD
Research Design and Data Collection Technique
A mixed methods approach was applied in this study. The design used was a sequential explanatory design, a combination of quantitative and qualitative research methods sequentially. The research first phase was conducted using quantitative methods to measure the application of HOTS in learning Arabic to improve critical thinking skills. Quantitative data were collected through tests distributed to 62 students. Furthermore, qualitative data were collected from researchers' interviews with some Arabic teachers as respondents. The sampling technique used is a cluster random sampling technique combined with convenience sampling, meaning that the sample is taken randomly from several separate groups and is also selected based on the availability of respondents and the convenience to obtain the data. According to Sugiyono, convenience sampling is favorable because the sample is chosen freely and determined by the researchers. Samples were taken from 2 classes, 12 A Class as the experimental class and 12 B Class as the control class.
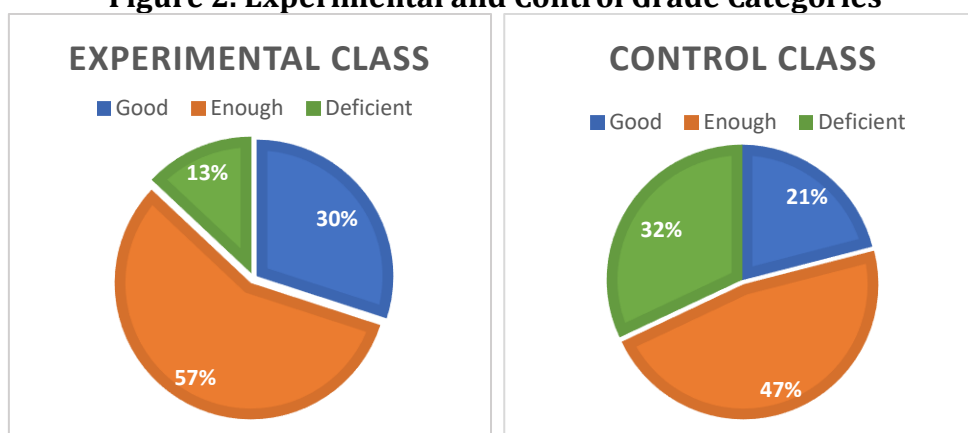
Data Analysis Technique
Data analysis was carried out in 2 stages. The first stage was performed by analyzing the quantitative data generated from the test. The second stage was the analysis of qualitative data generated from interviews. Independent sample t-test analysis assisted by SPSS was used in analyzing the data. The data analysis was conducted using Milles and Huberman's theory, which consisted of four stages: data collection, data reduction, data presentation, and conclusion. These two analyses provided more comprehensive data regarding hots and Arabic learning implementation to improve students' critical thinking skills.

RESULT AND DISCUSSION
Prior to analyzing the data, the researchers implemented the experimental class of Arabic language learning using higher-order thinking skills (HOTS). The general description of learning based on HOTS in improving critical thinking skills is explained in this section. The researchers carried out activities in Arabic where the students are invited to "get acquainted" with figures who can change the world. "Getting acquainted" means not only knowing their place and date of birth or achievements but also knowing at a profound level, such as the characters of the person. From the various figures found, students are invited to make criteria, which characters can be their true friends. Because the learning focuses on students, they are asked to determine errors in the use of vocabulary or grammar in a sentence or a reading text. The teacher can create a debate forum for students about a topic in which there are pros and cons groups to the topic.

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Figure 2. Experimental and Control Grade Categories

Based on the figure above, the difference in the values of the two classes is apparent. The experimental class obtained good scores from 30% of the students. In contrast, the control class had 21% of students. The experimental class obtained low scores from 13% of students, while 32% of the control class got lower scores. It means that from the two class comparisons above, the experimental class gets a significant increase in value compared to the control class.

Furthermore, the researchers conduct an independent sample t-test analysis that begins with a statistical descriptive statistics analysis. Before conducting the independent sample t-test analysis test, the researchers first evaluate the normality and homogeneity. The data obtained with a significance level of 5% are normal and homogeneous. Because the two data are normal and homogeneous, the researchers can continue. Statistical descriptive analysis is as follows:

Table 1. Descriptive Statistics

	N	Range	Min	Max	Mean	Std. deviation	Variance
Experiment	32	50	40	90	68.13	12.297	151. 210
Control	32	40	40	80	54.69	9.832	96.673
Valid N	32						

The descriptive statistical test calculation shows that the average post-test in the experimental class is 68.13 with the minimum score of 40, and the maximum value of 90. In contrast, the control class is 54.69, with a minimum score of 40 and a maximum value of 80. In descriptive calculation, there is a significant difference between the experimental class and the control class. This difference is obtained from applying Arabic language learning using higher-order thinking skills to improve students' critical thinking skills.

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Table 2. Independent Sample T-test

Results of critical thinking skills	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean	Std. Error	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.164	.285	4.828	62	.000	13.438	2.783	7.874	19.001
Equal variances not assumed			4.828	59.138	.000	13.438	2.783	7.869	19.006

The independent sample t-test analysis results in the table show a positive influence between the x variable (the learning Arabic based on higher-order thinking skills), and the y variable (students' critical thinking abilities in MAN 1 Kota Malang). It tests the second hypothesis using the independent sample t-test.

The criteria for testing the hypothesis (H_0) are accepted if sig.2-tailed > 0.05; otherwise, H_0 is rejected if sig.2-tailed <0.05. Based on the t-test analysis or independent sample t-test, which can be seen in Table 3, the significance value for students' critical thinking ability is 0.00, which means that H_0 is rejected. It means that the learning based on higher-order thinking skills can improve students' ability to understand the material so that students can perform critical thinking when they encounter problems in learning. It gives an illustration for teachers that critical thinking is a future skill that students must have today, as quoted in the following interview:

> "Student thinking skills still need to be developed following the demands of today's development. The rapid progress of learning methods forces us teachers to improve our ability to teach Arabic under existing developments. We want students' interest in Arabic holistically but still in line with a higher-level of thinking" (AM, Interviewee 2021)

Based on the findings from the data analysis above, it can be concluded that there is an effect of Arabic language learning based on higher-order thinking skills on students' critical thinking skills. This high-order thinking skill requires students to use previous and new knowledge and process new information to get conclusions as answers related to new situations (Nagappan, 2001). In other words, higher-order thinking is the ability to process information in a way that is not memorizing facts or simply repeating previously obtained information. Higher-order thinking skills are a mental process that maximizes the ability to think comprehensively, which in turn finds the desired goal (Desrani et al., 2014).

Ritonga et al. (2021) consider that the desire to improve the quality of Arabic learning currently is natural because the competition for the position of subjects

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continues to roll nationally and globally. Arabic learning must quickly respond to the times that involve the development of human thinking power (Essa et al., 2020) so that Arabic lessons are not left behind Science, Social, Engineering, Health, Technology, and others lessons. However, to improve the quality of learning, the skills of teachers in teaching HOTS-based in Arabic must also be improved (Kamarudin et al., 2016). Teachers must improve in many areas to arrive at the HOTS-based learning process, such as having orientation of learning objectives, changing methods and strategies, using relevant media, and choosing teaching materials that emphasize improving HOTS (Hariadi et al., 2021).

However, the reality appears that teachers have problems in teaching HOTS-based in Arabic. Teachers' knowledge about higher-order thinking skills in the critical thinking learning process is still limited, thus interrupting the desired learning process (Tindangen, 2018). The teachers' limitations in critical thinking skills are illustrated in the results of the researchers' interview with one of the following informants:

> *"We cannot avoid that there are still Arabic teachers who do not comprehensively understand these HOTS skills. It forces us to provide reinforcement, such as workshops for Arabic teachers in implementing HOTS skills. It certainly takes a lot of time, effort, and money, but it has also become the institution's commitment to improving the quality of Arabic language learning, especially in improving students' critical thinking skills" (BAK, Interviewee 2021)*

Implementing HOTS-based Arabic learning provides opportunities for teachers to improve students' thinking skills and become more critical and creative. Besides, the problem-solving method is appropriate as a learning strategy capital (Hasibuan et al., 2019). It can be conducted by presenting a problem to the students to analyze, which is then carried out in group discussions. The students will exchange opinions with their friends to convey ideas as a form of critical thinking output (Ahmad, 2021). Moreover, the learning process is equipped with relevant media, and the level of students' thinking invites student participation in learning Arabic with a more profound meaning (Ritonga et al., 2022).

Another study shows a positive relationship between critical thinking, metacognitive ability, and academic achievement (Bagheri & Ghanizadeh, 2015). Two sub-components of critical thinking (i.e., making inferences and deductions) and one sub-component of self-regulation among 120 students are investigated in the attainment of language, reading, and writing. The results show a moderate correlation between these variables. The later data analysis reveals that self-monitoring is the most potent predictor of language achievement. Furthermore, the results show that making inferences, deductions, and self-monitoring together can predict about 27% of language achievement. A more extensive study (Ghanizadeh & Mizaee, 2012) reports that second language students' critical thinking is a positive predictor of their achievement and can predict approximately 28% variance in their academic achievement.

The researchers also receive data on improving student achievement. It is revealed through the following interview results:

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"Improving student learning outcomes is now my focus. I suspect this students' academic improvement is part of the implementation factor for HOTS-based Arabic learning. I feel a fairly active learning atmosphere in the classroom because I invite students to appreciate the various phenomena that are developing in society, and then I provide opportunities for students to express their opinions regarding the phenomena they have witnessed" (HA. Interviewee, 2021)

The learning process must accommodate the development of HOTS. Activeness, student-centered learning, curiosity (a desire to ask), and assessment based on HOTS is a way for students to achieve HOTS. The main emphasis in learning activities to form HOTS is on the Student-Center Learning (SCL) process (Ikhwan & Widodo, 2019). Students who participate in learning activities with SCL model and get challenges during their studies have shown 25% faster brain growth than those who do not receive the treatment. The growth of thinking power is a crucial issue obtained through SCL model and has the potential use in other educational institutions.

According to Steffen Saifer, higher-order thinking skills are divided into two parts, critical and creative thinking skills (Saifer, 2017). Critical thinking is reasonable, and reflective thinking focuses on what is believed and done (Ennis, 1996). According to Krulik and Rudnick (2003), critical thinking is the ability to analyze problems, determine the adequacy of data to solve them, decide the need for additional information on problems, and the ability to analyze situations. This thinking ability will arise when individuals or students face problems they have not encountered before. It is aligned with several studies that learning based on higher-order thinking skills has benefits where students can manage critical thinking skills that connect and evaluate all aspects of a situation or problem (Muradi et al., 2020).

CONCLUSION

Based on the research results, it can be concluded that the application of Arabic language learning based on higher-order thinking skills in MAN 1 Kota Malang students can improve or influence critical thinking skills. It is proven by the score of students in the experimental class being higher than in the control class. To improve critical thinking and higher-order thinking skills by implementing learning strategies that foster high-level and deep-thinking skills, inviting students to explore the latest or contextual phenomena, and creating a vibrant classroom atmosphere and student-focused learning. However, for the learning process to have a better and more significant impact, it must be supported by a longer learning time. Based on the research that has been done, several things are suggested: 1) learning based on higher-order thinking skills can be used in all subjects, including Arabic. Before implementation, the teachers should understand this kind of learning well to get maximum results. Teachers can also develop a model that emphasizes learning higher-order thinking skills. 2) Further researchers can contribute to developing assessments based on higher-order thinking skills to train or hone students' critical thinking skills.

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