

## IMPROVING STUDENTS' CREATIVE THINKING IN LEARNING ARABIC THROUGH HOTS BASED PROJECT BASED LEARNING MODEL

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### Article Info

#### Article History:

Received: February 2022

Revised: April 2022

Accepted: June 2022

Published: June 2022

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### Abstract

This study aims to analyze students' creative thinking skills in learning Arabic through the application of a project-based learning model based on Hots. This study uses a quantitative approach with experimental methods of the type of quasi-experimental research with the research design used is Post-Test Only Control Group Design. The population in this study were students of class X MAN 1 Malang City, East Java, Indonesia. The data collection instrument used was a test using an independent sample t-test analysis test. Based on the independent sample t-test, the significance value of the variable analysis was  $0.013 < 0.05$  with an average value of 75.12 for the experimental class and 70.28 for the control class. Through the results obtained, there is a significant positive effect between experimental class students who use project-based learning models and control class students who only use conventional models. So to improve students' creative thinking skills, they can use project-based learning in Arabic learning.

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### Keywords:

Creative Thinking; Higher Order Thinking Skills; Project Based Learning Digital.

### مستخلص البحث

تهدف هذه الدراسة إلى تحليل مهارات التفكير الإبداعي لدى الطلاب في تعلم اللغة العربية من خلال تطبيق نموذج التعليم القائم على المشروع على أساس مهارات التفكير العليا. تستخدم هذه الدراسة منهجًا كميًا مع الأساليب التجريبية لنوع البحث شبه التجريبي مع تصميم البحث المستخدم بعد الاختبار فقط تصميم المجموعة الضابطة. كان السكان في هذه الدراسة الطلاب من المدرسة الثانوية الإسلامية الحكومية الأولى مالانج، جاوة الشرقية، إندونيسيا. كانت أداة جمع البيانات المستخدمة عبارة عن اختبار يستخدم اختبار تحليل اختبار t مستقل. بناءً على اختبار t للعينة المستقلة، كانت قيمة المعنوية لتحليل المتغير  $0.013 > 0.05$  بمتوسط قيمة 75.12 للفئة التجريبية و 70.28 للفئة التحكم. من خلال النتائج التي تم الحصول عليها، هناك تأثير إيجابي كبير بين طلاب الصف التجريبي الذين يستخدمون نماذج التعلم القائم على المشاريع وطلاب الصف الضابط الذين يستخدمون النماذج التقليدية فقط. لذلك لتحسين مهارات التفكير الإبداعي للطلاب، يمكن للمدرسين استخدام التعلم القائم على مشروع مهارات التفكير العليا في تعلم اللغة العربية.

كلمات أساسية: التفكير الإبداعي؛ مهارات التفكير العليا؛ التعلم القائم على المشروع.

## Introduction

Arabic is one of the compulsory subjects taught in madrasas to universities in Indonesia. In essence, Arabic as one of the foreign language competencies that must be possessed by students other than English.<sup>1</sup> Along with the times, the orientation of learning Arabic is directed at improving critical and creative thinking skills in accordance with the needs of 21st century life skills.<sup>2</sup> This is in line with the mandate of the Islamic and Arabic language education curriculum in KMA No. 183 of 2019, which demands higher order thinking skills (HOTS).<sup>3</sup>

The encouragement of the application of HOTS in learning, including the preparation of the design of teaching materials is one of the strategic efforts to improve the quality of teaching and learning, especially learning Arabic. In response to this, Mansor invite Arabic educators and practitioners to improve their skills and knowledge of the HOTS concept.<sup>4</sup> Because HOTS-based Arabic learning will be implemented in learning if educators understand the demands of HOTS comprehensively.<sup>5</sup>

In addition to critical, communicative and collaborative thinking, HOTS learning also aims to increase students' creativity. According to cognitive experts, creativity should be the target of learning outcomes because it belongs to the category of higher-order thinking that can be taught through problem solving in the learning process.<sup>6</sup> Furthermore, Saleh categorizes the skills that students must possess in a changing social life, including: increasing digital literacy, operating technology, global communication skills, human mobility, social networking, being innovative and creative.<sup>7</sup>

Increasing the creativity of students in learning Arabic, should be delivered with a variety of learning models. Therefore, it is necessary to choose the right

<sup>1</sup> Mukmin Mukmin, "The Effect of Educational Background and Language Competence on Students' Arabic Language Motivation," *Arabiyat : Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban* 6, no. 1 (2019): 36–52, <https://doi.org/10.15408/a.v6i1.10484>.

<sup>2</sup> Azkia Albantani and Ahmad Madkur, "Teaching Arabic in the Era of Industrial Revolution 4.0 in Indonesia: Challenges and Opportunities," *ASEAN Journal of Community Engagement* 3, no. 2 (2019), <https://doi.org/10.7454/ajce.v3i2.1063>.

<sup>3</sup> Apri Wardana Ritonga et al., "Crossword Puzzle as a Learning Media during the Covid-19 Pandemic: HOTS, MOTS or LOTS?," *Journal of Physics: Conference Series* 1933, no. 1 (2021): 012126, <https://doi.org/10.1088/1742-6596/1933/1/012126>.

<sup>4</sup> Noor Rohana Mansor et al., "A Preliminary Survey of Language Learning In Digital Age: Higher Thinking Order Skills and Technology Used," *Journal of Physics: Conference Series* 1793, no. 1 (2021): 012001, <https://doi.org/10.1088/1742-6596/1793/1/012001>.

<sup>5</sup> Apri Wardana Ritonga et al., "Teacher's Challenges in Implementing HOTS in Learning Arabic During Covid-19 Pandemic," *Izdihar : Journal of Arabic Language Teaching, Linguistics, and Literature* 4, no. 1 (2021): 1–14, <https://ejournal.umm.ac.id/index.php/izdihar/article/view/15606>.

<sup>6</sup> Makrina Tindangen, "Inquiry-Based Learning Model to Improve Higher Order Thinking Skills," *Asian Social Science* 14, no. 7 (2018): 39, <https://doi.org/10.5539/ass.v14n7p39>.

<sup>7</sup> Salamah Embark Saleh, "Critical Thinking As A 21st Century Skill: Conceptions, Implementation And Challenges In The EFL Classroom," *European Journal of Foreign Language Teaching* 4, no. 1 (2019), <https://doi.org/10.5281/zenodo.2542838>.

learning model so that it can motivate students to devote creative and innovative ideas.<sup>8</sup> So that learning objectives can be achieved, both in the cognitive, affective and psychomotor domains.<sup>9</sup> One of them is by using the Project Based Learning (PjBL) model.<sup>10</sup> PjBL is an innovative learning model that emphasizes students to learn contextually through complex and real activities based on project work.<sup>11</sup>

The values contained in PjBL are in line with the basic principles of curriculum development 2013, which emphasizes that learning must be student-centered through a scientific approach.<sup>12</sup> In PjBL, students are guided to formulate learning outcomes in the form of works through the process of observing, questioning, exploring, associating, and communicating.<sup>13</sup> Seeing the process, this model is the right solution to overcome the problems faced by educators in improving the innovative and creative skills of students.<sup>14</sup>

The importance of creative thinking through the PjBL model, especially in learning Arabic has captured the attention of academics. It is evident from a number of previous studies that have discussed this topic. As Mohammed findings show that PjBL is useful in helping students develop 21st-century skills, and making students independent in managing their learning process.<sup>15</sup> In line with the PjBL concept, Baghoussi describes theoretically, 21st-century skills to shift content-based learning into process-based learning, so that learning is more

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<sup>8</sup> Kani Ulger, "The Effect of Problem-Based Learning on the Creative Thinking and Critical Thinking Disposition of Students in Visual Arts Education," *Interdisciplinary Journal of Problem-Based Learning* 12, no. 1 (2018), <https://doi.org/10.7771/1541-5015.1649>.

<sup>9</sup> Saleh Al-Busaidi and Fawzia Al-Seyabi, "Project-Based Learning as a Tool for Student-Teachers' Professional Development: A Study in an Omani EFL Teacher Education Program," *International Journal of Learning, Teaching and Educational Research* 20, no. 4 (2021), <https://doi.org/10.26803/ijlter.20.4.7>.

<sup>10</sup> Asmaul Husna, Edy Cahyono, and Fianti Fianti, "The Effect of Project Based Learning Model Aided Scratch Media Toward Learning Outcomes and Creativity," *Journal of Innovative Science Education* 8, no. 1 (2019): 1–7, <https://journal.unnes.ac.id/sju/index.php/jise/article/view/25584>.

<sup>11</sup> Susanti, J. Susilowibowo, and H. Tantri Hardini, "Effectiveness of Project-Based Learning Models to Improve Learning Outcomes and Learning Activities of Students in Innovative Learning," *KnE Social Sciences*, 2019, 82–95, <https://doi.org/10.18502/kss.v3i11.4000>.

<sup>12</sup> Fiyola Triana Eldiva and Nur Azizah, "Project Based Learning in Improving Critical Thinking Skill of Children with Special Needs" (International Conference on Special and Inclusive Education (ICSIE 2018), Atlantis Press, 2019), 348, <https://doi.org/10.2991/icsie-18.2019.64>.

<sup>13</sup> Miri Barak and Shiran Yuan, "A Cultural Perspective to Project-Based Learning and the Cultivation of Innovative Thinking," *Thinking Skills and Creativity* 39 (2021): 100766, <https://doi.org/10.1016/j.tsc.2020.100766>.

<sup>14</sup> Pengyue Guo et al., "A Review of Project-Based Learning in Higher Education: Student Outcomes and Measures," *International Journal of Educational Research* 102 (2020): 101586, <https://doi.org/10.1016/j.ijer.2020.101586>; Muhamad Affandi et al., "The Effect of Project Based Learning Models on Improving Student Learning Results on Entrepreneurship Education" (First Transnational Webinar on Adult and Continuing Education (TRACED 2020), Atlantis Press, 2021), 122, <https://doi.org/10.2991/assehr.k.210508.023>.

<sup>15</sup> Noorah Mohammed, "Project-Based Learning in Higher Education in the UAE: A Case Study of Arab Students in Emirati Studies," *Learning and Teaching in Higher Education: Gulf Perspectives* 14, no. 2 (2017): 73–86, <https://doi.org/10.18538/lthe.v14.n2.294>.

relevant and realistic for students.<sup>16</sup> Hanif added that PjBL has a positive impact on the development of students' creativity in the learning process.<sup>17</sup> Macleod confirms that PjBL makes quality education oriented towards effective, efficient, and fun learning for students.<sup>18</sup> At the same time, educators also measure changes in students' attitudes, knowledge, and skills during learning.<sup>19</sup>

Based on the various descriptions above, it is necessary to conduct further studies regarding the exploration of improving students' thinking skills using the HOTS-based PjBL model. Therefore, this PjBL model needs to be applied in Arabic learning holistically, so that Arabic learning outcomes can be achieved properly for the development of students' creativity in accordance with the demands of 21st-century life skills. The results of this study are expected to be a reference for educators in Indonesia in choosing learning models proper Arabic at school.

## Method

This study uses a quantitative approach design with a quasi-experimental research method. The research design used is a post-test only control group design. This study used two classes, namely the experimental class with the learning process using a project-based learning model for higher-order thinking skills and the control class using a conventional learning model. At the end of this study, the second class will be given a test to see their learning outcomes. The learning outcomes that have been obtained are then analyzed using SPSS version 26. This type of research can be seen in Table 1.

**Table 1.** Study Design

Group	Pre-test	treatment	Post-test
experiment	-	x	T
Control	-	-	T

The object of this research is the students of MAN 1 Malang, East Java, Indonesia. Sampling was done by using the cluster random sampling technique, which took two classes randomly from the population. Furthermore, the

<sup>16</sup> Meriem Baghoussi and Ilhem Zoubida El Ouchdi, "The Implementation of the Project-Based Learning Approach in the Algerian EFL Context: Curriculum Designers' Expectations and Teachers' Obstacles," *Arab World English Journal* 10, no. 1 (2019): 271, <https://doi.org/10.24093/awej/vol10no1.23>.

<sup>17</sup> Sofi Hanif, Agus Fany Chandra Wijaya, and Nanang Winarno, "Enhancing Students' Creativity through STEM Project-Based Learning," *Journal of Science Learning* 2, no. 2 (2019): 50–57, <https://doi.org/10.17509/jsl.v2i2.13271>.

<sup>18</sup> Miles MacLeod and Jan T. van der Veen, "Scaffolding Interdisciplinary Project-Based Learning: A Case Study," *European Journal of Engineering Education* 45, no. 3 (2020): 363–77, <https://doi.org/10.1080/03043797.2019.1646210>.

<sup>19</sup> Asmawati Asmawati, Asy'ari Asy'ari, and Malkan Malkan, "Active Learning Strategies Implementation in Arabic Teaching at Senior High School," *International Journal of Contemporary Islamic Education* 2, no. 1 (2020): 1–20, <https://doi.org/10.24239/ijciied.Vol2.Iss1.10>.

experimental class was obtained, namely class X language-1 with a total of 32 students and a control class with 32 students from class X language-2.

The research was conducted in three stages, namely preparation, implementation, and completion. In the preparation stage, the researcher made observations of the research location to ask the value of the daily test results. The next step is to determine the experimental and control classes, determine the research schedule, analyze the Arabic language subject matter for class X, and the lesson plan, prepare an observation format for the assessment of students' and observers' practice in carrying out the assessment, prepare a question sheet for students' higher-order thinking skills for the class. Experiment, dividing students into heterogeneous groups, compiling test questions, and testing them. at the implementation stage, researchers conducted learning in the experimental class and control class.<sup>20</sup> The last stage is completed, the researcher uses tests to obtain the value of learning outcomes in the cognitive domain and collects projects as learning outcomes in the psychomotor domain and through an assessment format to assess students' affective domains. Finally, the research data were validated through statistical tests using SPSS.

## Result and Discussion

### Description of the way of classroom experiment

Before the researchers took measurements of students' creative thinking skills, the researchers first treated the experimental class by applying the HOTS-based learning model. This learning is carried out in accordance with the steps of this learning model, namely: 1) determining the basic questions by providing brainstorming as an initial trigger for students' thinking. 2) Develop a project plan containing the rules of the game in carrying out task activities. 3) Give daily projects to students in the form of results reports. 4) Monitoring. 5) Test the results, and 6) evaluate the experience. Due to the Covid-19 pandemic, the evaluation of learning is carried out online during the learning process and the teacher is only a facilitator so that learning is more focused on students. working steps of learning Arabic using a project-based learning model:

**Table 2.** The working steps of the project-based learning model

Work Steps	Teacher Activity	Student Activity
Fundamental question	The teacher conveys the topic and asks questions how to solve the problem	Asking basic questions what students should do about the topic or problem solving

<sup>20</sup> Samuel R. Hodge, "Routledge Handbook of Adapted Physical Education," in *Quantitative Research* (London: Routledge, 2020), 147, <https://doi.org/10.4324/9780429052675-12>.

Design Product Planning	Ensure that students in each group know the procedures for making the product to be produced	Students discuss preparing a plan for making a problem-solving project including the division of tasks, preparation of tools, materials, media, required resources
Develop a production schedule	Teachers and students make an agreement about the schedule for making the project (stages and collection)	Students prepare a schedule for project completion by taking into account the time limit that has been determined together
Monitoring project activity and progress	The teacher monitors the activity of students while carrying out the project, monitors the realization of progress and guides if they experience difficulties	Students make projects according to schedule, record each stage, discuss problems that arise during project completion with the teacher
Test results	The teacher discusses the project prototype, monitors the involvement of students, measures the achievement of standards	Discuss the feasibility of the project that has been made and make a product/work report to be presented to others
Evaluation of learning experience	The teacher guides the project presentation process, responds to the results, then the teacher and students reflect/ conclusions	Each student presents a report, other students provide feedback, and together with the teacher conclude the project results

The task or the first step carried out by the researcher here is by asking students questions about related tasks to provoke student stimulus and student enthusiasm for learning. The question is contextual in accordance with student understanding. For example, for the "*Al-bayanat As-syakhsiyah*" material. After students answer the questions correctly about the character to be explained. Furthermore, students are divided into five groups, and the processing time is given for one week. Every two days the researchers here do monitoring to see the progress of student projects. The following is an example of a project assignment that will be done by students.

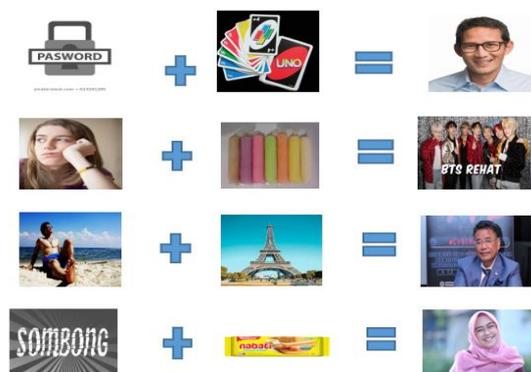
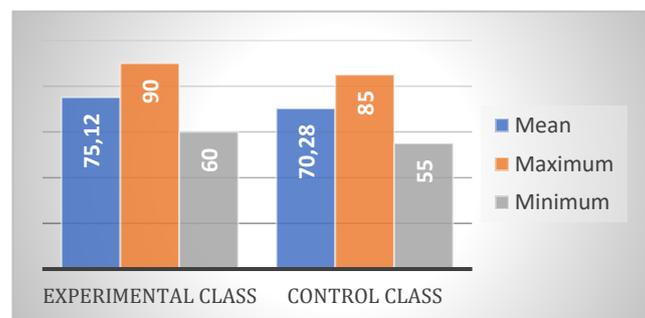


Figure 1. project based learning model

Looking at the picture above, there are several figures obtained through questions or stimulus researchers to students. From these figures, the researcher asks students to work on projects, namely by asking them to explain who the characters are, what is their background, how students can get to know them, what is the role of these figures in Indonesia, and also what positive things students can follow from these figures. After the project was completed, students were asked to present the results of their research on these figures using Arabic in groups and alternately. In the last stage, the researcher and students together, conduct an evaluation by drawing conclusions from the learning projects that have been carried out.

### Description of student creativity improvement

From the research that has been done in the experimental class and also the control class in MAN 1 Malang, East Java, Indonesia. Obtained data as follows:



**Figure 2.** frequency of student' creative thinking

Based on statistical calculations by looking at the picture above, it can be seen that the average post-test in the experimental class obtained a score of 75.12 with a minimum value of 60 and a maximum of 90. While the control class was 70.28 with a minimum value of 55 and a maximum of 85. This means that descriptively, there is an average difference between the control class and the experimental class using the HOTS-based project-based learning model in Arabic subjects.

Furthermore, the researchers tested the analysis prerequisites and calculated the data for normal or homogeneous statements. The normality test for students' analytical thinking ability data in the experimental class was obtained at 0.380 while in the control class the value was 0.417. This shows that the data for the two groups are normally distributed for a significance level of 5%. Homogeneous data in the second group obtained a significance value of 0.066, which means that it can be stated at a significance level of 5% that both groups are homogeneous. Further testing is carried out which can be seen in the following table:

**Table 3.** Independent sample t-test

Creative thinking	Levene's Test for Equality of Variances		t-test for Equality of Means					Std. Error Difference	95% Interval Difference	Confidence of the
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Lower			
Equal variances assumed	3.492	.066	2.566	62	.013	4.844	1.887	1.071	8.617	
Equal variances not assumed			2.566	59.678	.013	4.844	1.887	1.068	8.620	

The criteria for testing the hypothesis, namely  $H_0$  is 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 2, the significance value for students' ability in creative thinking is 0.013, which means that  $H_0$  is rejected. This means that through the project based learning model based on HOTS it can improve students' creative thinking. So that students can think creativity when they encounter problems in learning.

Based on the results of the description above, it is clear that the use of the HOTS-based project-based learning model can improve students' creative thinking skills, this is influenced by fully involving students or student-centered learning. As the understanding of the project based learning model is a learning model that involves the activeness of students in solving problems, both in groups and independently according to the stages and time limits specified.<sup>21</sup>

To have the ability to think creatively alone does not necessarily have or be born naturally to everyone. Stefan says special techniques are needed to help use our brains in different ways.<sup>22</sup> Therefore, in this study, researchers applied learning using a project based learning model that was integrated with HOTS to improve students' creative thinking skills.

Luspita and Yuni research that develops learning by packaging an e-book based on project based learning can train students' creative thinking skills.<sup>23</sup> Another study from Rina Utami et al. also showed that project based learning had an effect on students' creative thinking skills with the help of Instagram.<sup>24</sup> As well

<sup>21</sup> Dayna Laur, *Authentic Learning Experiences: A Real-World Approach to Project-Based Learning* (New York: Routledge, 2013).

<sup>22</sup> Steffen Saifer, *HOT Skills: Developing Higher-Order Thinking in Young Learners. Ages 4 to 8* (Redleaf Press, 2018).

<sup>23</sup> Luspita Wahyuni and Yuni Sri Rahayu, "Pengembangan E-Book Berbasis Project Based Learning (PjBL) Untuk Melatihkan Kemampuan Berpikir Kreatif Pada Materi Pertumbuhan Dan Perkembangan Tumbuhan Kelas XII SMA," *Berkala Ilmiah Pendidikan Biologi (BioEdu)* 10, no. 2 (2021): 314, <https://doi.org/10.26740/bioedu.v10n2.p314-325>.

<sup>24</sup> Rina Putri Utami, Riezky Maya Probosari, and Umi Fatmawati, "Pengaruh Model Pembelajaran Project Based Learning Berbantu Instagram Terhadap Kemampuan Berpikir Kreatif Siswa Kelas X Sma Negeri 8 Surakarta," *Bio-Pedagogi* 4, no. 1 (2015), <https://jurnal.uns.ac.id/pgd/article/view/5364>.

as several other studies also say that the application of project-based learning models has an influence on student creativity which can be seen from the average value of students with project-based learning is higher than conventional learning.<sup>25</sup> As for Caprato in his book and Harun in his research say in detail that higher order thinking skills are a very important requirement at this time so that by applying project-based learning models and STEM can improve students' ability to think critically, actively and creatively.<sup>26</sup>

Steffen said that there are 3 stages of a person's thinking ability, namely; 1) Lower order thinking (LOT). This skill belongs to functional thinking skills, meaning that this skill is only limited to absorbing information. 2) Middle order thinking (MOT). At this stage, students are able to use their logical thinking skills so that the information obtained can already be applied. 3) Higher order Thinking (HOT). This is the highest thinking skill. Those who enter at this stage are the ability to think critically and also think creatively.<sup>27</sup> So that at this stage, students obtain information and apply it students can change or create new information. The following describes thinking skills according to Steffen Saifer:

**Table 4.** The level of thinking ability according to Steffen Saifer

<b>Higher order thinking (HOT): Critical and Creative Thinking Skills</b>	
<i>Information is transformed and created</i>	
<b>Critical thinking skills</b>	<b>Creative thinking skills</b>
Information is transformed	Information is created
Parse	Imagine
Evaluate	Interpret/synthesize
Inference	Induce/theorize
Shift perspective	Reframe
Transfer	Generate
<b>Middle Order Thinking (MOT): Logical Thinking Skills</b>	
<i>Information is Utilized</i>	
Characterize	
Associate/Differentiate	
Categorize	
Sequence/Pattern	
Calculate	

<sup>25</sup> Nanik Wijayati, Woro Sumarni, and Sri Supanti, "Improving Student Creative Thinking Skills Through Project Based Learning" (UNNES International Conference on Research Innovation and Commercialization, Semarang: KnE Social Sciences, 2018), 408, <https://doi.org/10.18502/kss.v3i18.4732>.

<sup>26</sup> Ruhban Maskur et al., "The Effectiveness of Problem Based Learning and Aptitude Treatment Interaction in Improving Mathematical Creative Thinking Skills on Curriculum 2013," *The Effectiveness of Problem Based Learning and Aptitude Treatment Interaction in Improving Mathematical Creative Thinking Skills on Curriculum 2013* 9, no. 1 (2020): 375, <https://doi.org/10.12973/eu-jer.9.1.375>; And see Uhame Binti Harun, "Project-Based Learning Integrated To Stem (Stem-Pjbl) To Enhance Arabic Learning Hots-Based," *Al-Bidayah: Jurnal Pendidikan Dasar Islam* 12, no. 1 (2020): 139, <https://doi.org/10.14421/al-bidayah.v12i1.230>.

<sup>27</sup> Saifer, *HOT Skills*.

Connect Causes and Effects
Represent
Deduce
<b>Lower-Order Thinking (LOT): Functional Thinking Skills</b>
<i>Information is taken in</i>
Imitate/Copy
Follow rules and directions
Memorize/Remember/Recall
Know or do by rote
Identify/Quantify

Based on the table above, it has been conceptually revealed in Steffen Saifer's (2018) book entitled: *Higher Order Thinking Skills: Developing Higher-Order Thinking in Young Learners*. In this book it is explained clearly about the Taxonomy of Thinking Skills (ToTS) that the main outputs of the thinking process are: (1) Selecting and making decisions, (2) Solving problems, (3) Planning and making strategies, (4) Analyzing, and others. This main output is only possible through HOTS (Higher Order Thinking Skills). In accordance with Nur Ngazizah, in his research it can be seen that by applying project-based learning used can improve students' higher-order thinking skills both from the aspects of students' critical thinking, creative thinking, decision making and problem solving.<sup>28</sup>

In addition to using the project-based learning model for creative thinking, students can also use several other HOTS-based models, such as problem solving learning models and inquiry learning models.<sup>29</sup> According to Ennis in Siti et al's research, creative thinking ability is the ability of an individual to create unique ideas so that they can be used in solving a problem and even to be able to bring up new alternatives in solving the problem.<sup>30</sup> Therefore, someone who already has the ability to think creatively must first be able to think critically and problem solving so that the level of creative thinking ability itself is at the top after critical and analytical thinking. As according to Bloom's taxonomy level, this creative thinking ability is at the highest level called the ability to create or create where this ability puts elements together to form a coherent or functional whole, namely by rearranging elements into patterns, or new structure.<sup>31</sup>

<sup>28</sup> Nur Ngazizah et al., "Analisis Kemampuan HOTS Melalui Pjbl Dimasa Pandemi Covid-19 Mahasiswa Semester 2 Pada Mata Kuliah IPA Lanjut," *Jurnal IPA Terpadu* 4, no. 1 (2020), <https://doi.org/10.35580/ipaterpadu.v4i1.15472>.

<sup>29</sup> Yoki Ariyana et al., *Buku Pegangan Pembelajaran Berorientasi Pada Keterampilan Berpikir Tingkat Tinggi: Prigram Peningkatan Kompetensi Pembelajaran Berbasis Zonasi* (Jakarta: Direktorat Jenderal Guru dan Tenaga Kependidikan, 2018), <http://repositori.kemdikbud.go.id/11316/>.

<sup>30</sup> Iik Siti Koyimah, Yeyen Suryani, and Atin Nuryatin, "Pengaruh Penerapan Blended Learning Dalam Model PBL Terhadap Kemampuan Berpikir Kreatif Di Masa Pandemi Covid-19," *Equilibrium: Jurnal Penelitian Pendidikan Dan Ekonomi* 18, no. 02 (2021): 208, <https://doi.org/10.25134/equi.v18i2.4483>.

<sup>31</sup> Wendy Conklin, *Higher-Order Thinking Skills to Develop 21st Century Learners* (Huntington Beach: Shell Education, 2012), 157.

According to Desrani research also said that learning that integrates HOTS in Arabic can improve students' ability to think creatively. The research also mentions that to prepare students to be able to compete in the future, teachers must develop HOTS-based learning in accordance with government directives.<sup>32</sup> This is also supported by Suci's research that by applying HOTS-based Arabic learning can improve students' ability to create creativity, innovation and motivation even during the Covid-19 pandemic.<sup>33</sup>

This research, of course, does not always run smoothly, there are also several obstacles in the process. This obstacle also comes from students who are still less motivated to take part in learning, some of them also think this is too difficult and add to their daily tasks. In addition, low-ability students also find it difficult to balance other students in the group. So that not only students must be creative, teachers are also required to be able to think creatively to motivate students and deal with students who need special attention. Based on the research of Sumarni et al, who applied project-based learning to students' critical and creative thinking skills, it could have a significant effect on improving students' abilities. In addition, he also said that in the implementation of project-based learning, creative teachers are needed, who are able to solve problems, especially to deal with students who are less capable, less motivated, and less focused.<sup>34</sup>

Another study conducted by Yusri et al, entitled "Inculcation of higher order thinking skills in Arabic language teaching" according to him, before these HOTS are tested on students, we must first see whether a teacher has high-level thinking skills, both from the level of critical thinking. to creativity in teaching. Therefore, this study was conducted on as many as 30 teachers who teach Arabic at the elementary school level in Malaysia.<sup>35</sup> This is in accordance with several studies which say that to produce quality human resources or students, of course, it comes from a quality education process.<sup>36</sup> Therefore, it is important to first develop the teacher's ability for better student abilities.<sup>37</sup>

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<sup>32</sup> Ayu Desrani et al., "Arabic Learning Based On Higher Order Thinking Skills (HOST) In The 21st Century," *ICOLEESS: International Conference on Language, Education, Economic and Social Science* 1, no. 1 (2019): 2–8, <https://proceedings.iaipd-nganjuk.ac.id/index.php/icoleess/article/view/12>.

<sup>33</sup> Suci Ramadhanti Febriani, "Implementation of Arabic Learning During Covid-19 Emergency in Indonesia: Hots, Mots, or Lots?," *Alsinatuna* 5, no. 2 (2020): 117, <https://e-journal.iainpekalongan.ac.id/index.php/alsinatuna/article/view/2494>.

<sup>34</sup> W. Sumarni and S. Kadarwati, "Ethno-Stem Project-Based Learning: Its Impact to Critical and Creative Thinking Skills," *Jurnal Pendidikan IPA Indonesia* 9, no. 1 (2020): 11–21, <https://doi.org/10.15294/jpii.v9i1.21754>.

<sup>35</sup> Mohd Yusri Kamarudin et al., "Inculcation of Higher Order Thinking Skills (HOTS) in Arabic Language Teaching at Malaysian Primary Schools," *Creative Education* 7, no. 2 (2016): 307, <https://doi.org/10.4236/ce.2016.72030>.

<sup>36</sup> Jeou-Shyan Horng et al., "Creative Teachers and Creative Teaching Strategies," *International Journal of Consumer Studies* 29, no. 4 (2005): 352, <https://doi.org/10.1111/j.1470-6431.2005.00445.x>.

<sup>37</sup> N. E. Zakiah and D. Fajriadi, "Hybrid-PjBL: Creative Thinking Skills and Self-Regulated Learning of Pre-Service Teachers," *Journal of Physics: Conference Series* 1521, no. 3 (2020),

## Conclusion

Learning that emphasizes increasing thinking power is in line with life skills that students must have in the 21st century. Students who learn Arabic based on PjBL with the HOTS concept have good creativity in the dimensions of observing, asking, exploring, associating and communicating. The teacher's steps in implementing learning using the PjBL model are as follows: *first*, the teacher determines the basic questions by providing brainstorming as an initial trigger for students' thinking. *Second*, the teacher prepares a project plan that contains the rules of the game in carrying out task activities. *Third*, the teacher gives students a daily project in the form of a result report. *Fourth*, the teacher monitors the student's performance. *Fifth*, testing the results of student projects. *sixth*, evaluate student experience.

The results of the use of the pjl model are sufficient to provide a significant influence on changes in student learning outcomes. This is indicated by the independent sample t-test, the significance variable is  $0.013 < 0.05$ , where the average value of the experimental class is 75.12 and the control class is 10.28, which means that there is a positive effect on the use of the PjBL Model in Arabic language learning compared to learning using the conventional model. Seeing that this research only discusses how teachers apply project-based learning models and test the effects of PjBL implementation in Arabic learning, it is hoped that further research can complement this research by exploring the skills of Arabic teachers in designing HOTS-based PjBL learning models, with research objects, methods more comprehensive.

## Acknowledgment

We would like to thank all those involved in this research. especially to all the teachers and students of MAN 1 Malang who have helped us from the initial stages of research to the completion of this research. also to the supervisors who have guided in completing this research. and we apologize if there are many shortcomings and cannot mention in detail the people involved in this research.

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