



## Learning by doing: A teaching paradigm for active learning in Islamic high school

Susanto<sup>1</sup>

Ayu Desrani<sup>2</sup>

Apri Wardana Ritonga<sup>3</sup>

Ramli<sup>4</sup>

Maesaroh Lubis<sup>5</sup>

Nurdin<sup>6</sup>



(✉ Corresponding Author)

<sup>1</sup>University PTIQ Jakarta, Indonesia.

Email: [susanto@ptiq.ac.id](mailto:susanto@ptiq.ac.id)

<sup>2</sup>Islamic Institute of Sabili Bandung, Indonesia.

Email: [aydesrani@gmail.com](mailto:aydesrani@gmail.com)

<sup>3</sup>As-syifa College of Qur'anic Science Subang, Indonesia.

Email: [apriwardanaritonga@stiq.assyifa.ac.id](mailto:apriwardanaritonga@stiq.assyifa.ac.id)

<sup>4</sup>Tarbiyah and Teacher Training Faculty, State Islamic University of Mataram, Indonesia.

Email: [ramlisaleh1967@gmail.com](mailto:ramlisaleh1967@gmail.com)

<sup>5</sup>Muhammadiyah University of Tasikmalaya, Indonesia.

Email: [Maesaroh.lubis@umtas.ac.id](mailto:Maesaroh.lubis@umtas.ac.id)

<sup>6</sup>State Islamic Institute of Kendari, Indonesia.

Email: [nurdinkarim@gmail.com](mailto:nurdinkarim@gmail.com)

### Abstract

This research aims to explore the paradigm of applying learning by doing to create active learning in Islamic education. A combination of both quantitative and qualitative methods was used in this study. Data collection begins with qualitative data and continues with quantitative data. This flow is also known as exploratory sequential design. The study's findings indicate that the use of learning by doing in Islamic education creates a supportive and adaptable learning environment where students can develop their critical thinking, collaboration and communication skills through firsthand experience and other people's teachings. Second, learning by doing has a positive influence on students in Islamic education. The findings of the quantitative data analysis in the test (paired sample t-test) demonstrate a substantial difference between the results before and after implementing learning by doing performance-based learning. The degrees of freedom (dk), the magnitude of which is  $N-1$  as well as  $40-1 = 39$  are the basis for determining the value of the t-table. The value of degrees of freedom 39 at a significant level of 5% is obtained by t-table 1.684. The results can be obtained with a count greater than the t-table namely  $16,701 > 1,684$  and  $\text{Sig. (2-tailed)} = 0.000 < 0.05$  based on the results of the analysis of the t-test (paired sample t-test). So, it can be concluded that learning by doing can improve the ability to think creatively, logically, systematically and critically.

**Keywords:** Active learning, Experiential learning, Islamic education, Islamic institution, Learning by doing, Skill improvement.

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### Contribution of this paper to the literature

The study highlights the importance of implementing learning by doing in Islamic education to cultivate a healthy and responsive student community where students can learn from their own and other people's experiences to sharpen their collaborative, communicative, creative and critical thinking skills.

## 1. Introduction

The age-related development of students encourages them to think and do new things. Teachers must be able to use a range of learning methods to meet students' changing perspectives. Learning by doing is a pragmatic approach to education that is built on two key principles: first, it is children's divine destiny to be active beings. Secondly, students must actively participate in the learning process (Oktar, 2022). The learning process is not limited to memorizing theory and then putting it into practice. Furthermore, active learning in the classroom needs to be done in order to enhance students' abilities and broaden their knowledge.

Learning by doing is a learning process that involves practice to increase knowledge and experience. This method can be applied to students who want to learn new things. Learning by doing focuses more on action than theory by providing real experience to build one's potential. Learning by doing is also called experiential learning. Li and Li's (2020) findings reveal that learning by doing was first developed by a psychologist and educational theorist named John Dewey in 1859. According to him, learning by doing is a process in which knowledge is created through a combination of understanding and changing experience (Cunningham, 2021). The learning by doing approach gives students meaningful learning since they are actively involved in every step of the educational process unlike learning theory in the classroom which can quickly bore students and lead them to forget the material they have studied.

Dewey (1937) contributed many very innovative and significant ideas in the field of education. His innovative concepts are still very applicable and frequently employed in the educational process. Students in the classroom will be greatly assisted in enhancing their experience by applying Dewey's (1937) theory. Students will learn how to actively participate and develop a personal interest in classroom learning so that they can become lifelong learners. It is anticipated that students' skills will be continuously enhanced with new concepts and knowledge leading to a continuous improvement in their quality (Cunningham, 2021). Similarly, they have the ability to face future life with increasingly complex global competitive challenges.

The concept of learning by doing believes that students are able to directly practice the material they learn both individually and in groups. Students can gain practical knowledge about the object that the teacher will be practicing in order to fully comprehend it. Teachers always emphasize that education based on experience provides the greatest value. However, some experiences are instructive while others are not. Experience that does not educate will actually damage education. The concept of learning by doing is an important approach for students to improve the quality of experiences that are getting better for their future life growth (Calma & Dickson-Deane, 2020).

Teachers need to do more than just give their students instructional materials in the classroom; they also need to support the way that their minds are developing through the use of modern technologies. Teachers need to be present at every change in the mindset of students who start thinking about complex things. The creativity of teachers with various learning innovations presented through learning by doing learning must be combined with the support of the school management team so that well-designed goals can be realized properly (Richardson & Mishra, 2018). Niiranen Sonja explained that the era of technological growth requires an attitude of collaboration with all stakeholders including in the educational aspect (Niiranen, Ikonen, Rissanen, & Rasinan, 2020) to actively contribute to raising the standard of education in Indonesia.

Today, learning by doing is starting to be massively implemented in schools. In fact, the learning outcomes obtained from its implementation are good and have a positive impact. This author summarizes the findings of earlier studies as follows: First, Niiranen et al. (2020) said that learning by doing has always been an inherent component of Finnish craft and technology education. Craft learning involves students' direct activities such as actively designing, experimenting, investigating and solving problems. Second, the research results of Niiranen (2021) explain that learning by doing can help students conceptualize technological knowledge and develop their intellectual processes. Third, research by Colombelli, Panelli, and Serraino (2022) explains the relevance of implementing learning by doing in entrepreneurship education activities that can make students independent.

According to the explanation provided, learning by doing is a form of learning that may be applied to classroom active learning in addition to serving as a lifelong direct learning effort. Therefore, this research aims to explore the paradigm of implementing learning by doing to form active learning in Islamic religious learning at State Islamic Senior High School 1, Malang City, Indonesia. This research is expected to be a reference approach that provides a comprehensive understanding for all those who need it about the benefits of implementing learning in schools. Thus, the teacher has additional insight into creating an active learning process that is oriented towards students while providing new knowledge and experience for them in every material being taught.

## 2. Research Design and Data Analysis

### 2.1. Research Design

This research uses a combined research method (mixed method). A combined research method is a research method that combines quantitative and qualitative methods for use in the research process. This method is used to obtain more comprehensive, valid, reliable and objective data (Sugiyono, 2017). This research was first carried out with a qualitative approach and then continued with a quantitative approach. Such research is called exploratory sequential design. The qualitative method used is a descriptive method in which the researcher mentions and describes the use of the teacher's treatment in learning clearly and in detail. The quantitative method used is after the fact. That is, data is collected after all the events have finished taking place. Researchers can see the results of the available data. The combination research process is described as follows:

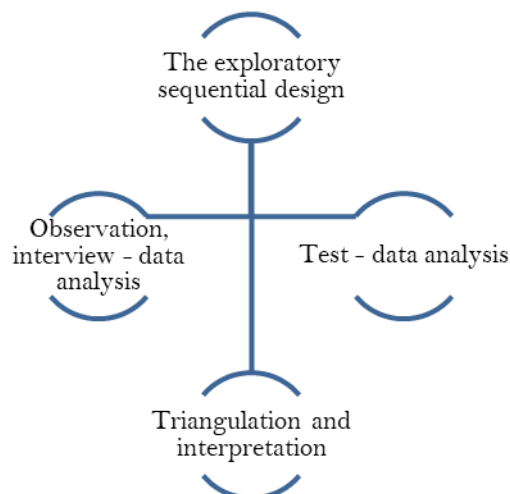


Figure 1. Mix method research using the exploratory sequential design.

The researcher used the explanatory design as a combination method based on Figure 1. Observations and interviews were used to obtain qualitative data which was then analyzed using triangulation. Meanwhile, the test is used for quantitative data and then analyzed using interpretation namely the paired sample t-test.

## 2.2. Research Subjects and Data Collection

Data were obtained from teachers and students at State Islamic Senior High School 1, Malang City, Indonesia. Ten teachers were chosen to obtain data on the application of learning by doing. Qualitative data obtained from the teacher was carried out using observation techniques and interviews. Meanwhile, quantitative data uses tests to see students' thinking abilities after the learning system is implemented using learning by doing. This quantitative data was obtained from student learning outcomes namely as many as 80 students. The selection of this sample was carried out using a simple random sampling technique. The distribution of the instruments will be tested by the level of validity and reliability expert to determine the quality of the instruments and the confidence level of the data described. Overall, the test instruments distributed to measure students' thinking abilities were declared valid and reliable. Next is the data analysis stage where the qualitative data that has been collected will be analyzed using the data reduction process, data presentation and drawing conclusions. The researcher used a simple regression formula and a paired sample t-test using the SPSS 22 program to analyze quantitative data.

## 3. Results and Discussion

### 3.1. The Learning by Doing Paradigm in Learning

Learning by doing is a theory that emphasizes student involvement and is a direct, task-oriented educational process. This learning approach differs from traditional learning styles in that it provides many pedagogical advantages such as a practical and imaginative way of learning. Learning by doing is related to other types of learning such as adventure learning, action learning, cooperative learning, experiential learning, peer learning, service learning and situational learning (Heinrich & Green, 2020). Children are able to study and work as a community in the classroom at their own pace and with the guidance of competent teachers. In the classroom, students can put what they have learned into practice. The concept of learning by doing fosters a healthy and responsive learning community where students can learn from one another and from their own experiences. Learning by doing is also a popular concept in professional learning communities (PLCs). This means that teachers continue to strive to close the gap between students' knowing-doing abilities so that they can be categorized in the PLC community. In this context, learning by doing is a practical guide for PLC teams and leadership. The learning by doing paradigm believes that each student has their own strengths hidden within themselves which requires the teacher and the learning process to reveal every potential that each student has (Berzina, 2019).

Learning by doing is an effective learning method because it provides firsthand experiences, challenges one's comfort zone, and develops success-oriented abilities. This technique has been around for a long time and is also known as experiential learning. According to Confucius, "I hear and I forget. I see, and I remember. I do and I understand" (DuFour, DuFour, Eaker, Many, & Mattos, 2016). Teachers recognize that our deepest insight and understanding come from action followed by reflection and the search for improvement. Learning by doing is a versatile and adaptable pedagogical tool that can be applied in various fields of learning, including Islamic education. Following are some examples of learning by doing in various fields:

Problem-based learning (PBL) is a design model that involves learning by solving real-world problems. It is an effective way to develop critical thinking and problem-solving skills. PBL differs from traditional teaching methods as it focuses on the process of solving problems rather than acquiring knowledge. In PBL, students work in small groups to solve problems presented to them. The problems are usually open-ended and students are asked to identify problems, research problems and develop solutions. The teacher acts as a facilitator, guiding students through the process and providing feedback. PBL encourages critical thinking, problem solving, collaboration and communication skills (Sholihah & Lastariwati, 2020).

Case-based learning (CBL): This learning model is designed to involve learning by analyzing real-world cases. It is an effective way to develop analytical and decision-making skills. In CBL, students work in groups to analyze and solve the problems presented in the case. Cases are usually open-ended and involve real-world scenarios that simulate problems faced by professionals in the field. The instructor's role in CBL is that of a facilitator who guides students through the process and provides feedback. CBL encourages critical thinking, problem solving, collaboration and communication skills. It is also an effective way to promote lifelong learning by encouraging students to take responsibility for their learning (Zhao et al., 2020).

Project-based learning (PjBL) is a student-centered pedagogical approach that involves learning by working on real-world projects. In PjBL, students work on projects in flexible timeframes according to mutual agreement between the teacher and students ranging from a week to a semester to investigate and respond to complex questions, challenges or problems. Projects involve solving real-world problems or answering complex questions. PjBL is an effective way to develop collaboration, communication and project management skills. It also encourages critical thinking, problem solving, creativity and innovation. The teacher guides students through the process and provides feedback while students work more independently (Susanto, 2022).

Inquiry-based learning (IBL) is a pedagogical approach that involves learning by asking questions and exploring topics of interest. In IBL, students are encouraged to identify and research problems and questions to develop knowledge or solutions that begin by posing a question, problem or scenario. This contrasts with traditional education which generally relies on teachers presenting facts and their knowledge of the subject. IBL is a learner-centered learning approach that encourages a higher level of cognition and strong interaction among participants. Thus, it does more than just ask lots of questions to pique students' attention (Khalaf & Zin, 2018).

### *3.2. Paradigm Implementation of Learning by Doing*

The implementation of learning by doing in Islamic education is a form of innovation in learning. Learning by doing is applied to improve students' creative thinking abilities. The basis of learning by doing is in the form of projects assigned to students. In its implementation, informants revealed three stages that must be taken in implementing learning by doing: the preparation stage, core activities and closing activities for students. However, these three steps may differ from policies in other institutions because they are adapted to the learning needs and psychology of students (Susanto, Muafiah, Desrani, Ritonga, & Hakim, 2022). The following describes the implementation steps of learning by doing:

First, in the preparation phase, the teacher prepares all forms of learning media, learning materials and methods to be used. After everything is prepared, the teacher starts learning by working with students to prepare media and provide material. All students collect and form a line in the yard according to their classes before the commencement of the learning process in order to prepare for the start of the teaching and learning activities. Subsequently, students go to their respective classes according to the direction of the teacher. After all students enter, the teaching and learning activities are ready to begin. Learning begins with a prayer followed by questions and answers to stimulate thinking skills and motivate students to continue learning.

In this preparatory stage, the teacher has provided material to stimulate student interest in the form of mix-and-match questions on images displayed on in-focus media and then students answer questions. This question is in the form of contextual material circulating on social media. For example, what the researchers got from the results of the interviews was an image of the sun combined with an image of the Eiffel Tower. The answer is Hotman Paris. Another example is a picture of a laughing person paired with Rici's biscuits and the students answer RIA Rici's. Another example is a picture of a car and a picture of an old man which means Mobile Legend. According to the results of the interview, these pictures can help students think. According to him, who doesn't know these answers because this is very real in the world of students, where most students know Hotman Paris, RIA Rici's and the Mobile Legend application game?

Second, core activities: The core activities begin after the teacher provides stimulus material to the students. In this core activity, the teacher gives the students a project to work on. It can be seen that the teacher gave instructions to students to access social media to look for information that was trending at that time, both from the TikTok, Instagram, Twitter and YouTube applications, to understand and demonstrate based on the results of observations. After the information is obtained, the teacher asks all students to study the information that will be presented in front of the class. This is an apperception activity to improve students' analytical skills on current issues and try to provide relevant solutions.

According to the teacher, the use of social media and contextual-based learning does not make students get bored quickly with learning. The use of technology in learning can make it easier for students to study independently and motivate them to learn more especially with the use of the internet and gadgets. In learning by doing, students are encouraged to ask questions and explore topics they are interested in, which can trigger their curiosity and activate their motivation to learn. Contextual-based learning using real examples can also improve student learning outcomes and develop critical thinking skills. The Freedom to Learn Program in Indonesia encourages teachers to provide guidance to students about events, situations or conditions in their environment which can help students understand their environment and develop their contextual understanding.

Third, closing activities are an important part of the learning process. This closing activity can be used to reflect on students' learning experiences by sharing what they learned, what they enjoyed and what they found challenging. In this activity, students can present their work in front of the class or in front of a panel of experts. This can be an opportunity for students to show off their learning and receive feedback. Another aspect that can be carried out is evaluating student work. This can be an opportunity for students to reflect on their learning, hold discussions about the projects they are working on, and develop action plans to apply the work they have learned in the real world.

Figure 2 gives the impression that learning by doing directs the concept of real learning which is based on three assumptions: a) the concept of learning is best when they are personally involved in the learning experience. b) Knowledge must be discovered by individual students if it is to have significance for them or make a difference in their behavior in everyday life. c) A person's commitment to learning is highest when they are free to set their own learning goals and are able to actively pursue them within a given framework. d) Students are invited to explore new experiences to uncover new information in each of their learning processes.

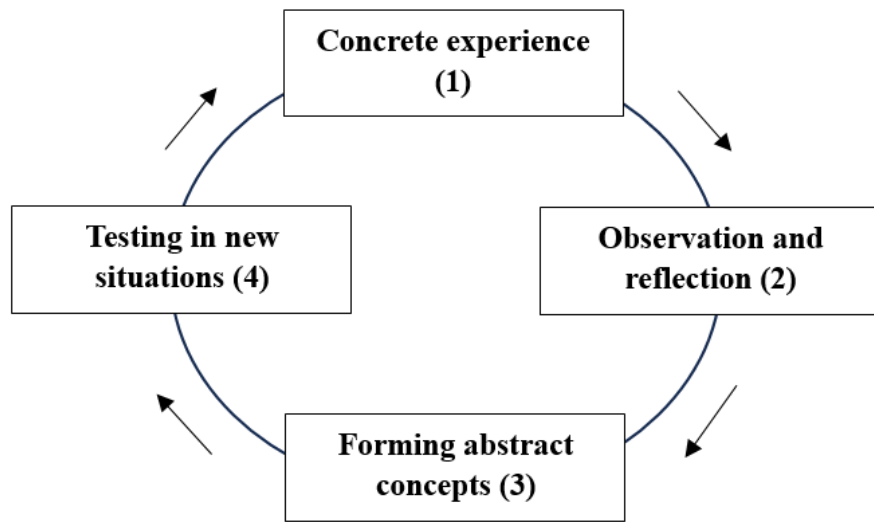


Figure 2. Stages in learning by doing.

Note: Kvieskienė (2006).

### 3.3. The Paradigm of Learning by Doing for Active Learning

We can conclude from the application of learning by doing above that learning by doing can be used to increase student creativity as demonstrated by the principle of comfort which provides creative space for students. Providing debate projects exploring current themes on social media is used to stimulate active thinking skills while playing and learning. This is student-centered learning where the learning process is oriented towards increasing students' creativity and stimulating them to think while the teacher acts as a facilitator and learning mediator. The roles of teachers and students influence each other in creating active and meaningful learning situations. Coorey (2016) states that student activity in learning is an educational design for progress orientation.

From the results of learning by doing, it was determined that students' creative thinking abilities were measured using the paired sample t-test and analyzed using SPSS. Before researchers carry out hypothesis measurements, they first test normality and homogeneity. The normality test uses the one-sample Kolmogorov-Smirnov test which is as follows:

Table 1. One sample Kolmogorov-Smirnov.

Classification	After	Before
N	80	80
Mean	25.358	14.735
Std. deviation	1.0375	8.496
Absolute	0.178	0.194
Positive	0.148	0.186
Negative	-178	-194
Kolmogorov-Smirnov Z	1.346	1486
Asymp. sig. (2-tailed)	0.089	0.074

From the results above in Table 1, in the One Kolmogorov-Smirnov column with N=80, the previous mean value was 14,785 and after application it was 25,858. Meanwhile, the significance is 0.05 for the pre-test 0.074 for the post-test and 0.089 for the post-test. If the significance of all variables is greater than 0.05, it can be concluded that the data on these variables is normally distributed.

Table 2. Test of homogeneity of variances.

Levene statistic	Df1	Df2	Sig.
3.298	2	47	0.085

Looking at Table 2, the significance value of the homogeneity of variances test is 0.085. The significance determined is that if it is greater than 0.05, then the variance data from the two groups is the same. With the same variance results, the paired sample t-test requirements have been fulfilled and can be continued with hypothesis testing. The hypothesis test used is the paired sample t-test where this test is used because the two variables are interconnected. This test is used to determine whether there is a difference in the average between two paired (related) sample groups. The results of the hypothesis test are as follows:

Table 3. Paired samples statistics.

Mean	N	Std. deviation	Std. error	
Pair P1	25.358	80	1.037	17.856
Pair P2	14.735	80	8.496	14.357

The mean value in the experimental group is greater than in the control group or before implementation based on Table 3 regarding paired sample statistics. The mean value after implementing learning by doing in Islamic education is 25,358 and before the implementation of learning by doing it was 14,737. This means that from the overall mean, learning by doing has a good impact on student learning outcomes with a total of N=80.

Table 4. Paired sample t-test.

Results analysis ability	Paired differences							
	Say.	T	Df	Sig. (2-tailed)	Mean	Std. error	95% confidence interval of the difference	
							Lower	Upper
Pair 1 p1-p2	-	16.701	53.738	0.00	15.625	2.371	8.739	10.487

Table 4 shows that there is a significant difference between before and after learning by doing. The t-table value is based on the degrees of freedom of  $N-1$ , namely  $40-1 = 39$ . The value of the degrees of freedom = 39 at a significance level of 5% produces a t-table of 1.684. Based on the results of the t-test analysis (paired sample t-test), the results showed that it was greater than the t-table, namely  $16.701 > 1.684$  and  $\text{Sig. (2-tailed)} = 0.000 < 0.05$ . So, it can be concluded that learning by doing can improve students' creative thinking abilities.

From the explanation above, there is a positive impact on the implementation of learning by doing in Islamic education. All students enthusiastically participate in learning by increasing their creativity and critical attitude through the assignments given to them. This is the background for researchers to implement as well as measure. The results show that learning like this can be applied to any type of learning including Islamic education. According to Healy and Booth (2023), the application of learning by doing in learning provides new innovations for teachers in presenting teaching material so that it becomes self-interest for teachers and students during the learning process.

According to Ahmed and Mikail (2022), active learning can also be created using a learning by doing strategy especially for school students. Learning strategies like this optimize student-centered learning. Student creativity in learning can be easily formed along with the application of learning by doing. Behnamnia, Kamsin, Ismail, and Hayati (2020) said that the main purpose of learning by doing is for a person to be able to use his creativity, knowledge and curiosity to solve problems. In this way, they can gain the competencies needed in the real world. The learning by doing model provides meaningful learning for students because they are directly involved in every learning process carried out starting from design, experimentation, investigation and conclusions.

At the same time, students learn the difference they can make when their approach is to leverage the power of community as a foundation for meaningful engagement. At the beginning of the implementation of the learning by doing semester, students were often resistant, reluctant, afraid and even annoyed. However, at the end of the semester, they were highly critical of public consultation unless they saw room for meaningful engagement. According to Berziņa (2019), it is a good influence that arises from the application of learning by doing to increase student maturity in the learning process. However, the teacher also has a great obligation to shape the mentality of students so that they accept all forms of consequences because of the learning outcomes obtained.

The application of learning by doing in learning provides new innovations in learning so that it becomes self-interest for teachers and students during the learning process. Coorey (2016) also said that active learning can also be created using learning strategies especially for school students. Learning strategies can optimize student-centered learning. Student creativity in learning can be easily formed along with the application of learning by doing. According to Lou, Chou, Shih, and Chung (2017), the primary aim of learning by doing is to enable a person to apply their creativity, knowledge and curiosity to solve problems. In this way, they can gain the competencies needed in the real world.

In Islamic education, the use of learning by doing can help students improve their understanding of Islamic material in a comprehensive manner. Gaining new insights during learning contained in teaching materials can also increase during the learning process. The more creative students are in their learning, the better their understanding will be. Reasoning and communication skills can be seen from the results of student presentations on presenting creativity through learning projects so that it is not monotonous and students do not feel bored quickly. According to DuFour et al. (2016), this type of learning allows students to learn at a deeper level by doing, seeing, hearing and directly demonstrating the material they are studying until they can comprehend it on a genuine level.

#### 4. Conclusion

This research has policy implications for implementing learning by doing in Islamic high schools. The concept of learning by doing provides new opportunities for the advancement of the Islamic education system in Indonesia, with a direct learning model for the object being studied. Based on the results of research data analysis originating from qualitative and quantitative sources, it can be concluded as follows: The study's findings indicate that the use of learning by doing in Islamic education creates a supportive and adaptable learning environment where students can develop their critical thinking, collaboration, and communication skills through firsthand experience and other people's teachings. Conventional learning seems easy to forget but learning from experience will bring maximum learning value. Second, the implementation of learning by doing in Islamic education has a positive impact on students in terms of mastering material, forming mentalities, producing creativity and brilliant ideas, improving critical attitudes, problem solving, collaboration and communication skills. This statement is supported by the results of quantitative data analysis on the t-test (paired sample t-test) which show significant differences between the results before and after the implementation of doing-based learning. To look at the table of values, it is based on the degrees of freedom (dk), the magnitude of which is  $N-1$ , namely  $40-1 = 39$ . The value of degrees of freedom = 39 at a significant level of 5% is obtained with t-table = 1.684. Based on the results of the t-test analysis (paired sample t-test), it can be concluded that the number of t is greater than the t-table, namely  $16.701 > 1.684$  and  $\text{Sig. (2 tails)} = 0.000 < 0.05$ . So, it can be concluded that learning by doing can improve the ability to think creatively, logically, systematically and critically.

However, the results of this study are still quite limited given the very large scientific demands. So, the researcher recommends that future researchers can make improvements and follow up on the results of this study. There are many things that need to be solved, including looking at the portrait of learning by doing at Islamic tertiary institutions in Indonesia. This is important to discuss as an institution's effort to guarantee professional

qualifications for every graduate at an Islamic tertiary institution relating to the presence of a teacher in an educational setting and measuring the effectiveness of learning implementation is another aspect of the study. The values of tolerance and learning by doing are also interesting things to discuss bearing in mind that tolerance is an important thing to interpret in the social sphere so that researchers can measure students' tolerance that emerges after learning to use the learning by doing model.

## References

- Ahmed, I. A., & Mikail, M. A. (2022). Interactive instructor for a synergistic student-centered and personalized teaching: A biosocial approach. *Education and Urban Society*, 55(8), 996-1018. <https://doi.org/10.1177/00131245221106717>
- Behnamnia, N., Kamsin, A., Ismail, M. A. B., & Hayati, A. (2020). The effective components of creativity in digital game-based learning among young children: A case study. *Children and Youth Services Review*, 116, 105227. <https://doi.org/10.1016/j.chilyouth.2020.105227>
- Berziņa, D. (2019). Learning by doing case study: Education for sustainable development at the University of Latvia. *Periodicals of Engineering and Natural Sciences*, 7(1), 156-164. <https://doi.org/10.21533/pen.v7i1.356>
- Calma, A., & Dickson-Deane, C. (2020). The student as customer and quality in higher education. *International Journal of Educational Management*, 34(8), 1221-1235. <https://doi.org/10.1108/IJEM-03-2019-0093>
- Colombelli, A., Panelli, A., & Serraino, F. (2022). A learning-by-doing approach to entrepreneurship education: Evidence from a short intensive online international program. *Administrative Sciences*, 12(1), 1-27. <https://doi.org/10.3390/admsci12010016>
- Coorey, J. (2016). Active learning methods and technology: Strategies for design education. *International Journal of Art & Design Education*, 35(3), 337-347. <https://doi.org/10.1111/jade.12112>
- Cunningham, C. A. (2021). *John Dewey and curriculum studies in Oxford research encyclopedia of education*: Oxford University Press. <https://doi.org/10.1093/acrefore/9780190264093.013.1587>.
- Dewey, J. (1937). Education and social change. *Bulletin of the American Association of University Professors (1915-1955)*, 23(6), 472-474. <https://doi.org/10.2307/40219908>
- DuFour, R., DuFour, R., Eaker, R., Many, T. W., & Mattos, M. (2016). *Learning by doing: A handbook for professional learning communities at work*. Bloomington: Solution Tree Press.
- Healy, T., & Booth, A. L. (2023). The importance of being taught: Improving public engagement in resource management through learning by doing. *Socio-Ecological Practice Research*, 5(1), 111-121. <https://doi.org/10.1007/s42532-023-00141-1>
- Heinrich, W. F., & Green, P. M. (2020). Remixing approaches to experiential learning, design, and assessment. *Journal of Experiential Education*, 43(2), 205-223. <https://doi.org/10.1177/1053825920915608>
- Khalaf, B. K., & Zin, Z. B. M. (2018). Traditional and inquiry-based learning pedagogy: A systematic critical review. *International Journal of Instruction*, 11(4), 545-564. <https://doi.org/10.12973/iji.2018.11434a>
- Kvieskienė, G. (2006). Civic education in pre-service training program for teachers and children welfare professionals. *Social Work & Society*, 4(1), 123-139.
- Li, R., & Li, R. (2020). John dewey and progressive education. *Rediscovering John Dewey: How His Psychology Transforms Our Education*, 309-346. [https://doi.org/10.1007/978-981-15-7941-7\\_12](https://doi.org/10.1007/978-981-15-7941-7_12)
- Lou, S. J., Chou, Y. C., Shih, R. C., & Chung, C. C. (2017). A study of creativity in CaC 2 steamship-derived STEM project-based learning. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(6), 2387-2404. <https://doi.org/10.12973/EURASIA.2017.01231A>
- Niiranen, S. (2021). Supporting the development of students' technological understanding in craft and technology education via the learning-by-doing approach. *International Journal of Technology and Design Education*, 31(1), 81-93. <https://doi.org/10.1007/s10798-019-09546-0>
- Niiranen, S., Ikonen, P., Rissanen, T., & Rasinen, A. (2020). Development of teacher education students' pedagogical content knowledge through reflection and a learning-by-doing approach in craft and technology education. *Design and Technology Education*, 25(3), 35-46. <https://ojs.lboro.ac.uk/DATE/article/view/2843>
- Oktar, S. (2022). Madrasaty: A new model of Islamic higher education integrating religion and science inspired by Madrasah and University. *Katre International Human Studies Journal*, 13, 32-62. <https://doi.org/10.53427/katre.1089699>
- Richardson, C., & Mishra, P. (2018). Learning environments that support student creativity: Developing the SCALE. *Thinking Skills and Creativity*, 27, 45-54. <https://doi.org/10.1016/j.tsc.2017.11.004>
- Sholihah, T. M., & Lastariwati, B. (2020). Problem based learning to increase competence of critical thinking and problem solving. *Journal of Education and Learning*, 14(1), 148-154. <https://doi.org/10.11591/edulearn.v14i1.13772>
- Sugiyono. (2017). *Educational research methods: quantitative, qualitative and R&D approaches*. Bandung: Alfabeta.
- Susanto, S. (2022). Improving students' creative thinking in learning Arabic through HOTS based project based learning model. *An Nabighoh: Jurnal Pendidikan dan Pembelajaran Bahasa Arab*, 24(1), 1-16. <https://doi.org/10.32332/an-nabighoh.v24i1.3924>
- Susanto, S., Muafiah, E., Desrani, A., Ritonga, A. W., & Hakim, A. R. (2022). Trends of educational technology (EdTech): Students' perceptions of technology to improve the quality of Islamic higher education in Indonesia. *International Journal of Learning, Teaching and Educational Research*, 21(6), 226-246. <https://doi.org/10.26803/ijlter.21.6.14>
- Zhao, W., He, L., Deng, W., Zhu, J., Su, A., & Zhang, Y. (2020). The effectiveness of the combined problem-based learning and case-based learning teaching method in the clinical practical teaching of thyroid disease. *BMC Medical Education*, 20(1), 1-10. <https://doi.org/10.1186/s12909-020-02306-y>