THE CONSTRUCTION LEARNING MODEL OF ISLAMIC EDUCATION IN SOCIETY 5.0 AND ITS RELEVANCE AT ISLAMIC BOARDING SCHOOLS ON JAVA ISLAND

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Abstract

The study aimed to determine the urgency of digitizing Islamic boarding school education in Society 5.0 and the effectiveness of the IT-based collaborative learning model on the creative thinking abilities of students in Islamic boarding schools on the island of Java. This mixed methods research method combines two previously existing forms of research, namely qualitative research and quantitative research. The population referred to in this research were all class X students in Islamic boarding schools on the island of Java, including Islamic boarding schools in Banten and Islamic boarding schools in East Java. The variables of this research are the IT-based collaborative learning model and creative thinking abilities. Based on the results of data analysis, it was concluded that 1) urgency digitizing Islamic boarding school education in Society 5.0 is one of the efforts that must be made for all Islamic boarding schools, especially Islamic boarding schools on the Island of Java; 2) Collaborative learning model was very effective for improving students' creative thinking abilities. All aspects of creative thinking can be developed through IT-based collaborative learning in facing Society 5.0 in Islamic boarding schools on the island of Java.

Keywords: construction; education; model; Islamic and learning

Abstrak

Penelitian ini bertujuan untuk menentukan urgensi digitalisasi pendidikan pesantren di dalam Masyarakat 5.0 dan efektivitas model pembelajaran kolaboratif berbasis IT terhadap kemampuan berpikir kreatif siswa di pesantren di pulau Jawa. Metode penelitian campuran ini menggabungkan dua bentuk penelitian yang sebelumnya ada, yaitu penelitian kualitatif dan penelitian kuantitatif. Populasi yang dimaksud dalam penelitian ini adalah semua siswa kelas X di pesantren di pulau Jawa, termasuk pesantren di Banten dan pesantren di Jawa Timur. Variabel penelitian ini adalah model pembelajaran kolaboratif berbasis IT dan kemampuan berpikir kreatif. Berdasarkan hasil analisis data, disimpulkan bahwa 1) urgensi digitalisasi pendidikan pesantren di dalam Masyarakat 5.0 adalah salah satu upaya yang harus dilakukan untuk semua pesantren, khususnya pesantren di Pulau Jawa; 2) Model pembelajaran kolaboratif sangat efektif untuk meningkatkan kemampuan berpikir kreatif siswa. Semua aspek berpikir kreatif dapat dikembangkan melalui pembelajaran kolaboratif berbasis IT dalam menghadapi Masyarakat 5.0 di pesantren di pulau Jawa.

Kata kunci: *konstruksi; pendidikan; model; Islam dan pembelajaran*

Introduction

Islamic boarding school is a unique and distinctive education system that exists in Indonesia, where the majority of the population is Muslim (Muhaimin Latif & Erwin Hafid, 2021). Furthermore, Islamic boarding schools are considered the oldest Islamic educational institutions in Indonesia, which since their inception have had distinctive characteristics and are different from other Islamic education, namely that they still refer to the traditional education system and have not abandoned local eastern culture (Sutrisna & Mukh Nursikin, 2023). Historically, Indonesian Islamic education was able to survive the heavy blows of the modernist movement without losing its identity. The concrete manifestation of this experience is the effort to adapt the Islamic education system to face the challenges of colonialism and overseas expansion (Tolchan, 2020). It is unfortunate to note that rather than preparing for the dawn of Society 5.0, the learning process in Islamic boarding schools is still perceived as indoctrination. These schools are not well-versed with global issues, including diversity and national identity (Ahmad Saefudin et.al, 2021).

The progress of civilization creates an order that develops in Society 5.0, a social order that is human-centered and technology-based (Hadiapurwa et al., 2021). Society in the 5.0 era is conceptualized as a society that is literate in information and communication technology (Sukarno, 2020). In this era, society is required to be able to solve various problems by utilizing various innovations as a result of acceleration in the 4.0 era, such as the internet for everything, big data, and robots to help human life (Novrizaldi, 2021). In the field of education in Society 5.0, teachers or students in the learning process directly encounter robots that are specifically designed to replace educators or are controlled by educators remotely. It is not impossible that the teaching and learning process can occur anywhere and at any time.

On January 21, 2019, Japan proposed the concept of Society 5.0. (Skobelev & Borovik, 2017). Automation and digitalization in Society 5.0 replace human labor in the global industrialization project. (Aurachman, 2018). The concept of Society 5.0 aims to address diverse human needs and improve the overall quality of life. (Afif, 2019). The difference between Industry 4.0 and Society 5.0 is that the latter places humans at the center of using IoT, big data, and AI to restore human life. (Holroyd, 2020). IoT, or the Internet of Things, refers to the technology that enables physical objects to connect to the internet. (Nasution, Rizal, Setiawan &Hasan, 2019). This technology allows objects to connect to the internet and be controlled by humans from a distance. A well-known example of this technology is the GPS (Global Positioning System) service. Big Data is a breakthrough in database systems. In simple terms, it refers to a large amount of data collected at a high speed. (Oli-viandi, Osmond, & Latuconsina, 2018). The use of big data can be beneficial for humans in collecting and analyzing information quickly and inexpensively, leading to accurate and precise decision-making. Artificial Intelligence (AI) refers to computer-generated intelligence that can imitate human thinking. AI can be in the form of machine or software designed and trained to gather information, regulate its use, and make conclusions based on predefined rules, with the ability to correct itself. The use of big data can be beneficial for humans in collecting and analyzing information quickly and inexpensively, leading to accurate and precise decision-making. Artificial Intelligence (AI) refers to computer-generated intelligence that can imitate human thinking. AI can be in the form of machine or

software designed and trained to gather information, regulate its use, and make conclusions based on predefined rules, with the ability to correct itself. (Priyanto, Zarlis, Mawengkang, &Efendi, 2019). There are two types of AI system development: weak AI, which is designed and trained to perform specific tasks, and strong AI, which is designed with cognitive abilities to find solutions without human assistance. (Park & Park, 2018). The more data collected, the smarter an AI-embedded machine becomes (Priyanto, Zarlis, Mawengkang, & Efendi, 2019).

In Society 5.0, big data collected by AoT is transformed by AI to assist people. (Skobelev & Borovik, 2017). Regarding education, Society 5.0 introduces machines that can either replace or be controlled by educators, allowing students to learn more efficiently (Rouf, 2019).

Islamic education in Indonesia cannot be separated from very complex problems. Many problems arise not only in terms of educational concepts, regulations, and budgets but the problem of implementing education from different systems in Indonesia also complicates educational problems in Indonesia. No less important, the sophistication of technology, where everything is now digital-based, and the flow of globalization have also added to the complexity of Islamic education issues (Afliflah, 2017). Currently, Islamic education has passed the point of decision-making and historical reality, as part of the Muslim community who loves history, because they are proud to have great thinkers and scholars who have contributed a lot to world development and civilization. On the other hand, Muslims are faced with the fact that Islamic education is powerless to face the realities of industrial society and modern technology. This article tries to identify and understand the problems of Islamic education in the era of the Industrial Revolution 5.0 which focuses on formal education problems, by outlining the problems of learning Islamic religious education related to educators, students, and technology-based learning facilities. Islamic education has three main tasks. First, the transmission of Islamic knowledge. Second, maintenance of Islamic traditions. Third, giving birth to (potential) ulama (reproduction of 'ulama'). Islamic boarding school as a religion-based educational institution in Indonesia, which has an important role in shaping the people and civilization in Indonesia, has certainly become an example in carrying out these tasks (JLamhari, 2018).

Based on the Ministry of Religion's report, it shows that there are 26,975 Islamic boarding schools in Indonesia as of January 2022. West Java contributes the largest number of Islamic boarding schools, namely 8,343 Islamic boarding schools, or around 30.92% of the total national Islamic boarding schools. Banten is in second place, with 4,579 Islamic boarding schools. East Java follows in third place with 4,452 Islamic boarding schools, of which 3,787 Islamic boarding schools are in Central Java. Then, as many as 1,177 Islamic boarding schools and 684 Islamic boarding schools are in Aceh and West Nusa Tenggara. Lampung is recorded as having 677 Islamic boarding schools. DI Yogyakarta, South Sumatra, and South Sulawesi each have 319 Islamic boarding schools, 317 Islamic boarding schools, and 289 Islamic boarding schools. Meanwhile, the province with the smallest number of Islamic boarding schools in Indonesia is Maluku. The number is only 16 Islamic boarding schools (https://databloks.katadata.co.id). Based on this data, Islamic boarding schools on the island of Java have the largest number of Islamic boarding schools in Indonesia.

As time goes by, Islamic boarding schools, especially in Java, must be updated by the demands of the times. Islamic boarding schools also do the same thing, namely making contact

with the outside world of science. That way, it will increase lots of Wasan, which will help boarding schools move forward and develop. Even though they still maintain the old teaching system, namely *blandungan*, *sorogan*, and *wetonan*, Islamic boarding schools have now started to establish or provide formal education (Krisdiyanto, et. al., 2019). The response to the current, increasingly rapid development of this era certainly requires educational institutions, and boarding schools, for keep going to do various innovations and creativity, including the digitalization of education (Arif, 2013). Currently, Indonesia is believed to be in the Age of Society 5.0, where man becomes a mover of IPTEK (Science, Knowledge, and Technology) and innovation (Rahman and Husin, 2022). Currently, Islamic boarding school education is faced with challenges that cannot be avoided with the rapid development of technology. Islamic boarding schools must be able to face both ways: follow technology development as well as still maintain the Islamic boarding school culture that has been tested in the Islamic boarding school journey. The ability in terms of creativity, critical thinking, and communication in facing the 5.0 era is very necessary. Civilization at that time was human-centered, therefore required the cultivation of good character, caring, and tolerance. Likewise with the ability to innovate, think creatively, and critically. The goal of society in the 5.0 era is to unite the virtual world and the real world, to make everything easier with the presence of artificial intelligence. The application of this is applied in creative and collaborative learning in preparing Islamic boarding school education to be able to follow advances in information technology. Islamic boarding school education in the future is determined by integrating cultural abilities with the international system, which is demonstrated by rational, dynamic, and competitive relationships. Islamic boarding schools are faced with the acceleration of science and technology (Mundiri & Nawiro, 2019). The right Islamic boarding school can adapt and contribute to modern development. Apart from that, it must maintain its characterization as a moral-spiritual foundation and its function in building a religious society (Muniflah, 2019). Islamic boarding school is very much in the future, urgent to reformulate the system that is the best choice in facing the era of globalization (Rohlman, 2019). Therefore, students must have the ability to think creatively.

Based on initial observations at Islamic boarding schools, it show that the low creative thinking abilities of students are caused by learning that is dominated by lectures. This condition hampers students' creative thinking abilities because they are used to following the teacher's way of solving problems. The learning process is still dominated by the orientation of providing knowledge rather than extracting knowledge (Ridong Lu et al., 2016; Mrayyan, 2016). Students can develop creative thinking if there are challenges to their cognition. Ningrum (2016) stated that creative thinking abilities can be developed by getting students used to solving problems independently. Alzoubli et al (2016) also expressed the same thing, the ability to think creatively can increase curiosity and exploration. Students who have high curiosity will be challenged to try to solve something new.

Based on the explanation above, developing students' creative thinking abilities is very necessary. Collaborative learning is learning that provides freedom for students and their groups to discover new concepts. Therefore, collaborative learning is indicated to improve creative thinking abilities. Okoye et al (2016) found that there was a significant difference between the group that received collaborative learning and the control group that did not receive treatment in the area of increasing competence. Collaborative learning is indicated to increase students'

competence. Students who have good competencies will find it easier to develop creative thinking abilities. Therefore, collaborative learning is indicated to have a contribution to improving creative thinking abilities.

This study aims to determine the urgency of digitizing Islamic boarding school education in Society 5.0 and the effectiveness of the IT-based collaborative learning model on the creative thinking abilities of students in Islamic boarding schools on the island of Java.

Method

Research including mixed methods was a research step that combines two previously existing forms of research, namely qualitative research and quantitative research. According to Creswell (2018), mixed research is a research approach that combines qualitative research with quantitative research. Qualitative research to answer the first aim and quantitative research to answer the second aim. This quantitative research used a type of quasi-experimental research or pseudo-experiment because the researcher applies actions in the form of learning methods.

The population reflerred to in this researchl is all class X students in Islamic boarding schools on the Island of Java specifically in east Java as 305 students were selected from the best Islamic boarding schools from the selected areas of the sample. The East Java region has 6 of the best, among others:
1. Darussalam Gontor Modern Islamic Boarding School.
2. Al Kautsar Banyuwangi Modern Islamic Boarding School.
3. Al Mukhtar Modern Islamic Boarding School, Jember.
4. Al Amien Prenduan Islamic Boarding School, Sumenep.
5. Lamongan Muhammadiyah Modern Islamic Boarding School.
6. eLKISI Mojokerto Islamic Center Islamic Boarding School.

This sampling technique used convenience sampling because it makes it easier for researchers to obtain research data selected Islamic boarding schools are Al Kautsar Banyuwangi Modern Islamic Boarding School and Al Mukhtar Modern Islamic Boarding School, Jember. Data sources methods were interviews and documentation. The total sample was 64 students who had the best grades in several selected Islamic boarding schools. The variables of this research are the IT-based collaborative learning model (X) and creative thinking abilities (Y). The conceptual model in the research is explained in Figure 1.
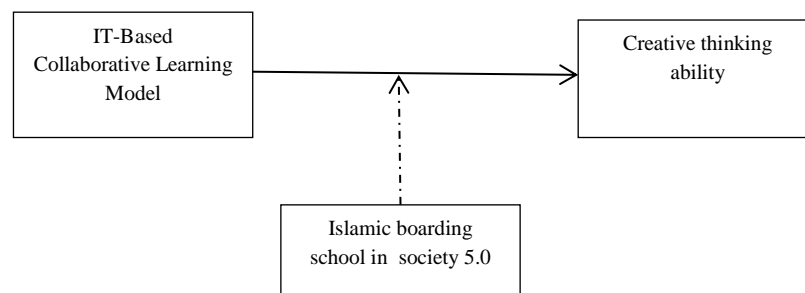

Figure 1. Research Model

Before implementing the research, the researcher tested the validity of the questions that would be used in this research using content validity. After carrying out validity, the researcher analyzed the reliability of the pre-test and post-test scores. The reliability used in this research is the Cronbach's Alpha formula. Data analysis techniques to answer the problem formulation and research hypothesis, an average difference test was carried out. First, a data normality test was carried out using the One-Sample Kolmogorov-Smirnov Test. If the data is normally distributed, then the average difference test uses a parametric test in the form of One sample-t Subject and paired sample t-test (Santoso, 2018). However, if the data is not normally distributed, then the average difference test uses a non-parametric test in the form of the Wilcoxon Signed Ranks Test.

Results and Discussion

The Urgency of Digitalizing Islamic Boarding School Education in Society 5.0

Islamic education in a sustainable manner is based on a combination of conventional Islamic delivery and information technology, by current developments. Based on this approach, Muslim communities in Indonesia can communicate with Muslims abroad without being limited by time and location. This situation has created an environment called Cyber Islam. Since the time of the Prophet (PBUH), the spread of Islamic teachings has always used various strategies, including oral methods, warfare, and marriage. With information communication technology, the Muslim community has realized the importance of utilizing this change for da'wah purposes. The information posted on various media channels has been able to clarify the truth about Islamic teachings and Muslims.

The results of a general survey on Islamic boarding school websites and materials on the internet were found to be informational and initiated by individuals, private parties, and NGOs. This website, which offers free services, is often visited by Indonesian users because it is easy to use for da'wah purposes, such as uploading audio, video, text material, and indirectly contains elements of applying Islamic values. Apart from that, the website with complete Islamic features is a reference for internet users in Indonesia. Although most Islamic boarding school websites belong to specific individuals and groups, the government has taken the initiative to collect questions about legal issues in Islam by creating certain websites, that can serve as a reference for Muslims around the world.

Several Islamic boarding schools use the education system and the implementation of teaching experience transformation due to the influence of science, technology, education in Indonesia, and the demands of society in the Islamic boarding school environment itself. Some Islamic boarding schools still maintain their old systems. In this case, the teaching method in Islamic boarding schools consists of two systems, namely: 1) Traditional System: Sorogan, is an education system where every student recites the Quran in front of the Ustadz and Kiyai; 2) Wetonan (Javanese), is an education system where the Kyai reads the students aloud, then followed and seen by the students; and 3) Blandongan, is a combination of the two methods above: Modern System, Classical System; Course system and Training system.

The Islamic boarding school classification reflects a response to the dynamics of the times and the dialectics of science and technology acceleration. Society places hope in contemporary Islamic boarding schools to educate an innovative and competitive generation. Contemporary Islamic boarding schools have the trust of the community to entrust their children without thinking about how much it will cost. This reality makes contemporary Islamic boarding schools good business from the special mission of schools built by the private sector. Contemporary digital-based Islamic boarding schools implement modern management, providing quality assurance and educational learning processes. In this way, the community can control and evaluate activities at the Islamic boarding school.

The public's mindset is more confident in the vision, mission, goals, and programs that are reliable and have quality guarantees. To achieve this excellence requires input, learning processes, teachers, teaching staff, management, educational services, and facilities to support these goals. This perspective describes contemporary Islamic boarding schools with output, process, superstructure, and infrastructure indicators. What is hoped for in the future by digital Islamic boarding schools is good Kyai leadership, partnerships with stakeholders, academic and scientific culture, future orientation, and democratic conditions.

The contemporary Islamic boarding school model is ideal, and commitment and togetherness are needed to achieve this target. The contemporary Islamic boarding school model must be supported by five pillars, namely (1) focusing on the development of students; (2) involvement of all members as a whole; (3) taking measurements, (4) commitment to change; and (5) practice solving problems continuously. Meanwhile, the implementation of the education and teaching system in Islamic boarding schools is classified into three types, namely: First, the non-classical method (*Blandungan* and *Sorogan* systems) where a Kyai teaches based on books written in Arabic, and then the students live in Islamic boarding schools to learn from the Kyai. Second, with the *weton* system, where students come in droves at certain times. This *weton* system is the same as the first system, but the difference is that the students are not provided with accommodation but instead live scattered throughout the village around the Islamic boarding school. The third is the Islamic boarding school system which combines the Blandungan, Sorogan, and Wetonan systems. In this system, Islamic boarding schools also provide formal education in the form of madrasas and even public schools at various levels and vocations according to community needs (Krisdiyanto, et. al., 2019).

The world of education, including Islamic boarding schools, after the emergence of the disruptive innovation phenomenon, is predicted to enter an era of digitalization of the education system, where teaching and learning activities will change completely. Classrooms are experiencing an evolution with digital learning patterns that provide a more creative, participatory, diverse, and comprehensive learning experience. The existence of information technology has erased geographical boundaries which has triggered the emergence of new ways to produce innovations. Developments in digital technology with Artificial Intelligence (AI) convert data into information, making it easy and cheap for people to obtain it. Now we can see that many teachers or *ustadz* when teaching have given online-based assignments where the search for information is not limited to printed books alone. This can be seen in several Islamic boarding schools and school libraries which have started to use technology in the form of e-books and online internet (Manan, 2019).

However, efforts to open space for dialogue with changing times by adopting new values that are more relevant and bring benefits are also more perfect in maintaining the existence of Islamic boarding schools in line with the rules of fiqh, maintaining firmly and preserving old values that are still relevant and adopting new values that are far more relevant (Manan, 2019).

According to Solichlin (2011), there are two main reasons behind the importance of modernizing Islamic education, namely: First, the concept and practice of Islamic education have so far been too narrow, placing too much emphasis on the interests of the afterlife, which has given rise to a scientific dichotomy that has been inherited by Muslims since the decline of Islam (12th century). Second, Islamic educational institutions to date have not been or are unable to meet the needs of Muslims in facing the challenges of the modern world and the challenges of Indonesian society and nation in all fields. Therefore, to face and move towards civil society in Society 5.0, the concept of digitizing Islamic boarding school education and its fundamental role in empowering Muslims is needed. In this perspective, Islamic boarding schools as Islamic educational institutions are expected to be able to improve themselves so that they are not only able to become a model for the transmission of culture, knowledge, and expertise but also as an interaction of potential and culture, namely how Islamic boarding school educational institutions can develop children's potential given by Allah from birth in the context of preparing children. students (students) to live their lives (Manan, 2019).

Islamic boarding schools use old methods such as lectures as the only dominant technique in delivering preaching and learning material, not only because the reach of the audience segment is limited by space and time but also due to the flexibility of access to preaching material. A technology-based model of da'wah and education is necessary. Due to the reality of Society Era 5.0 society being able to access lectures, tussah, and da'wah materials easily wherever and whenever they want it, slowly the social model has had a lot of influence on the understanding of religion, especially for Islamic boarding school students, the majority of whom are young people. This condition needs to be a concern for Islamic boarding schools in balancing the Islamic literature that is spread through social media, especially messages containing conservative, intolerant, liberal, and radical ideological biases by producing moderate, humanist, and tolerant Islamic literature with the help of technology. One of the efforts that can be developed in Islamic boarding schools in this effort includes digitizing Islamic boarding school education through efforts to build digital literacy in Islamic boarding schools and creating channels for Islamic studies (Gazali, 2018). One of the efforts that can be developed in Islamic boarding schools in this effort includes digitizing Islamic boarding school education through efforts to build digital literacy in Islamic boarding schools and creating channels for Islamic studies (Gazali, 2018).

The Effectiveness of IT-Based Collaborative Learning Models on the Creative Thinking Ability of Santri in Islamic Boarding Schools on Java Island

This research was a quasi-experimental research conducted at Islamic boarding schools on the island of Java with selected Islamic boarding schools that have easy access to data. Based on the selected sample, 64 students were divided into control classes who had low and high creative thinking abilities based on the results of the initial test. This research raises research variables, namely the independent variable of history learning with IT-based collaborative learning methods, and the dependent variable, namely the ability to think critically.

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Research data was obtained from the results of the pre-test and post-test carried out in the experimental class and control class. The pre-test is an ability test given to students before they were given treatment, while the post-test was carried out after the students received treatment. These two tests function to measure the effectiveness of the learning program. Before collecting data, the researcher tested the question instruments that would be used as pre-test and post-test questions.

The thesis of the data in this research provides an overview of the characteristics of the score distribution and research subjects for each subject studied. This research took as subjects 64 respondents who took Islamic Religious Education subjects. The results of research analysis carried out using descriptive analysis, and statistical tests in proving hypotheses can be explained as follows.

The Result of Description Analysis

This data thesis will present the data that has been obtained in the research. In the data description, the lowest value, highest value, range of values, mean (M), mode (Me), mode (Mo), and standard deviation (SD) of each creative thinking ability test data will be presented. The data regarding this research involves two variables, namely the IT-based collaborative learning model as the independent variable (X), and the ability to think creatively as the dependent variable (Y). Data on the independent variables and dependent variables were taken in January 2023. The process of collecting data on student activities was carried out by observers while learning was taking place by the affective assessment in the Learning Implementation Plan (RPP). The following are the results of observations made in the experimental class and control class.

Table 1. Observation Results of Students' Activities in the Experimental Class and Control Class

No	Oblservation Aspect	Experimental Class	Control Class
1	Thlink smoothlly	74%	63%
2	Thlink fllexiblly	75%	70%
3	Thlink original	74%	59%
4	Elablorative thlinking	74%	67%
Average		75%	65%

Source: Data processed

After experiencing the learning process, the experimental class was given treatment in the form of learning using a collaborative learning model. The average post-test score for the experimental class was the same compared to the control class, namely 85 for the experimental class and 85 for the control class. Meanwhile, before the learning process was carried out, the average pre-test score for the experimental class and the control class was 75 for the experimental class and 73 for the control class. The following is a bar diagram of the average pre-test and post-test scores for the experimental class and the control class.
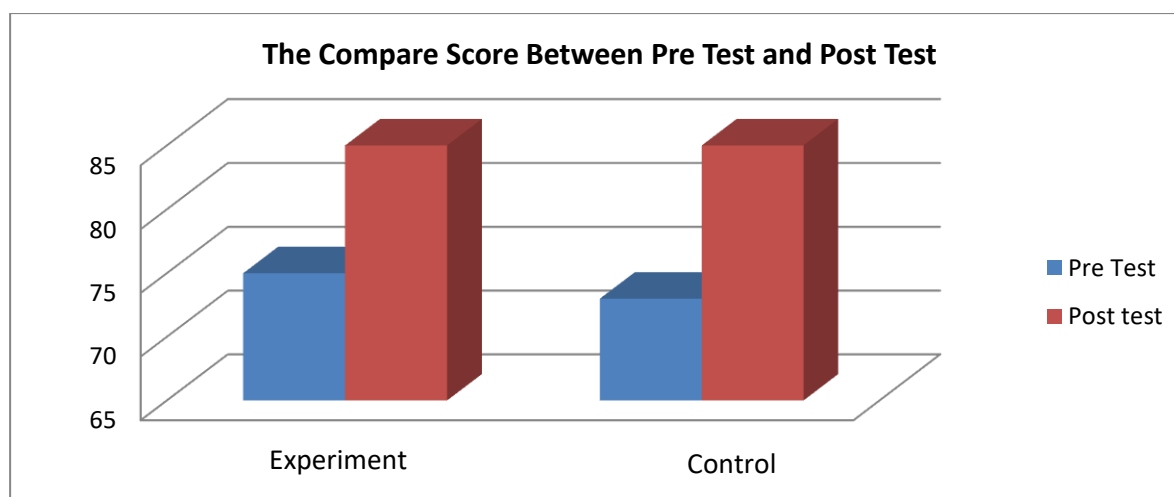
Graphic 1. Average Value of the Experimental Class and Control Class

Based on Graphic 1, it is clear that the average value of the experimental and control classes has both increased. This shows that the IT-based collaborative learning model provided improves students' creative thinking abilities.

Normality Test of Pre-test and Post-Test

Based on the calculations, the significance values obtained for the pre-test and post-test scores for the experimental class and control class are as shown in Table 2.

Table 2. Normality Test Results for Pre-Test Values for Experimental Class and Control Class

One-Sample Kolmogorov-Smirnov Test		Pre-test Experimental Class	Pre-test Control class	Post-test Experimental Class	Post-test Control class
N		32	32	32	32
Normal Parameters, bl	Mean	75.25	72.56	84.58	84.58
	Std. Deviation	8,890	7,326	3,140	3,140
Most Extreme Diflflerences	Ablsolute	0.328	0.228	0.434	0.434
	Positive	0.140	0.147	,253	0.253
	Negative	-0.328	-0.228	-0.434	-0.434
Kolmogorov-Smirnov Z		1,256	1,288	1,455	1,455
Asymp. Sig. (2-tailed)		0.080	0.073	0.162	0.162

Source: Data processed

Based on Table 2, it can be seen that the significance value of the pre-test value in the experimental class is 0.080, which is > 0.05. Similarly, the post-test value in the experimental class is 0.162, also > 0.05. The pre-test value in the control class is 0.073, and the post-test score in the control class is 0.162, both of which are > 0.05. Because the significance value for both classes is > 0.05, H0 is accepted. This shows that the pre-test and post-test scores for both the experimental class and the control class come from normally distributed samples.

Hypothesis Testing

Hypothesis testing involves analyzing the data obtained from the pre-test and post-test results in the experimental class and the control class. Hypothesis testing is carried out using a one-way t-test. This data results from the calculations of the one-way t-test, assessing creative thinking abilities in the experimental class and the control class. In principle, one-sample testing aims to determine whether a certain value (given as a comparison) is significantly different from the average of a sample. The particular value here is generally a parameter used to measure a population. The results of the One-sample T Test (Within-Subject) for the pre-test and post-test scores in the experimental class are presented in Table 3.

Table 3. Results of *One-sample T Test (Within-Subject)*Pre Test and Post Test scores

One-Sample Test

	Test Value = 32						
	t	dfl	Sig. (2-tailed)	Mean Diflflerence	95% Conflidence Interval ofl thle Diflflerence		
					Lower	Upper	
*Pre-test*Experimental Class	27,521	31	,000	43,250	40.04	46.46	
*Post-test*Experimental Class	94,746	31	,000	52,583	51.45	53.72	

Based on Table 3, shows that the significance value for the experimental class pre-test value is 0.000, which is <0.05, and the significance value for the experimental class post-test value is 0.000, which is <0.005. This shows that the pre-test and post-test scores for the experimental class proved to be a significant difference in the total achievement of 32 students. Test results for the One-sample T Test (Within-Subject) Pre-Test and Post-Test scores from the control class are presented in Table 4.

Table 4. Results *One-sample T-Test (Withlin-Subljlect)* Control Class Pre-Test and Post-Test scores

One-Sample Test

	Test Value = 32					
	t	dfl	Sig. (2-tailed)	Mean Diflflerence	95% Conflidence Interval ofl thle Diflflerence	
					Lower	Upper
*Pre-test*Control class	31,320	31	,000	40,563	37.92	43.20
*Post-test*Control class	94,746	31	,000	52,583	51.45	53.72

Based on Table 4, it shows that the significance value for the control class pre-test value is 0.000, which is less than 0.05, and the significance value for the control class post-test value is 0.000, which is less than 0.005. This indicates that the pre-test and post-test scores of the control class demonstrated a significant difference in comparison to the total achievement of 32 students. However, the difference from the control class is shown to be very low.

The Result of t-test for Pre-Test in the Experimental and Control Groups

A t-test was conducted on the pre-test scores of the experimental group and the control group to determine whether there were differences in pre-test scores between the experimental class and the control class, as presented in Table 5.

Based on Table 5, it shows that the significance value for the experimental class pre-test value is 0.000, which is <0.05. This shows that the experimental class pre-test scores have a significant difference. These results show that hypothesis one states that there is a significant difference in the average creative thinking ability of the Islamic Religious Education pretest between the experimental class and the control class, and it is accepted. This means that hypothesis one is proven statistically.

Table 5. Results *Test* FLor *Pre-Test* Experimental Group and Control Group

		Paired Diflflerences					t	dfl	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Conflidence Interval ofl thle Diflflerence				
					Lower	Upper			
Pair 1	*Pre-test* Experimental Class - Pre-test Control class	2,688	11,569	2,045	-1,483	6,858	1,314	31	0.198

Table 6. Results *t test* For *Post test* Experimental Group and Control Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	*Post-test* Experimental Class	84.58a	32	3,140	0.555
	Post-test Control class	84.58a	32	3,140	0.555

Based on Table 6, it shows that the significance value for the experimental class post-test scores is proven to be no different because there is the same average for the post-test scores in both the experimental and control classes. This result shows the second hypothesis, which states that there is no significant difference in the average creative thinking ability posttest of Islamic Religious Education between the experimental class and the control class because the averages are not different. However, because there is an increase in creative thinking abilities from the pre-test to the post-test, whether in the experimental class or the control class, the collaborative learning model still has an influence.

Paired Sample Test Results

The influence of the IT-based collaborative learning model on creative thinking abilities was tested through a paired t-test. Previously, a paired t-test was conducted for each pre-test and post-test result for each class. This test was carried out to compare the pre-test and post-test scores of research subjects, with the assumption that the data were normally distributed. The test results of the IT-based collaborative learning model on creative thinking abilities can be seen in Table 7.

Table 7. Paired Sample Test Results

			Pair 1	Pair 2
			*Pre-test*Experimental Class - Post-test Experimental Class	*Pre-test*Control class - Post-test Control class
Paired Diflflerences	Mean		-9,333	-12,021
	Std. Deviation		8,505	7,127
	Std. Error Mean		1,503	1,260
	95% Conflidence Interval ofl	Lower	-12,400	-14,590
	thle Diflflerence	Upper	-6,267	-9,451
t			-6,208	-9,542
dfl			31	31
Sig. (2-tailed)			0,000	0,000

Table 7 shows that there are significant differences in the pre-test and post-test results from the experimental and control classes. If the calculated 't' value is greater than the 't' table, then the technique used is effective in improving certain aspects in certain groups at $\alpha = 0.05$. The significance value of the 't' calculated from the pre-test results of the experimental class shows that there is a significant difference between the results of the pre-test and post-test, with a comparison of the significance of the 't' count of 0.000 < 0.005.

The test results show that the IT-based collaborative learning model can improve creative thinking abilities, meaning that there are differences in creative thinking abilities before using the IT-based collaborative learning model and after the IT-based collaborative learning model. This shows that the IT-based collaborative learning model can improve creative thinking abilities. This shows that the hypothesis about there being a significant difference in the increase (gain) in creative thinking abilities in Islamic Religious Education classes between the experimental and control classes has been proven to be true statistically.

The results of the research show that the implementation of learning using an IT-based collaborative learning model affects students' creative thinking abilities. This can be seen by the differences in the students' creative thinking abilities in the two groups. This is proven by obtaining an average score for the student's creative thinking ability in the experimental class of 75. Meanwhile, for the control class, the average value of the student's creative thinking ability was 73. This can be interpreted that when the students take part in learning activities using a collaborative learning model based on the same IT, then the amount of creative thinking ability between the experimental class and the control class will be balanced or the results will not be much different.

The difference in creative thinking abilities between classes of students who use an IT-based collaborative learning model and those who don't use conventional (model/demonstrator) IT-based collaborative learning is higher than that of students who don't use IT-based collaborative learning models. This shows that the IT-based collaborative learning model influences creative thinking abilities. Currently, there are still many teachers who use simple IT-based collaborative learning models that do not attract students' interest in participating in learning, resulting in students' creative thinking abilities being low. So, to make learning about charging systems more interesting and improve students' abilities, an interactive IT-based collaborative learning model is needed, and a teacher must be able to use this model. The use of an IT-based collaborative learning model will make students interested in taking lessons because it suits their characteristics.

Students' interest in participating in the learning process will help them accept the material presented and study more diligently, so their creative thinking abilities also increase

Conclusion

Entering the era of society 5.0, Islamic boarding school education, especially on the island of Java, has carried out a digitalization process. This is based on the findings in this research that the process of digitizing Islamic boarding school education, especially on the island of Java, is carried out by building digital literacy in Islamic boarding schools and creating Islamic study channels. This is done so that education at Islamic boarding schools can survive amidst the development of society towards the era of society 5.0.

Collaborative learning models are very effective for improving students' creative thinking abilities. All aspects of creative thinking can be developed through IT-based collaborative learning in facing Society 5.0 in Islamic boarding schools on the island of Java. Based on the findings in this research the use of an IT-based collaborative learning model will make students interested in taking lessons because it suits their characteristics. Students' interest in participating in the learning process will help them accept the material presented and study more diligently, so their creative thinking abilities also increase.

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