

Science-Based Inquiry Learning With Islamic Values To Improve Students' Critical Thinking

[Pembelajaran Inkuiri Berbasis Sains Terintegrasi Nilai-Nilai Islam Untuk Meningkatkan Berpikir Kritis Siswa]

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Abstract. *This research aims to facilitate and help science learning at school for practice. Students can discover, collect, test, and analyze various natural phenomena. Science learning by applying the guided inquiry method which is integrated with Islamic values aims to improve students' critical thinking skills. This research method uses a mixed method, namely combining qualitative and quantitative data collection techniques in one research activity, this aims to obtain in-depth data that can be generalized more widely. Quantitative data to analyze students' critical thinking skills and qualitative data to integrate Islamic values and science using guided inquiry learning. Results of this research show that students' critical thinking abilities with the inquiry model are greater than with conventional learning models. The results of inquiry learning patterns that integrate Islamic values and science can improve students' critical thinking skills in elementary schools. Students experience meaningful learning activities to thank God for everything that has been created. Efforts to integrate Islamic values and science are important for developing knowledge and character.*

Keywords – *inquiry learning, science learning, Islamic values, critical thinking skill*

Abstrak. *Penelitian ini bertujuan untuk memfasilitasi dan membantu pembelajaran IPA di sekolah untuk melatih siswa dapat dalam menemukan, mengumpulkan, mengujicoba dan menganalisis berbagai fenomena alam. Pembelajaran IPA dengan menerapkan metode inkuiri terbimbing yang diintegrasikan dengan nilai-nilai Islam bertujuan untuk meningkatkan keterampilan berpikir kritis siswa. Metode penelitian ini menggunakan mixed method yakni mengkombinasikan teknik pengumpulan data kualitatif dan kuantitatif dalam satu kegiatan penelitian, hal ini bertujuan agar mendapatkan data yang mendalam dan dapat digeneralisasikan secara lebih luas. Data kuantitatif untuk menganalisis keterampilan berpikir kritis siswa dan data kualitatif untuk mengintegrasikan nilai-nilai Islam dan ilmu pengetahuan menggunakan pembelajaran inkuiri terbimbing. Hasil penelitian ini menunjukkan kemampuan berpikir kritis siswa dengan model inkuiri lebih besar dibandingkan dengan model pembelajaran konvensional. Hasil pola pembelajaran inkuiri yang mengintegrasikan nilai-nilai keislaman dan sains dapat meningkatkan keterampilan berpikir kritis siswa di sekolah dasar. Para siswa mengalami kegiatan pembelajaran yang bermakna untuk berterima kasih kepada Tuhan atas apa saja yang telah diciptakan. Upaya mengintegrasikan nilai-nilai Islam dan sains penting untuk mengembangkan pengetahuan dan karakter.*

Kata Kunci - *pembelajaran inkuiri; nilai-nilai Islam; keterampilan berpikir kritis*

I. INTRODUCTION

Education is a continuous process of learning in social activities to acquire knowledge, skills, attitudes, and thinking abilities that are carried out by a person to develop individual skills that can later be useful in community life. One form of thinking skill obtained through the educational process is critical thinking skills [1]. The goal of 21st-century education is to inspire everyone to be able to think critically when selecting accurate and relevant knowledge, discover imaginatively, work individually or in groups, and be able to overcome difficulties that arise in everyday life [2]. It is important to develop students' critical thinking skills because it impacts their ability to face challenges in everyday life [3]. Critical thinking skills are very important in the current digital era so that students are ready to face obstacles or changing situations in an ever-changing world [4]. The learning process must lead to critical thinking to produce result [5].

Studying science can help students strengthen critical thinking skills. Primary school science lessons must be integrated, with students receiving hands-on experience to expand their knowledge. A constructivist learning environment provides opportunities for students to search for different information, process it from various perspectives, build connections between the learning process and student experiences, support different learning styles, and encourage reflection activities during learning [6]. In the science learning process in elementary schools, teachers encourage students to learn on their own by conducting experiments to collect data, making observations to arouse curiosity, and receiving critical thinking training so they can solve problems by providing clear explanations [7]. One of the higher-level thinking skills that can be obtained through science education is critical thinking [8]. One teaching and learning approach that can be used to improve critical thinking skills is the inquiry learning model, where students are used as the topic of teaching and learning and each student is required to actively participate in teaching and learning activities [9]. Critical thinking skills are very relevant if trained using an inquiry-based learning model so the appropriate learning model is the inquiry learning model [10].

Based on the findings of observations that have been made, there are several problems with learning activities, including learning that is still teacher-centered, the teacher's teaching style is monotonous according to students because it does not use varied models in learning. Class IV students generally have advanced cognitive abilities to the concrete operational development stage. Students who are at the concrete operational stage can think rationally and methodically to solve problems, but they still need help from the teacher to complete the task. Children over the age of 10 usually try to complete tasks independently and face them freely [11]. The tendency of students to be required to hone their memory skills without being encouraged to think critically, and not training students to develop their reasoning power in applying the concepts they have learned [12]. The low critical thinking abilities of students are due to the learning process not facilitating them to develop their critical thinking abilities [13]. Students have not been trained to ask and answer questions, and they have not been accustomed to expressing their ideas or opinions. Students who are less active and only listen to the teacher's explanation will result in students who do not dare to express ideas or opinions and tend to only carry out instructions. A key element in the success of the teaching and learning process is the development of student's critical thinking abilities.

Religion and science are interrelated and bind each other; they cannot be separated. The Koran also states that its contents include everything related to religion and science which is beyond doubt [14]. Integrating Islamic values in learning is considered important, especially for Muslims. Moreover, science learning directs students to increase their sense of admiration and faith in the power of God Almighty [15]. Since both are identical in their scientific mission, religion, and science must coexist [16]. The dichotomy between religious knowledge and natural science can be combined appropriately so that they do not stand alone. The integration of religious knowledge and science is essential if science and religion are to enable readers to understand the greatness of God's understanding [17]. In this way, education becomes a forum for students to change themselves and their way of thinking for the better. This research analyzes the integration of Islamic values in the guided inquiry learning model on students' critical thinking skills.

The importance of integrating science learning and Islamic values provides an assessment not only of increasing student knowledge but also of increasing skills and forming the religious attitudes that students expect [18]. By integrating Islamic religious education with science and technology, it is hoped that the learning carried out will be more meaningful and easier to understand. So education aims to direct students to know, understand, appreciate, believe, be devout, and have a noble character in practicing the teachings of the Islamic religion from its main sources, namely the holy books Al-Quran and Al-Hadith, through teaching guidance, training, and use activities. experience can be implemented [16]. By studying religion and science, scientists will bring themselves to change for the better and be able to interpret knowledge that should be addressed to all who will study it. Peace in life or region because many wise people have deep knowledge based on complete faith [19].

In general, inquiry-based learning is a teaching and learning method in which the instructor facilitates the learning process while students actively participate in it [20]. In the inquiry learning model, learning is centered on student activity, and the teacher's task is to provide instructions to students in the form of methodically structured questions that lead to the discovery of ideas [21]. Inquiry-based teaching involves generating situations in which students are asked to observe and question phenomena, suggest explanations for the observations they make, design and carry out experiments that provide supporting evidence, and analyze data and draw conclusions from the data [22]. Knowledge that is built on facts and experience will be more easily accepted and will remain in the mind for relatively long. Students learn best when faced with problems. In inquiry, students carry out investigations and find for themselves what they are looking for. Students help each other in their groups to solve problems so they can improve learning. Because of their involvement in the investigation, students who learn through the inquiry learning model have increased motivation and drive to apply

their skills in solving problems [23][24][25]. Several previous studies have examined inquiry learning models that have an impact on science process skills [26][27][28][29][30], critical thinking skills [31][10][32][33][34], creative thinking skills [35][36][37][38][39] and also problem-solving skills [40][41][42][43][44]. However, there is still little research in Indonesia that examines the relationship between inquiry learning and critical thinking skills. Apart from that, there is still no integration of Islamic values in inquiry learning in science subjects.

II. METHOD

This research uses mixed research methods, namely research that integrates qualitative and quantitative data in one study [45]. This research was conducted in one of the grade IV elementary schools in Sidoarjo which was divided into 2 classes; control and experimental classes. The learning materials used are related to the topic of plant growth processes. The instrument used to collect data was a test sheet given to determine students' critical thinking skills through pretest and posttest. Qualitative methods through observation, interviews, and supporting documents for learning activities integrating Islamic values and science using science-based inquiry learning. The quantitative method used was quasi-experimental with only a pretest-posttest control group design. The research design is in Table 1.

Table 1. Research Design

Group	Observations	Treatment	Observations
Experiment	X1	O1	Y1
Control	X2	O2	Y2

The pretest-posttest group design uses two groups, namely the experiment group using inquiry learning (O1) and the control group using conventional learning (O2) whose abilities are determined before and after studying the growth process (X) and (Y). The learning process in the experimental class uses science context-based inquiry learning which follows the stages of observation, investigation, explanation, conclusion, and communication (Table 2).

Table 2: Syntax and Student Activities in Inquiry Learning

No.	Syntax	Student Activities
1	Observation	Students identify problems based on existing phenomena
2	Investigation	Students carry out investigations based on the results of the problems identified in groups
3	Explanation	Students interpret and explain the results of the investigation in the form of written explanations
4	Conclusion	Students make conclusions about the content of the material based on the results of the investigation
5	Communication	Students explain the results of the investigation classically

Inquiry's five learning stages accommodate inquiry learning with a scientific approach to facilitate the development of critical thinking skills. The relationship between learning stages and critical thinking skills is shown in Table 3.

Table 3: The Relationship between Inquiry Learning and Critical Thinking Skills

No.	Syntax	Student Activities
1	Observation	Gather basic information
2	Investigation	Perform basic clarification of the problem
3	Explanation	Carry out strategies and tactics to make the best conclusions
4	Conclusion	Make conclusions
5	Communication	Provide further explanation

The data collection technique used in this research is by giving tests and observing the learning process and student activities. The instrument used is a critical thinking ability test which consists of the following five indicators: analyzing arguments; concluding; observing and considering the results of observations; deciding on a course of action, and focusing questions [6]. This test is given before and after the learning process. During the learning process, two observers observed

the inquiry learning process and group activities. The collected data was then analyzed descriptively and inferentially. Qualitative data is then preceded by quantitative descriptive methods by calculating the percentage of each aspect measured.

III. RESULT AND DISCUSSION

Inquiry learning with a science context is learning that is developed using a science context as a medium to build and improve students' critical thinking abilities. Students carry out inquiry stages guided by the teacher because students are still in fourth grade at elementary school. Learning consists of observation, investigation, explanation, conclusion, and communication (Table 2). This inquiry learning stage provides students with the opportunity to carry out investigative activities under teacher supervision (Table 2). The inquiry learning stage is carried out by presenting phenomena, which are wrapped in the context of science in a personal, social, or global context. Furthermore, students are allowed to ask questions and solve problems through the following stages of inquiry: identifying problems, conducting scientific experiments, collecting, processing, and analyzing data, presenting data, and concluding and explaining the results that have been concluded.

Implementation of science-based inquiry learning integrated with Islamic values

The application of inquiry learning begins with students identifying problems based on existing phenomena by playing videos about the plant growth process. The students were seen paying serious attention to the video shown by the teacher. After watching the video, the teacher distributes a piece of paper to all students and the students ask a question related to the video they have watched. They ask questions by writing them on the paper provided by the teacher. Fifteen questions from 15 students. There are eight different questions, including: (1) What are the parts of a plant? (2) What is the process of plant growth? (3) Why is sunlight important for plant growth? (4) What is the function of each part of the plant? (5) What happens if plants don't get sunlight? (6) What is meant by the process of photosynthesis (7) What is meant by growth? (8) What influences the plant growth process? Based on this question, it shows that class IV students have enough critical thinking when facing a certain phenomenon. Asking questions can initiate students' thinking skills process. Students' ability to ask critical questions is also one of the skills they hope to acquire in the 21st century [46].

Based on the students' questions above, students are then asked to investigate the process of plant growth. Students in groups plan procedures, carry out experiments enthusiastically, and are actively involved. They also wrote down the results of their observations, presented them in a table, and then concluded. After that, they presented the results of their experiment to another group by providing an explanation by two students and asking questions given to another group by two other students in that group. Using this method, plant lessons consist of 3 different meetings with the following topics: discussion of plant body parts and their functions, the process of photosynthesis and relating the importance of this process to living things, and plant growth.

Learning activity I, discussion of plant body parts and their functions. Students are divided into groups to engage, explore, explain, elaborate, and evaluate their learning. In study groups, students observe the parts of the plants that have been provided. After that, students write down the results of their investigations and observations in their groups. Students learn that each part of the body has its function which aims to fulfill the plant's needs for survival. Students are encouraged to search for and collect various supporting information from the internet or other sources. Students prove it directly through simple experiments. From the various procedures carried out, students can communicate learning results to teachers and classmates. Students learn scientific stories based on the values of the Qur'an. The Qur'an also explains the greatness of Allah's creation in al-A'raf verse 58.

وَالْبَلَدُ الطَّيِّبُ يَخْرُجُ نَبَاتُهُ بِإِذْنِ رَبِّهِمْ وَالَّذِي خَبِثَ لَا يَخْرُجُ إِلَّا نَكِدًا ۚ كَذَلِكَ نُصَرِّفُ الْآيَاتِ لِقَوْمٍ يَشْكُرُونَ

“And good land, the plants grow abundantly with Allah's permission, and the soil is not fertile, the plants only grow miserable. Thus We repeat the signs of (Our) greatness for those who are grateful.”

Learning activity II, the process of photosynthesis, and relating the importance of this process to living things. Humans and animals will look for food if they feel hungry. Animals will move looking for prey. People will cook or go to buy what they need. Then, what about plants? These living creatures do not move from place to place like us. Neither has a mouth. However, just like all other living creatures, plants also need food. This is done through the process of photosynthesis. Students are divided into groups to engage, explore, explain, elaborate, and evaluate their learning. In study groups, students observe the process of plant photosynthesis. After that, students write down the results of their

investigations and observations with their groups. Students are encouraged to search for and collect various supporting information from the internet or other sources. From the various procedures carried out, students can communicate exam results to teachers and classmates.

Students learn scientific stories based on Al-Qur'an values from the teacher's presentation regarding Al-Qur'an verses about plant growth. Allah is the one who sends down rain from the sky, which causes the growth of various types of plants consisting of various shapes, kinds, and flavors. The Qur'an also explains the greatness of Allah's creation in Surah Al-An'am verse 99.

وَهُوَ الَّذِي أَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجْنَا بِهِ نَبَاتَ كُلِّ شَيْءٍ فَأَخْرَجْنَا مِنْهُ خَضِرًا مِثْلَهُ خُضِرًا ثُمَّ أَخْرَجْنَا مِنْهُ حَبًّا مُتَرَاكِبًا وَمِنَ النَّخْلِ مِنْ طَلْعِهَا قِنْوَانٌ دَانِيَةٌ وَجَنَّاتٍ مِّنْ أَعْنَابٍ وَالزَّيْتُونَ وَالرُّمَّانَ مُشْتَبِهًا وَغَيْرَ مُتَشَابِهٍ انظُرُوا إِلَى ثَمَرِهِ إِذَا أَثْمَرَ وَيَنْعِهِ إِنَّ فِي ذَلِكُمْ لَآيَاتٍ لِّقَوْمٍ يُؤْمِنُونَ

"And He is the One who sends down rain from the sky, then We make all kinds of plants grow with that water. So We bring out from it plants in layers. And from a date palm tree that has thick bunches, it grows from its base, bunches that bend down because of its weight, and vineyards, and olives, and pomegranates, all like and not like. Look at the fruit when it bears fruit, and look when it is ripe. Verily in that are signs (of the greatness of Allah) for the people who believe."

Learning activity III, plant growth. Students are asked to investigate the process of plant growth. Students are divided into groups to engage, explore, explain, elaborate, and evaluate their learning. Students prepare tools and materials, the teacher prepares student activity sheets. Students investigated the growth process of green bean plants planted in two places with different treatments. The first green bean seeds were treated with murottal verses from the Koran and the second green bean seeds were not treated with murottal verses from the Koran. Students observe the growth process of the green bean seeds and water them every day. Students are encouraged to search for and collect various supporting information from the internet or other sources. Students learn scientific stories based on Al-Qur'an values from the teacher's presentation regarding Al-Qur'an verses about plant growth. The Qur'an also explains the greatness of Allah's creation in Surah Yasin verse 33.

وَأَيُّ لَآئِمٍ لَهُمُ الْأَرْضُ الْمَيْتَةَ أَحْيَيْنَاهَا وَأَخْرَجْنَا مِنْهَا حَبًّا فَمِنْهُ يَأْكُلُونَ

"And a sign (of Allah's great power) for them is the dead earth. We revived the earth and brought out grain from it, so they ate from it."

Table 4. Observation Results of the Application of Inquiry Learning

Activity Stages	Activity Description	Average Learning Process Assessment		
		First	Second	Third
Introduction	The teacher greets conducts apperception, and conveys the learning objectives	90	100	100
Main activities	Observation	90	90	100
	Investigation	100	100	100
	Representative	100	100	100
	Conclusion	100	100	100
	Communication	100	100	100
Closing	Conclusion and reflection	90	100	100
Average		97.1	98.6	100

The investigation, representation, conclusion, and communication stages were overall carried out well. This happens because, since the first lesson, the teacher has guided students to carry out investigations in solving problems, present the results obtained in an appropriate presentation form, draw conclusions from the results of the investigation, and communicate them to other groups. The inquiry went well because the teacher and students were active and had good observation, communication, and cooperation. The observation and communication stages in the learning process can facilitate students to think critically to gain knowledge [46] and encourage students' critical thinking disposition [47]. Student activities in collaborative group work also provide them with the opportunity to work together in planning, implementing, negotiating, and evaluating when solving tasks or problems. This investigative activity can make students become independent learners and encourage them to be

responsible for their learning, learning effectiveness, and thinking critically [48] [49] [50]. In this case, students become individuals who feel grateful to God for the blessings and gifts that God gives in everyday life.

In conclusion learning activities, students appear active and responsible in presenting step-by-step the results of their discussions with the group. In this stage of learning activities, students will become responsible individuals and dare to express the results of their discussions with their group. An active student learning atmosphere to develop religious spiritual potential, self-control, personality, intelligence, noble morals, and critical thinking skills. Students learn scientific stories based on the values of the Koran and Hadith. From the various procedures carried out, students can communicate exam results to teachers and classmates [18]. Apart from that, in communicating their learning results, students look happy and enthusiastic in participating in each stage of learning, exploration, and group activities, and show courage and politeness in expressing opinions. This is in line with the conclusion put forward by Ramos who stated that students' active involvement in learning can activate their critical thinking [51]. At the end of the lesson, the teacher and students conclude the lesson and provide reinforcement.

Students' Critical Thinking Skills Through science-based inquiry learning

Apart from increasing scientific literacy achievement, implementing science-based inquiry learning can improve students' critical thinking abilities (Table 5).

Table 5. Descriptive Data on Students' Critical Thinking Skills

Group	Inquiry		Conventional	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Mean	53.8	77.6	56.0	65.0
Standard of Deviation	12.6	9.4	11.9	8.3
Variance	159.9	89.2	143.7	69.4
Maximum	73.0	92.0	72.0	82.0
Minimum	33.0	58.0	33.0	50.0
Range	40.0	34.0	39.0	32.0
Mean of N-gain	51.9 (medium)		18.04 (low)	

The average critical thinking ability of students before taking part in an inquiry is higher than conventional learning. Table 4 shows the average increase in students' critical thinking abilities both through inquiry and conventional learning with an average N-gain of 51.9 and 18.04 respectively. To determine the significance of the increase in critical thinking skills, a statistical test was carried out on the two average increases in students' critical thinking skills with inquiry and conventional learning. Before inferential testing is carried out, a prerequisite test is first carried out, namely normality and homogeneity testing, followed by the t-test.

Table 6. Results of Normality, Homogeneity, and Critical Thinking Skills t-test

Group	Normality Test	Homogeneity Test	T-Test
Inquiry	P = 0.38		
Conventional	P = 0.83	P = 0.44	P = 0.0

The test results are in Table 6. The results of the normality test and homogeneity test show $p > 0.05$ so it can be concluded that the two data are normally distributed and homogeneous. The t-test results show the value of $t > t$ and $p < 0.05$. This means that there is a significant difference between the average increase in students' critical thinking skills with inquiry and conventional learning. This increase was because students seemed to be seriously paying attention to the learning process, observing phenomena containing a science context while writing down the questions they would ask. Additionally, the students appeared enthusiastic and collaborative during the investigation. Students appear confident when asking and explaining to other students. Activities and discussions carried out by students sharpen students' criticality which can ultimately improve their critical thinking skills. The activity of answering and asking questions contributes positively to the development of critical thinking levels. Discussions can also increase students' level of critical thinking and help students improve their ability to connect claims and evidence [52]. Observation results also show that almost all students are actively involved in solving contextual problems through investigative activities. Students criticize the problems they face, develop plans, and carry out problem-solving. This supports the results of Rusilowati & and Khanafiyah's research that open inquiry can improve students' critical thinking abilities [53].

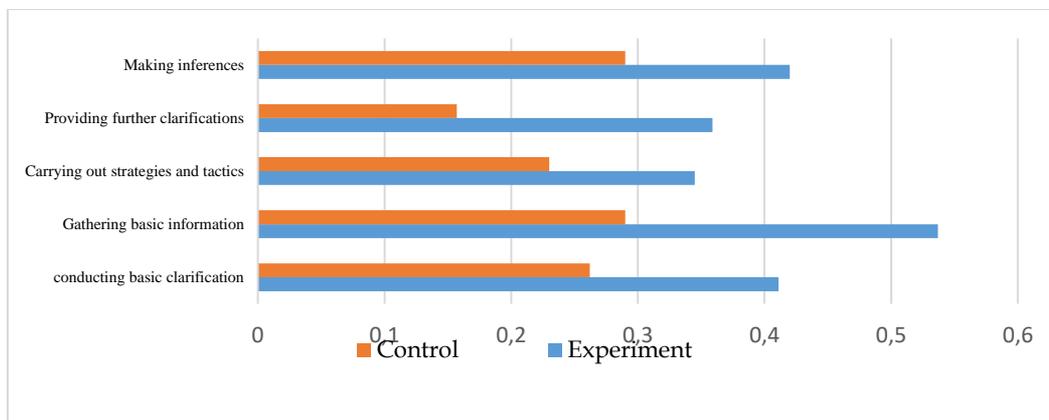


Figure 1. Improving Students' Critical Thinking Skills in Every Aspect

Aspects of critical thinking skills in this research include carrying out basic clarification of problems, gathering basic information, making conclusions, providing further clarification, and implementing strategies and tactics to produce the best conclusions. Student skill attainment in each aspect of critical thinking skills is demonstrated in Figure 1.

Figure 1 shows that the achievement of students' critical thinking skills in each aspect in the experimental class is greater than the achievement in the control class. The most significant difference in improving critical thinking skills is in gathering basic information and providing further clarification. This happens because inquiry learning provides students with the opportunity to make further plans. Before the experiment, such as determining the purpose of the experiment, preparing tools and materials, searching the literature, determining stages, and collecting and analyzing data. This activity requires strategies and techniques to solve problems well. Open-ended laboratory activities facilitate the learning process in creating a more authentic learning environment, why and how we investigate natural phenomena [54]. On the other hand, in the control class, students did not carry out experiments like those in the experimental class. Thus, when learning in the control class, the teacher actively explains and explores, and the students seem to behave passively in class.

Based on the results obtained, implementation of inquiry can improve critical thinking skills (Table 5 and Table 6). Critical thinking is a key component of science education which aims to prepare students to think and be responsible as citizens. Therefore, science learning must be able to facilitate students to build students' critical thinking skills [55].

Integration of Science and Islamic Values

Understanding the integration of Islamic values in science learning is implied in the Koran. Many verses of the Koran emphasize that humans should always think about events in nature to strengthen their religious beliefs. Science teaches humans how to manage nature, carry out various processes, and produce things for life's needs. Meanwhile, religion teaches humans about the value system of devotion to the Creator and the value of kindness towards others. The integration of Islamic values in learning is a process of guidance through educational role models that are oriented towards instilling life values which include religious, cultural, ethical, and aesthetic values towards the formation of students who have religious spiritual intelligence, self-control, and a complete personality. , noble character, as well as skills needed by himself, society, and the country [56].

The following is a flowchart integrating Islamic values and science. The integration of Islamic and scientific values can be carried out scientifically by involving, exploring, explaining, describing, and evaluating. These findings were carried out through scientific research and then integrated into the Islamic values presented in the Al-Qur'an by utilizing Internet learning resources. In this way, students have a wide space for exploration without limits on the learning outcomes obtained not only in terms of knowledge but more in learning to gain integrated skills, abilities, and knowledge.



Figure 2.Integration of Islam and Science with Inquiry Learning

The learning activities in Figure 2 involve students in observing, investigating, representing, concluding, and communicating in the learning process so that students can learn, think, act, and care about their environment. [57]. In the learning process, learning materials are connected to Islamic values based on the Koran and evidence of research results that have been carried out to produce Muslims in schools which enable students to think critically in terms of scientific knowledge and behavior. This is due to the characteristics of Generation Z, namely being more critical in responding to new information. By comparing the information they know, they will be more critical [58].

Instilling Islamic values in students is a teacher of value and moral education not only when teaching them, but whenever and wherever Islamic values must become an integral part of life. An event that shows the greatness of God's creation is the process of plant growth. So far, students have not reflected on the knowledge they have by integrating Islamic values in the holy book Al-Qur'an and hadith. Students can learn and translate the meaning of this verse through various discussions carried out in daily activities. Integration of Islamic values in learning helps students to realize and experience values and place them integrally in their entire lives.

IV. CONCLUSION

Science-based inquiry learning provides everyday context related to science. Syntax in science-based inquiry learning includes observation, investigation, representation, conclusion, and communication. This syntax makes students actively involved in learning so they can develop their knowledge and improve critical thinking skills in the medium category. Critical thinking is a skill that students need to have in the future. Students' habituation in developing their knowledge and critical thinking needs to be carried out continuously at various levels of education. Critical thinking skills encourage students to solve the problems they face. Science context-based inquiry learning has been proven to be effective in improving critical thinking skills which teaches students to carry out basic clarification of problems and gather information. Not only that, students can also make conclusions at the end of learning activities. Students can provide further clarification and execute strategies and tactics to produce the best conclusions.

The integration of science learning and Islamic values aims to facilitate and help students' learning process and an active learning atmosphere to develop religious spiritual potential, self-control, personality, intelligence, noble morals, and critical thinking skills. With the various stages that occur, these students compare and discuss the events that occur in the Qur'an. By integrating Islamic knowledge and science, students have factual, cultural, and learning experiences that correlate with the wonders of the Koran. The findings of this research are to produce Muslims in schools and increase their faith and loyalty to whatever they have learned. Thus, the application of inquiry learning based on a scientific context that is integrated with Islamic values provides an assessment not only of increasing students' knowledge but also of improving critical thinking skills and the formation of students' religious attitudes.

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Conflict of Interest Statement:

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.