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Influence of guided inquiry on science literacy in biodiversity with islamic values

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ABSTRACT

The literacy level of science students in Indonesia is classified as low, especially in integrated with biology and Islamic values. This is influenced by ongoing learning, teacher-centered, limited implementation, learning is active, and a lack of integration of Islamic values in learning science in the Madrasah. Therefore, this research was conducted to now the influence of learning models inquiry guided by the ability of literacy science student class X on the material diversity and biologically integrated Islamic values at MAN 21 Jakarta. Research: This used quasi-quasi-experimental design with a pretest-posttest control group design. Inquiry model guided is an involved learning model students in a way active scientific investigation with teacher guidance through worksheets Students (LKPD), teaching modules, and resources relevant to learning, as well as blending Islamic values to increase student understanding in a way. Instrument study in the form of a PISA-based open-constructed response test. The results of the analysis show there is a significant difference between class experiments and class controls after application of the inquiry-guided learning model. This shows that learning model inquiry-guided is effective in increasing literacy in science students.

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INTRODUCTION

Facing the challenges of contemporary education, students are expected not only to master knowledge but also to be able to think critically and reflectively in understanding science issues and making the right decisions in everyday life (Magdalena, 2021). However, the results of the Programme for International Student Assessment (PISA) from 2000 to 2018 show that Indonesian students' scientific literacy is still relatively low, with a ranking of 70 out of 78

countries and a score of 396 in 2018 (OECD, 2019). This condition reflects the gap between the expectations of modern science education and the implementation of learning that is currently taking place in the world of Indonesian education, where students have not been able to apply scientific knowledge contextually in everyday life (Agista et al., 2023).

Students' scientific literacy is still relatively poor for three reasons, according to Anggraini's research. The first problem is that because they have never studied scientific literacy, students find it difficult to answer questions based on scientific literacy. The second cause is that teachers fail to help students build scientific literacy in teaching and learning activities (KBM). The third problem is that students are not used to answering questions in the form of discourse, tables, graphs, and charts (Sutrisna, 2021).

Previous studies have also found that low student scientific literacy is not only influenced by individual factors, but also by the use of learning models that are not optimal in developing critical thinking skills and conceptual understanding of Deryati (2013) showed that the use of learning models that only focus on cognitive aspects makes it difficult for students to relate scientific concepts to real-life contexts. This is reinforced by research by Odja et al. (2014), which found that students tend to be passive in learning and have difficulty identifying scientific problems contextually. According to (Destrilia et al., 2021) , the implementation of traditional learning models (teacher-centered) is also a factor in low scientific literacy due to the lack of active involvement of students in the learning process.

Based on PISA data, it can be concluded that Indonesia still has a low level of scientific literacy. Many variables influence this, one of which is that students have difficulty in understanding and applying the material in class because they are more accustomed to memorizing the material than understanding it. Students are also not used to solving problems based on scientific literacy. The second point is that students often prefer multiple-choice answers to detailed answers to questions. This is because teachers who give questions for learning evaluation are not used to making analytical questions, so students are not yet able to use their reasoning (Huryah & Sumarwin, 2017).

The guided inquiry learning model can help students to construct knowledge independently with teacher guidance, according to the constructivist principle that emphasizes active and reflective learning (Odja et al., 2014). (Huryah et al.,2017) shows that guided inquiry learning is more effective than conventional learning in improving students' scientific literacy. This model also helps students relate theory to real phenomena, so that learning becomes more contextual and meaningful. Other studies also support the effectiveness of the inquiry model in improving scientific literacy skills. (Arlianty et al., 2015) stated that inquiry learning can encourage students to think critically, solve problems, and interpret scientific data, which are important parts of scientific literacy.

The guided inquiry model is relatively easy to apply in Biology learning, especially in biodiversity material. This is because biodiversity provides many real objects in the environment around students that can be observed, classified, and analyzed according to the principles of inquiry. Teachers can facilitate students in making direct observations of various species, comparing the characteristics of living things, and making scientific interpretations and conclusions. Thus, the guided inquiry model helps students build a deeper and contextual understanding of the concept of biodiversity (Ardiansyah & Azhar, 2022)

Biodiversity material has an important role in biology learning, because of its high relevance to environmental sustainability issues (Kuswanto et al., 2022).This material requires students to understand the reciprocal relationship between living things and their environment, so that they can foster ecological awareness, which is much needed in the era of globalization (Bahri et al., 2016). In addition, biodiversity is very suitable to be applied with a scientific approach and active learning,

because it is rich in real-life contexts and can be linked to local and global issues, such as climate change, habitat loss, and environmental issues (Arifin & Sunarti, 2017).

However, the implementation of biodiversity material learning in many schools is still limited to delivering concepts descriptively and centered on the teacher, so that it does not involve students in activities that require high-level thinking skills (Asyhari, 2017). Students tend to memorize facts without developing analytical and reflective skills that are essential for scientific literacy (Kuswanto et al., 2022). This condition poses a serious challenge in efforts to develop scientific literacy optimally, because learning that only emphasizes aspects of conceptual knowledge does not facilitate students to think critically, relate theory to real-life contexts, and make decisions based on scientific evidence.

Integration of Islamic values in science learning is very important to shape students' character and spirituality holistically (Sulistina et al., 2010) Islamic values such as amanah (trust), khalifah (earth manager), and tadabbur (contemplating Allah's creation) provide a moral and ethical basis for utilizing science, especially in preserving the environment (Prasetiyo, 2021). QS. Al-Qasas: 77 and QS. Al-Kahfi: 66 emphasizes the importance of teacher guidance and the practice of correct knowledge, so that learning that integrates these values can strengthen students' moral and spiritual awareness (Purwaningatmaja, Yesi, Fadlullah, 2024).

The integration of Islamic values in biology learning has also been shown to increase students' learning motivation and ecological awareness. This is reinforced by research by Gormally et al. (2009) that students who follow scientific learning combined with religious values have better critical thinking skills and higher social and ecological responsibility than students who only learn with a conventional approach.

In addition, the results of the study by Nworgu et al. (2013) showed that the integration of Islamic values in science learning in madrasas is still low, even though these values are very important for forming students' moral awareness and social responsibility towards the environment. Therefore, there needs to be a learning model that is not only oriented towards mastering concepts, but is also able to improve scientific literacy comprehensively by linking Islamic values so that students have the ability to think critically, creatively, and have strong moral and spiritual awareness. Scientific literacy includes the ability to use scientific knowledge, identify problems, draw conclusions, and understand the impact of human activities on the environment and life (Sigit, 2013).

The hope of Indonesian education is that students are able to develop complete scientific literacy, including the effective use of scientific knowledge and awareness of the impact of human activities on the environment (National Science Education Standards, 1996). In reality, the low level of scientific literacy in Indonesia is also influenced by conventional learning methods, minimal active involvement of students in the learning process, and the lack of integration of local and religious values in learning (Asyhari, 2017)

With this background, this study aims to determine the influence of the guided inquiry learning model on scientific literacy skills in biodiversity material integrated with Islamic values, so that students are not only able to think scientifically and critically, but also have deep moral and spiritual awareness. This approach is expected to bridge the mastery of science content as well as strengthen the religious character of students in the madrasah environment, as well as provide new contributions to the literature on religion-based science education (Warningsih, 2019).

RESEARCH METHODS

Research Design

This research was conducted at MAN 21 Jakarta, Tambun Rengas, Rorotan Village, Cilincing District, North Jakarta. The research was conducted in class X in the odd semester of the

2024/2025 academic year. This research uses a quantitative approach with a quasi-experimental method. This study involved two different learning models, namely the guided inquiry learning model in the experimental class and the conventional learning model in the control class. The research design used was a pretest-posttest control group design, where before the treatment (pretest) and after the treatment (posttest) were given to both classes (experimental class and control class) to determine the effect of the guided inquiry learning model on students' scientific literacy skills on the concept of biodiversity integrated with Islamic values.

Table 1. Research Design

Group	Pretest	Treatment	Posttest
Experiment	0_1	X_1	O_2
Control	O_3	X_2	O_4

Information:

I = Experimental class
II = Control class
O_1 = Pretest for experimental group
O_2 = Posttest for experimental group
O_3 = Pretest for control group
O_4 = Posttest for control group
X_1 = Guided inquiry model
X_2 = Conventional learning model

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Population and Samples

The population in the study is all over the student class X MAN 21 Jakarta. Samples used in the study are student class X-4, consisting of 35 students as a class experiment with application of learning models inquiry guided, while student class X-3 consists of 36 students as a class control with application of learning models conventional. Selection sample was done with a simple random sampling technique. This technique was chosen because the over student Class X at MAN 21 Jakarta has an equal opportunity for being chosen as a sample research, considering the characteristics of relatively homogeneous students. Homogeneity. This is shown via administrative data, school records, distribution of average values previous semester report card on each class shows the show significant difference. Thus, the use of simple random sampling is considered appropriate to ensure justice opportunity every member population becomes a sample research. Research This implemented during the odd semester in October 2024, coinciding with learning materials diversity life. This is a supporting relatedness study with context, current material studied by students in the period.

Instruments

The instrument main in study in the form of a test description as many as 10 grains questions that have been validated by experts and have undergone validity tests, reliability tests, level of difficulty, and power differentiator. Validity test results show that all over-grain questions own high validity with a mark coefficient validity above 0.50. Reliability instrument obtained with a coefficient of reliability of 0.82, which shows that the instrument This own level of good consistency. Based on the analysis level difficulty, the questions used are in the category moderate and easy, while the Power differentiator question shows good ability to differentiate participants with high and low education. This was given before and after the second treatment (pretest and posttest). Group class experiments and classes control for measuring the improvement ability literacy and science students, in particular, in the context of material diversity life. Indicators measured in the test cover ability in: (1) Explain Phenomenon Scientific, (2) Evaluate and Design

Investigation Scientific, (3) Interpreting Data and Scientific Evidence. In addition to tests, data is also collected through sheet observation structured used for measuring the attitude of scientific participants educated in the context profile student Grace Lil 'Alamin (P2RA), which is characterized by a typical Independent Curriculum. Attitude scientifically observed in P2RA includes: attitude moderation, religion, tolerance, cooperation, critical thinking, curiosity, and openness to difference. Thus, the use of various instruments is expected capable give a comprehensive overview of the influence of learning models, inquiry guided to ability literacy science students, as well as attitudes they have in study.

Procedures

This study was implemented through three stages, namely stage preparation, implementation, and stage end. At the stage of preparation, researchers conduct a study introduction through a review literature and interviews with the teacher, then formulate a research problem. Researchers compile an instrument study in the form of test descriptions, teaching modules, and LKPDs that have been developed based on indicator literacy science and materials diversity, biologically integrated Islamic values. The instrument's study was validated by experts' materials, constructs, and language, followed by a trial instrument to educate and revise based on results validation. Stage implementation started with giving a pretest to both groups (experimental and control) to measure their ability in beginning literacy science. Implementation learning was implemented in three meetings, with a group experiment using an inquiry model guided, while the group control used learning conventional. During learning, done observation attitude scientific participant educates as well as evaluation the student's profile, Grace Lil 'Alamin (P2RA). Stage This ended with posttest administration on both groups to measure improvement ability literacy and science. At the end, the results data study were analyzed in a descriptive and inferential for see the difference in literacy and science ability between group experimental and control groups, as well as an interesting conclusion about the influence of inquiry-guided learning models inquiry guided to ability literacy and science students.

Data Analysis

Data analysis was performed using the N-gain test to see the improvement ability literacy, science, normality, and homogeneity tests. Furthermore, the analysis hypothesis was done using the Mann-Whitney U test with a significance level of 0.05 to compare the ability of literacy science between the class experiments and the class control. Analysis results. This can give empirical proof regarding learning models inquiry guided by the material diversity biological integrated Islamic values to increase literacy and science participant education, at the same time support strengthening of the balance between mastery of science and the formation of character in religious students.

RESULTS

This study covers the implementation of pre-test and post-test in class experiments and controls. Where the pre-test is carried out with the objective to know the knowledge beginning students to material diversity, biological integrated Islamic values, before treatment with existing learning models are prepared and start being applied. Khoirudin et al. (2024), while the post-test is used to see how much greater understanding and ability the concept obtained by participants after applying the learning model mentioned. The following is a results study of the pre-test data and post-test data obtained after the implementation study.

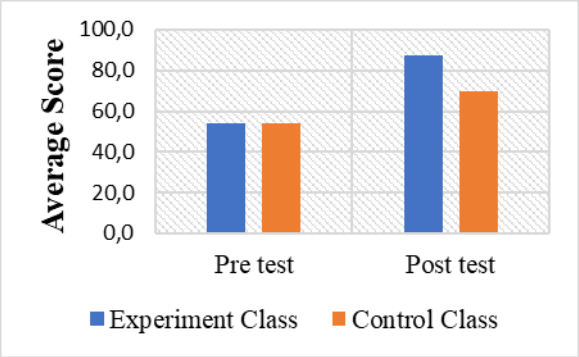

Figure 1. Average results of pre-test and post-test scores for class experiments and class control

Seen from Figure 1. For class experiments and class control on the average post-test results show improvement. Improvement occurred after both of them were given different treatments. The experimental class was given treatment with a guided inquiry learning model, while the control class used a conventional learning model.

Ability Test Data Student Science Literacy Indicator

Test data on the scientific literacy abilities of participants educated in analysis by comparing results from class experiments and class controls. This analysis was done based on the PISA 2018 science framework, which includes aspects of competencies and aspects of knowledge.

Aspect Competence

Aspect competence has three indicators, namely, K1 (Explaining scientific phenomena), K2 (Evaluating and Designing Scientific Investigation), and K3 (Interpreting data and evidence). Ability scientific literacy of participants is educated on aspects of competence based on the average pre-test and post-test scores for class experiments and class control.

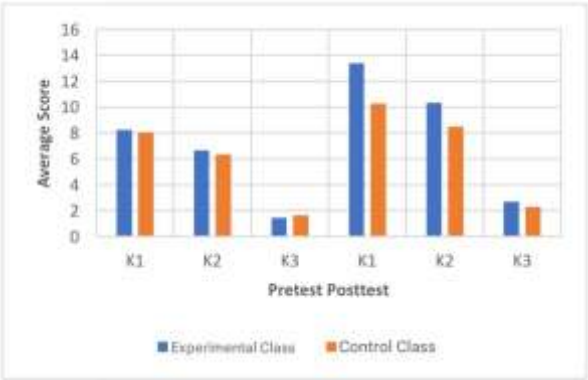

Figure 2. Average results of pre-test and post-test scores aspect competence ability science literacy

Based on Figure 2, the acquisition average score results on aspects of scientific competence literacy show that the experimental class shows the highest improvement score compared to the control class. The highest post-test score is in the aspect competency (K1) in class experiments, and the lowest score is in the aspect competency (K3) in class control. From the results, it is interpreted that the class experiment is more effective in increasing the scientific literacy competence of participants educated compared to the class control. More improvements in class experiment show that the method applied, learning that is inquiry guided, has a positive impact on understanding concepts and scientific skills.

Aspect Knowledge

Aspect knowledge owns three indicators that are content, procedural, and epistemic. Abilities literacy science participants educate on aspects of knowledge based on the average pretest and posttest scores for group experiments and group control.

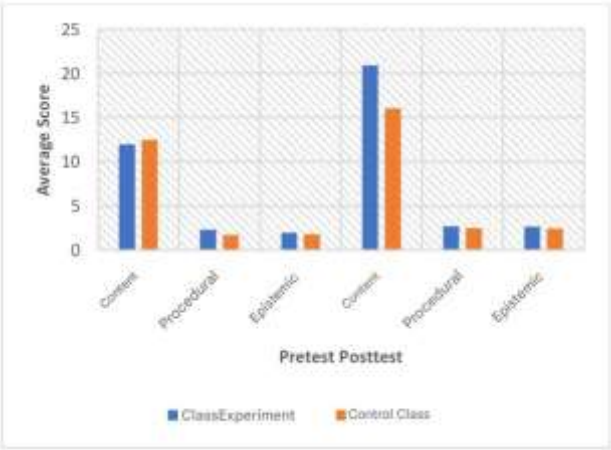

Figure 3. Average results of pre-test and post-test scores: aspect knowledge ability science literacy

Based on Figure 3, acquisition pre-test and post-test results on aspects of knowledge show that the class experiment experience improvement score was higher compared to the class control. The highest scores on both classes are in the aspect of knowledge content, followed by procedural and epistemic. An improvement higher score high in the class experiment shows that the method applied learning that is inquiry guided more effective in increasing the understanding of participants educated on aspects of scientific literacy.

N-Gain Test Result Data

Improvement of the scientific literacy ability of participants to educate, including the use of the N-gain formula. Gain the average value of N-gain from class experiments and class control.

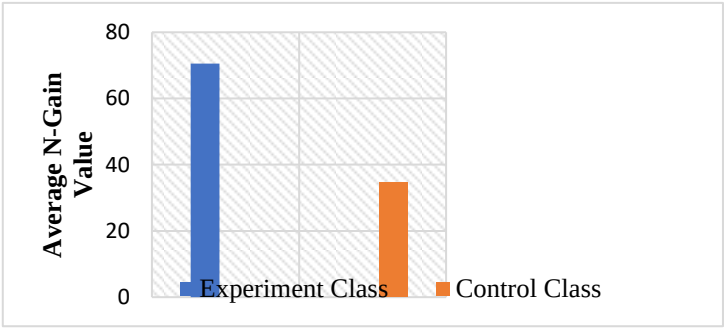

Figure 4. Percentage of N-gain capability classroom science literacy experiments and classes control

Based on Figure 4**,** the average difference in N-gain scores from the class experiment with the class control is 35.83. Class experiment to obtain N-gain score of 70.49 so that improvement class experiments on abilities scientific literacy categorized Enough effective, while in class control to obtain N-gain score of 34.66 so that improvement class control on abilities scientific literacy categorized No effective.

Aspect Competence

N-Gain increases every indicator for the aspect of competence, and scientific literacy is acquired through class experiments and class control.

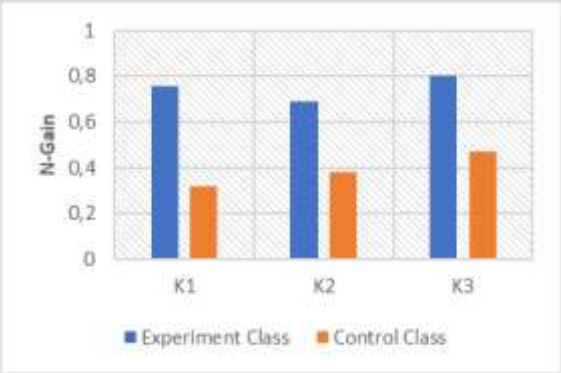

Figure 5. Percentage of N-Gain Aspect Competence Ability Science Literacy

Based on Figure 5, an increase in the K1 indicator (which explains the scientific phenomenon) in the class experiment with class control to obtain different scores, so that it can be categorized as an effective class experiment, whereas class control is not effective. The K2 indicator (Evaluating and designing scientific investigations), a class experiment effective enough, whereas the class control is not effective. K3 Indicator (Interpreting data and scientific evidence) in the group experiment, as much as 0.80, can be categorized as tall or effective, whereas the control class, as much as 0.47, can be categorized as currently or not effective enough. In this case, the average increase in aspect highest competence was found in class experiments that applied guided inquiry learning models.

Aspect Knowledge

Improvement of the scientific literacy ability of participants to educate can be measured with the N-Gain formula. Gain average value of N-Gain from class experiments and class control can be seen in the picture.

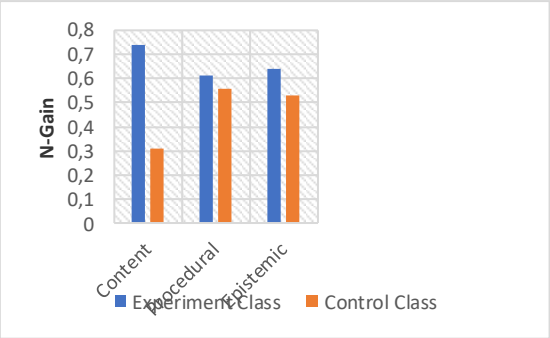

Figure 6. Percentage of N-Gain Aspect Knowledge Ability Science Literacy

Based on Figure 6, the improvement indicator content in the class experiment of 0.74 so which was categorized as high, while the class control by 0.31, which that categorized as medium. On the indicator procedural class experiments and classes control, both can be categorized as medium. And epistemic indicators in the class experiment of 0.64, while the class control by 0.53, both can be categorized currently.

Assessment Results Attitude Profile Student Grace for the Universe

One of the typical characteristics of The Independent Curriculum is the applied project strengthening profile Pancasila students and profiles student blessings Lil ' alamin, abbreviated with

P2RA. Focused on planting moderate religion that can be implemented through programmed activities in the learning process and also habituation in supporting learning models guided inquiry to ability scientific literacy on the material diversity biological integrating Islamic values. Here are the recapitulation results from the evaluation group, attitude, moderation religion.

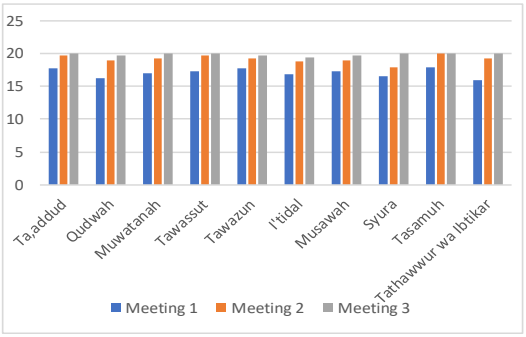

Figure 7. Average assessment score results attitude moderation religious participant educate

This Evaluation nature is authentic because it evaluates the ability of participants to educate in a real situation applied through activity learning in groups with a guided inquiry model, where participants' education shows attitude moderation of religion in the learning process. The technique used is evaluation observation, because evaluation focuses on observation, attitude, participant education, during ongoing learning.

The acquisition mark from Figure 7, the graph above, the value moderation religion counted from results during activity learning in groups showed differences in the first, second, and third meetings. Average results of the first meeting on the aspect evaluation Tahawwur wa the lowest Ibtikar that is with score 16%, while the highest average rating with score 18% on the aspect meeting second get results highest average score namely 20%, and 19.8% in the aspect and the acquisition of results average meeting score third seen that for all aspects and indicators evaluation attitude moderation religion increase namely 20%. With this attitude, moderate religious in ten aspects evaluation becomes an alternative to upgrade scientific literacy abilities.

Based on the prerequisite test results that have been done that the pre-test and post-test data are not normally distributed and not homogeneous. Therefore, testing hypotheses in research uses non-parametric tests with the Mann-Whitney test via SPSS. Testing hypothesis carried out on pre-test and post-test data, class experiments, and class control. Test results pre-test and post-test hypothesis.

Table 2. Pre-test and post-test hypothesis test table

Mann-Whitney test	Pre-test	Post-test
Sig.(2-tailed)	0.890	0.00
Mann-Whitney Test	Sig>0.05	Sig<0.05
Decision	Ho accepted, Ha rejected	Ho rejected, Ha accepted

The calculation of the pre-test hypothesis test was obtained, Sig value >0.05. Then it can be stated that Ho is accepted and Ha is rejected. While the results hypothesis test calculation post-test obtained a Sig value <0.05, then it can be stated that Ho is rejected and Ha is accepted, which means there are significant differences in pre-test and post-test results of class experiments and class control. So, that can be said that there is an influence of learning models guided inquiry on the ability of scientific literacy on the material diversity, biological integrated Islamic values (H. Wahyuni & Muhammad, 2017).

DISCUSSION

This study was implemented at MAN 21 Jakarta, selected because it is an Islamic school that use an Independent Curriculum, including evaluation attitude moderation religion (P2RA), which aims to become an alternative and solution to the results of scientific literacy. Based on observation writer, learning is still educator-centered with a method of practical work, so that the scientific literacy of participants is not yet maximum, especially on the material diversity of biological integrated Islamic values. Research this using a learning model, inquiry-guided in-class experiments and conventional models in class control with three meetings each. The results of the pre-test and post-test calculations show existence significant improvement in class experiment, with an average value post-test taller compared to the class control, so which shows the effectiveness of learning models inquiry guided in increasing scientific literacy.

Pre-test and post-test calculation results were done to find out the results obtained from before the existence treatment until after the existence treatment of the learning process. Average pre-test scores in the class experiment were 54.2, while class control was 53.8. The average score post-test class experiment was 87.1, which means they experienced the highest increase. The average score post-test class control is 69.7. However, the results have not yet become a basis for seeing the differences in the results obtained from the second testing. Therefore, a gain normality test (N-gain) was carried out to determine differences in the results obtained after pre-test and post-test testing, from the class experiment, and also from the class control. After doing the N-gain test calculation shows a visible existence difference average result in the class experiment, bigger compared to with class control. N-gain score on the class experiment is 70.49, while N-gain class score control is 34.66. It can be concluded that pre-test and post-test scores obtained in the class experiment are more significant in their improvement compared to the class Islamic control (Khoirudin et al., 2024).

Aspects looked at in the research this not only how big results are obtained by participants educated in using a learning model inquiry guided, but also measure how far ability scientific literacy of participants is educated, especially on the diversity of biological integrated Islamic values. In the PISA 2018 science framework, there are 3 aspects that are, first competence aspect consists of 3 indicators, among other things, explaining phenomena scientifically, designing and planning scientific studies, and interpreting data and evidence scientifically. Aspect competency on indicators explains the phenomenon scientifically, as seen from pre-test and post-test scores. There is a difference between class control and class experiment, class pre-test scores experiment, namely 8.23, and class control, which is 8.03, while score post-test class experiment, which is 13.37, taller compared to class control, which is 10.28. N-gain scores of pre-tests and post-test for the class experiment, which is 0.76, while the class control is 0.32. In the learning model, inquiry inquiry-guided indicator. This serves phenomenon or problem, participants educate given discourse about the phenomenon, everyday relevant to material diversity, biologically integrated Islamic values. Participants discuss to identify phenomena and problems that occur. This is in accordance with research experienced previously by (Arieska et al., 2021). The solution to the matter is to put text information on the worksheet provided and provide participants with an educational opportunity to submit questions. In addition, teachers as facilitators explain in a general outline of the Topic or the phenomenon being studied.

Furthermore, that is an evaluated and designed scientific investigation. Improvement occurs most frequently in class experiment with implementing learning models' inquiry guided seen from results pre-test and post-test scores, there is a difference. The N-gain calculation also visible that the improvement indicator evaluates and designs an investigation scientific class experiment, namely 0.69 in the category medium and class control, namely 0.38 in the category currently will but far higher in the results calculation class experiment. In the learning model, inquiry-guided, there is a

syntax to design an experiment and conduct experiments conducted for collect data. In the syntax, this participant makes the request to design a scientific investigation for data retrieval. This is in line with a study by (Seratih et al., 2022).

An indicator final that interprets data and scientific evidence. Pre-test scores in the class experiment namely 1.43, and the class control was 1.64. In the score post-test class experiment, happen very high increase which is 2.69, compared to the class control, which is 2.28. This result is also seen in the N-gain score for the class experiment own score is 0.80, categorized as high, whereas the class control's own score is 0.47, categorized. This is making indicator interpreting data and evidence scientific in class experiment own highest increase. In the inquiry-guided learning model, participants collect data from the activity and the experiment that has been carried out (Safitri et al., 2024). In addition, participants can analyse data to give a scientific explanation related to material diversity integrated with Islamic values. Participants educate on activities that must interpret the data that has been got for collected in accordance with the theory that has been studied.

The second aspect of knowledge has 3 indicators among others: content, procedural, and epistemic. In the indicators content biggest improvement occurs in pre-test-post-test scores for the group experiment. On the N-gain score, the increase in the indicator content gets a score of 0.74, so categorized as tall for the group experiment. While for class control, only 0.31, so categorized as low. Learning model inquiry applied to the classroom experiment requires that, in every syntax, content be inserted in accordance with the material studied. The results of the aspect content. This is relevant to natural research previously conducted by (Wastiti & Sulur 2020) that in the learning model inquiry apply participants are educated to find and understand phenomena related to scientific content independently.

Indicator in aspect knowledge that procedural improvement highest pre-test and post-test scores occurred in the class experiment compared to the class control. Improvement results mark indicator aspect knowledge can be reviewed from the N-gain score. Class experiment produces an N-gain score of 0.61, so that categorized. While class control produces an N-gain score of 0.56 is also categorized is will, but N-gain class enhancement experiments are higher. Learning model inquiry guided emphasizes doing activity tests to collect data. Participants must do a series of tests in accordance with a scientific procedure.

Indicator final in the epistemic aspect of knowledge. Epistemic in PISA defines that participants educated will get new knowledge from procedures executed if there is non-conformity. Improving the highest pre-test and post-test scores achieved by the class experiment. This result can also be seen from the N-gain score, which is where the class experiment produces an N-gain score bigger compared to results N-gain class score control. Class score experiment is 0.64, while class control is 0.53, so that categorized as medium. On the indicator, this is in accordance with a study previously conducted by Nurfitria & Hertanti (2020) that the learning model applied in the classroom experiment provides syntax for formulating a hypothesis that requires participants to be educated to discuss and design do experiment to prove the hypothesis and conclusion.

The hypothesis test also showed there is a significant difference between the class experiment and with class control in scientific literacy. In the pre-test, Ho was accepted, which means there is no significant difference between the class experiment and with class control before the given treatment. After the given treatment, the hypothesis testing post-test shows that Ho is rejected, which means there is a significant difference between the class experiment and with class control. In this case, the class experiment was given treatment in the form of a learning model inquiry guided by the material diversity, biologically integrated Islamic values, while for class control, in the form of a conventional learning (Fuadi et al., 2020).

Learning process, each meeting in class, experiments, and class control carried out using a worksheet for participant students (LKPD). The average value of LKPD class experiments at meetings one, two, and three is 80, 85, and 87. The average value of the LKPD class experiment shows that evaluation from meeting first, second, and third existence improvement participant education, already enough used to learning inquiry guided. Research that has been conducted by Herlanti et al. (2019) that the learning process inquiry based on search and discovery through the process of thinking in a way systematic. Knowledge is not several facts results and remember, but results from the process of finding alone, involving all over ability students in a way maximum for look for investigative nature around in a way critical so that they can formulate a full belief in themselves. With a learning model, inquiry-guided participants are trained to hypothesize, formulate a problem, with use evidence obtained. Because of that, the result LKPD work by participants is one of proof that their scientific literacy can be improved along with implementing inquiry-guided learning models.

Also strengthened with results evaluation attitude moderation, religious in the strengthening program profile, student blessings Lil 'Alamin (P2RA) was carried out in a curriculum independent from meeting first, second, and third in class experiment, giving mark alternately at a time, supporting improvement in scientific literacy. This is in line with the principle that moderate religious push attitude open, critical, and reflective in understanding scientific literacy, as confirmed in the study literature on Islamic education and science. With this, the assessment attitude moderation religious in P2RA not only owns dimensions of moral values, but also serves as a strategic factor in strengthening the scientific literacy of participants educated in curriculum independence applied in class experiment. According to (Hilmin, Noviani & Yanuarti, 2023) moderate religious content in the Independent Curriculum is important as a runway for philosophical and sociological, as well as method learning that encourages students to think. In addition, (Aprila et al., 2024) emphasized that moderate religious content in the Independent Curriculum strengthens the profile of Pancasila and Rahmatan students Lil' Alamin through mark tolerance, egalitarian, humanist, and reflective critical thinking becomes a strong moral foundation for contextual and responsible scientific literacy answers.

Research conducted by (Ardiansyah & Azhar, 2022) applied a learning model inquiry structured to ability students' scientific literacy on the concept mushrooms, from all data obtained in the research that was experienced that use of learning models the for-learning biology outline can concluded that give influence Good Enough significant after its application in schools. Likewise with the results study, previously, Arieska et al. (2021) explained that learning model inquiry can increase scientific literacy. Learning model inquiry participant educate become more active. Because participants are educated, given a chance to find Alone draft material, go through the experiment, develop skills, solve problems, and provide a conclusion. Participants educate capable identify questions, get new knowledge, explain scientific concepts, and make decisions based on data and evidence scientific with independently.

CONCLUSION

The results of science literacy class experiments on pre-test and post-test show there is a significant difference in results evaluation of results and the scientific literacy ability of participants with significant education from before and after the implementation of guided inquiry learning models. This can be concluded that the guided inquiry learning model influences the scientific literacy abilities of participants to educate, especially on biological diversity integrated with Islamic values. There is improvement in every aspect of scientific literacy ability. Seen in the increase aspect of competence in an overall class experiment experienced the largest increase in the average N-gain score compared to the class control. Aspect knowledge class experiments also experienced the highest increase compared to the class control. Can conclude that the guided inquiry learning

model leads to improvement in every aspect of science literacy after the given treatment. Implementation evaluation moderation P2RA religion through learning models inquiry guided shows as an alternative solution in increasing scientific literacy abilities. This is seen from the improvement score in a number of aspects. In addition, the assessment moderation participant supports character, moderate religion, and skills critical thinking, and breaks down the problem that is part of scientific literacy. Research result. This recommends the application of learning models, inquiry-guided in learning biology, to increase ability scientific literacy of participants. Research is furthermore recommended to test the effectiveness of this model on the material and level of education, other to expand the positive impact in a more extensive and sustainable.

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