Development of a Biology Learning Module Integrated with Islamic Values to Improve Environmental Care Character

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Abstract

The low character of environmental care has caused various losses to the environment. On the other hand, education and religion have a big role in shaping human character. So, this study aims to develop a feasible biology module that is integrated with Islamic values and effective to improve the environmental care character. The stages of development carried out consisted of eight stages were adapted from the Borg and Gall model. The results showed that the module developed is feasible. Feasibility is proven by the results of the assessment conducted by the validator who obtained a score of 4.3 in the excellent category. The modules have also proven to be effective in improving environmental care character. In a qualitative descriptive analysis, the effectiveness is proved by obtaining the percentage of gain in the treatment class by 58% with the category quite effective and by 33% in the control class with the ineffective category. In a quantitative descriptive analysis, the effectiveness is proved by t-test result with p-value (sig) 0.000 less than 0.05 (Sig < 0.05). It means, there is a significant difference between the gain of environmental care character for the treatment and the control class.

Keywords: Biology, Learning Module, Islamic Values, Environmental Care Character

Abstrak

Rendahnya karakter kepedulian lingkungan telah menyebabkan berbagai kerugian bagi lingkungan. Di sisi lain, pendidikan dan agama memiliki peran besar dalam pembentukan karakter manusia. Oleh karena itu, penelitian ini bertujuan untuk mengembangkan modul biologi yang layak yang terintegrasi dengan nilai-nilai keislaman dan efektif untuk meningkatkan karakter peduli lingkungan. Tahapan pengembangan yang dilakukan terdiri dari delapan tahapan yang diadaptasi dari model Borg and Gall. Hasil penelitian menunjukkan bahwa modul yang dikembangkan layak. Kelayakan dibuktikan dengan hasil asesmen yang dilakukan oleh validator memperoleh skor 4,3 dengan kategori sangat baik. Modul tersebut juga terbukti efektif dalam meningkatkan karakter peduli lingkungan. Dalam analisis deskriptif kualitatif keefektifan dibuktikan dengan diperolehnya persentase keuntungan pada kelas treatment sebesar

58% dengan kategori cukup efektif dan sebesar 33% pada kelas kontrol dengan kategori tidak efektif. Dalam analisis deskriptif kuantitatif keefektifan dibuktikan dengan hasil uji t dengan nilai p value (sig) 0,000 lebih kecil dari 0,05 (Sig <0,05). Artinya, ada perbedaan yang signifikan antara perolehan karakter peduli lingkungan untuk kelas perlakuan dan kelas kontrol.

Kata Kunci: *Biologi, Modul Pembelajaran, Nilai-nilai Keislaman, Karakter Peduli Lingkungan*

A. INTRODUCTION

Environmental problems are still a global threat. Climate change, global warming, and environmental pollution are still problems on earth. Related to the problem, the world of education has a great moral responsibility to be able to contribute to shaping the character of people who have a better environmental concern. One of the efforts that can be done is by integrating Islamic values into school learning related to environmental material, such as biology. This integration is important to do because Islam as a religion has a role in shaping human behavior. Researchers have stated that the integrated relationship between religion and environmental care has positive values. This in other words shows that some religious behavior, beliefs, values, and other measures of religiosity are positively related to environmental awareness and behavior (Nche, 2020, p. 82). According to Ekpenyong (2013, p. 1595), explained that religion has a role to provide moral teachings, good-bad instructions, and rules of behavior that is effective because it is strengthened by soulful beliefs, rituals of worship, and religious symbols. Meanwhile according to Mulyadi (2016, p. 556), explained that religion can be a motivation in encouraging individuals to carry out activity because actions carried out against the background of religious beliefs are considered to have an element of holiness, as well as obedience.

Inculcating Islamic values is a necessity to achieve the goals of education. One of the ways to do this planting is through an integral approach (Salafudin, 2019, p. 40). Therefore, it can be assumed that integrating Islamic values into environmental material in biology subjects will be able to improve the environmental character of the community in this matter through students so that they have positive behavior towards the environment. This is consistent with what White (1967) said, that what a person does to their environment depends on what they think of themselves and the things around them. Human actions towards the environment are also heavily influenced by religion (Sponsel, 2011, p. 131).

Based on the problems that have been described, the researcher raised the theme of this study to develop a biology learning module in environmental change materials integrated with Islamic values to improve the environmental care character of students. The research began by conducting a preliminary study by conducting interviews in one of the schools in Pekalongan City, namely MAN 1 Pekalongan City, Indonesia. The results of interviews conducted with students provided information that some students claimed that they often disposed of their rubbish out of place either at school or at home, which indicates that students still have low environmental awareness. The results of interviews conducted with teachers also inform that the school does not yet have teaching materials on general subject matter that are integrated with the values of Islamic spirituality, especially on environmental topics (Nazili, 2020).

This integration effort is realized in the form of developing learning modules. The module teaching materials are chosen because they are practical and can be used as independent learning materials by students. Through this integration, students are expected to be able to understand the material of environmental change and its impact in terms of scientific knowledge logically and empirically and also in terms of the spirituality of Islamic teachings, so that it is expected to be more optimal to foster and enhance the environmental care character of students to always maintain the natural environment.

From the background that has been described, found three main problems, namely the low character of caring about the environment of some students in MAN 1 Pekalongan City and the absence of biological teaching materials that are integrated with the Islamic values. Based on the identified problems, the problems in this study are formulated as follows: a). How is the feasibility of the biology module developed; b). How the effectiveness of the biology module that was developed to improve the students' environmental care character?

Previous research that has relevance or relevance to this research was conducted by Ibrahim Abu Bakar entitled "Islamic Theological Teachings on Ecology". The results of the study stated that Islam has a teaching concept about human behavior so that they do not do damage to the environment (Ibrahim, 2012, p. 222). The difference with this study, the research conducted by Bakar tried to explore the values of Islamic teachings on ecology, while this study tried to continue the research by integrating Islamic values into learning activities.

Another study was carried out by Abd Kalim entitled, "Fiqh with Ecological Spiritualization (Study of Ecological Fiqh Material)". This study concludes that ecological spiritualization is an expression of having an environmental awareness based on spiritual aspects. (Kalim, 2017, p. 199). The difference with this study, research conducted by Kalim seeks to foster an attitude of ecological spirituality through the learning of Ecological Fiqh, while this research will utilize the values of Islamic ecological spirituality to enhance the students' environmental care character.

Another similar study was conducted by Norshariani under the title, "Integration of Tauhidic Elements for Environmental Education from the Teachers Perspectives". This research shows that the integration of the elements of Tauhid science in environmental education makes students have the knowledge, environmental awareness, and good interest in nature (Rahman, Zabidi, & Halim, 2020, p. 1). The difference with this research is that Norshariani's research is qualitative in nature, which is carried out by interviewing and collecting data related to the research theme. Meanwhile, this research focuses on developing teaching materials that are beneficial to students.

The practical contribution of the results of this research is that the developed modules can be used as references or alternative teaching materials by educators in compiling teaching materials that are integrated with Islamic values in environmental change material. Theoretically, the results of this study contribute to strengthening scientific evidence about the relationship between religion and environmental protection, and that the integration of Islamic values into the biology learning of environmental change material can improve students' environmental care character.

B. DISCUSSIONS

1. Islamic Values and Environment

According to Oyserman, (2015, p. 36) value is a cognitive structure that is internalized in a person that can guide him/her in choosing something based on the basic principles of right and wrong. If these values are based on the teachings of Islam, then we can call these Islamic values. The definition of the environment according to the dictionary is the air, water, and land in or on which people, animals, and plants live (University, 2021).

According to Kalim, Islamic values in the environment are an awareness of environmental concerns that is connected and sourced from the spiritual elements of Islam. So when someone understands awareness of the importance of protecting the environment, it can be interpreted as an activity that has the value of worship to God (Kalim, 2017, p. 197). Islamic values in the environment originate from the study of verses and hadith related to the environment. These postulates were later developed by contemporary fiqh scholars into amaliyah sharia laws in the study of ecological fiqh. So that in this case ecological fiqh is the main tool to explore the Islamic values in environmental care from the Qur'an and Hadith which is manifested in human attitudes and actions towards the natural environment.

Yahya explained that ecological jurisprudence contained several basic principles: 1) protection of the soul (*hifdh al nafs*), which emphasized the need for care and protection for all living things; 2) Aligning the goals of the afterlife, namely how humans and nature can take care of each other, but that can be of worship value; 3) Needs related to production and consumption must be balanced. 4) Ecosystem balance must be maintained; 5) All beings are noble entities (*muhtaram*), therefore humans must also guard all living things on earth; 6) Humans are leaders in processing and managing the universe because humans have a mind and mind that can be useful to do that well (Kalim, 2017, p. 197).

The principles of Islam as an environmentally friendly religion or referred to as "green deen" according to Abdul Matin consist of (1) the principle of monotheism which has a broad meaning that is as a whole of all creation of nature, (2) the environment and nature are signs of God in the universe, (3) humans as servants and representatives of God on earth whose duty is to serve and prosper the contents of the earth, (4) the mandate of making the best use of natural resources and the environment, (5) the principle of justice relating to ethics towards all beings, (6) harmony and balance which means paying attention to the ecological balance and sustainability in utilizing nature (Rodin, 2017, p. 403).

Mangunjaya's research results on environmental themes contained in the Koran include, (1) *Tauhid*, the principle of "Divine Unity" related to the nature of the Creator and the importance of its preservation, (2) *Khalq*, how the Koran handles matters relating to the environment and conservation through verses relating to "Khalq" (creation). 3. *Mizan*, the principle of how the earth remains in balance is a step towards environmental preservation. 4. *Ihsan*, a knowledge that God created humans in a state of "goodness" or "beauty," 5. *Fasad*, knowing the impact of human behavior that has the potential to damage, which leads to environmental destruction. 6. *Khalifa*, knows our human responsibilities as stewards of the environment, as explained in the Qur'an, including our treatment of other living things (Majeri Mangunjaya & Elizabeth McKay, 2012, p. 292).

Bensaid (2018, p. 77) explains that spiritual education about the environment can provide additional means for students to build knowledge, gain meaning from experience,

and seek the truth. For students who have spiritual values, such activities can be an inspiration to test their attitudes towards the environment, distinguish between opinions and beliefs, make a discourse, change their views about their place of residence, responsibilities, and the importance of the environment.

2. Integration of Islamic Values in Environmental Care into the Learning Module

The importance of integration between religious knowledge and science in education has been conveyed by Arifudin (2016, p. 172) that the integrative paradigm of science and religion is time to be developed in this modern age as a prototype for the revival of a new civilization that will shift the current civilization which according to him is on the verge of bankruptcy seen from various physical and non-physical indicators. The new education system in which the curriculum is taught is a complete union between the values of revelation and science. So students are expected to be able to describe the principles of science and religion in the form of ways of thinking and behavior (*akhlaq*) in an integrated and holistic manner in society so that in the future a better social order will be created.

The integration effort can be carried out in the form of developing integrative teaching materials. One of the teaching materials is a learning module. The learning module is one of the teaching materials that have the following advantages: (a) can provide feedback; (b) clear learning objectives; (c) easy to learn; (d) be flexible; (e) cooperation can be established because the competition module can be minimized; (f) remedies can be done because the module provides sufficient opportunities for students to find their weaknesses based on the evaluation given (Lasmiyati & Harta, 2014, p. 164).

The understanding of modules according to Mulyasa is an independent learning package to assist students in achieving learning goals consisting of a series of systematic learning experiences planned. The components of the module are (1) student activity sheet containing the material arrangement to be mastered by students; (2) worksheets used to answer questions or problems to be solved; (3) key worksheets to correct student work independently; (4) question sheets to measure students' understanding of the material; (5) answer key questions to make an independent correction by students (Budiono & Susanto, 2006, p. 80).

3. Environmental Care Character Education

The purpose of education in Laws of the republic Indonesia Number 20 of 2003 Article 3 states that character or character becomes the main focus that must be developed and formed to educate the life of the nation. According to Maskuri, a character is related to values in society and influences individuals to behave (Yunesa, 2019, p. 278). Character is a person's behavior based on the values prevailing in society that distinguish one person from another person. While character education is a process of changing the nature, mentality, character, and character of a person or group of people to become mature (Hendriana & Jacobus, 2016, p. 26).

One type of human character is the character of caring for the environment. The character of caring for the environment is one of the eighteen characters set by the center of the Ministry of National Education curriculum, where the understanding of the character of caring for the environment is according to Kemendiknas (2010, p. 41) are attitudes and actions that have indicators that always try to prevent damage to the surrounding natural environment, and develop efforts to repair the natural damage that occurs. So, the character of caring for the environment is a character associated with human attitudes and actions to the natural environment, where the understanding of the

natural environment according to article 1 of law no. 32 of 2009, is the unity of space with all objects, power, conditions, and living things, including humans and their behavior, which affect nature itself, the continuity of life, and the welfare of humans and other living things.

The low character of environmental care of community causes many cases of environmental destruction or pollution, which in turn will harm humans themselves. According to law No. 32 of 2009, environmental pollution is the entry or inclusion of something in the environment so that it exceeds the established quality standards.

Efforts to increase environmental awareness through the field of education are important to do, as stated by Uno & Mohamad (2011, p. 136) that, planting, understanding, and awareness of the importance of preserving environmental quality are very good when applied through education. According to Purwanti (2017, p. 19), The implementation of environmental care character education in learning can be done by integrating it in each subject through appropriate competency standards. Biology subjects have appropriate basic competencies for integrating the character of caring for the environment, namely the basic competence 3.11., Analyzing data on environmental changes, their causes, and impacts on life and basic competencies 4.11., Formulating ideas for solving environmental change problems that occur in the surrounding environment (Mendikbud, 2018, p. 51).

4. Development Model

The development model used was adapted from the Borg and Gall approach. According to Borg & Gall (1983, p.775), Research and Development (R&D) approach in education consists of ten stages, however, according to (Emzir, 2013, p. 271) Borg & Gall states that scale and stages can be limited to a smaller scale and simpler stages. The stages of this can be explained in Figure 1.
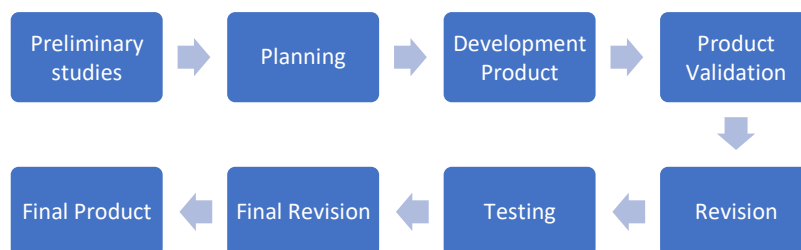

Figure 1. Development Procedure

The trial was conducted using a Pretest Posttest Control Group Design research design on two classes, namely a control class and a treatment class. The control class uses conventional modules while the treatment class uses the developed module. The trial subjects were randomly determined, for each class consists of 42 students of the school of MAN 1 Pekalongan City, Indonesia.

The score data from the module validation results by the validator was analyzed descriptively by calculating the average score of the acquisition. The mean score was changed to a category score on 5 scales. Reference for changing the score to a scale of five according to Syaifudin Azwar (2007, p. 163) can be seen in table 1:

Table 1.
Convert Scores to Five Scale Values

Grade	Interval Score	Category
A	$M + 1,5\,S < X$	Excelent
B	$M + 0,5\,S < X \leq M + 1,5\,S$	Good
C	$M - 0,5\,S < X \leq M + 0,5\,S$	Enough
D	$M - 1,5\,S < X \leq M - 0,5\,S$	Less
E	$X \leq M - 1,5\,S$	Very Less

Information:

M = Average

$M = \frac{1}{2}$ (ideal maximum score + ideal minimum score)

S = Standard deviation

$S = \frac{1}{6}$ (ideal maximum score – ideal minimum score)

X = actual score

In this research, it is determined that the product is said to be feasible or good if the feasibility value of the product by a minimum validator „B" with Good categories.

Analysis of character data about the environment using normalized data gain. A normalized gain calculation can be searched using the formula of Hake (1999) (Pranjono, 2015, p. 310) :

$$gain = \frac{T2 - T1}{Is - T1} \quad (2)$$

(Hake, 1998: 65)

Information: T1 = pretest score
T2 = posttest score
Is = maximum score pretest or postest

The average normalized gain obtained is then made into a hundredth scale (%). The normalized gain effectiveness category according to Hake is presented in Table 2.

Table 2.
Categorization Estimation of Normalized Gain Effectiveness

Percentage (%)	Interpretation
< 40	Ineffective
40-55	less effective
56-75	Effective enough
>76	Effective

Quantitative analysis uses to test the effectiveness of the module by testing the differences in the gain of the control and experimental classes using the t-test. The use of t-test statistical techniques requires prerequisites that must be met, including data normality and homogeneity.

Acceptance or rejection of H_0 can be seen through probability (significance), namely if probability> 0.05 then H_0 is accepted, and vice versa if probability (significance) ≤ 0.05 then H_0 is rejected.

The null hypothesis (H_0) and the alternative hypothesis (Ha) in this study are:

H_0: There is no significant difference in increasing the character of environmental care between control and treatment classes

Ha: There is a significant difference in increasing the character of caring for the environment between control and treatment classes.

5. Development Result

The module design that was created was validated by a validator consisting of expert lecturers and biology teachers. The product evaluation score by the validator is then converted using a scale of 5 presented in table 1 according to Azwar (2007: 163). Categorization scores are presented in Table 3.

Table 3
Conversion of Product Rating Score by Validator

Grade	Interval Score	Category
A	$4,05 < X$	Excellent
B	$3,35 < X \leq 4,05$	Good
C	$2,65 < X \leq 3,35$	Enough
D	$1,95 < X \leq 2,65$	Less
E	$X \leq 1,95$	Very less

The number of module feasibility assessments by the validator is then converted based on Table 1. The results of the assessment by the validator are presented in Table 4.

Table 4.
Product Evaluation by Validator

Rated Product	Biology Expert	Islamic Integration Expert	Learning Media Expert	Language Expert	Biology Teacher	Average	Category
Learning Module Developed	3,7	4,4	4,2	4,5	4,8	4,3	Very Good

Validation of research instruments in the form of lesson plans and environmental care questionnaires are presented in Table 5.

Table 5.
Research Instrument Rating

No.	Instrument	Score	Category
1.	Lesson plan	4,2	Very Good
2.	Environmental Care Questionnaire	4,8	Very Good
	Average	4,5	Very Good

Data on the average percentage of normalized gain values for environmental care characters of the control class and treatment class obtained at the trial stage are presented in Table 6.

Table 6
The average percentage of N-gain Environmental Care Character
Control Class and Treatment Class

No.	Class	N-Gain (%)
1.	Control	33
2.	Treatment	58

Data on the results of the questionnaire responses of students to the module can be seen in Table 7.

Table 7
Results of Students Respons Questionnaire

Product	Score
Module	3,83

The following is a brief description of the Islamic values integrated into the module, the value of environmental monotheism, the value of environmental balance (*Tawazun*), the value of environmental perfection (*Kamal*), the value of environmental preservation (*Kirasa*), the value of revenge (*Jaza*), the value of environmental glory (*Muhtaram*), and the Value of Human Leadership (*Khalifa*).

6. Result Analysis

The assessment score given by the validator to the module is then converted using a scale of 5 according to Azwar (2008, p. 123) presented in Table 1 in the category of very good, good, sufficient, less, and not good. A maximum score of 5 and a minimum score of 1 are given by the validator for each assessment item. The results of the assessment given by the validator get results with a mean score of 4.3 with the value of the letter A and have a very good category so that it can be concluded that the initial product of the validated learning module is feasible to be tested provided the revisions are made first. The assessment results are presented in Figure 2.
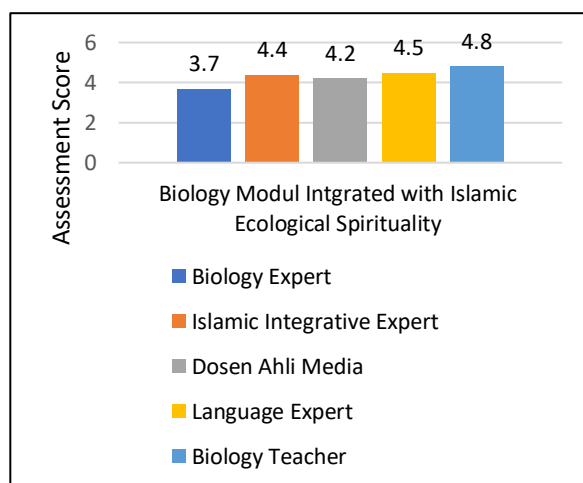

Figure 2. Bar Chart of Module Evaluation by Validator

Average validator ratings for products do not have a large difference. The level of agreement is obtained from calculating the difference in the score of the validator's assessment. The amount of the difference in valuation serves as a benchmark for the level of agreement on the appropriateness provided by the validator. The difference in appraisal ≥ 1 can be said to be a low level of feasibility agreement and a difference in valuation ≤ 1 can be said to be a high level of feasibility agreement. The difference in valuation by the validator is 0.2, so it can be said that the level of "high" feasibility agreement is provided by the validator of the module.

The research instruments validated and used in this study included the lesson plan and the environmental care character assessment questionnaire. Validation was carried out by learning expert lecturers with the results that is, the lesson plan obtain a 4.2 score in the excellent category and the environmental care character questionnaire obtain a score of 4.8 in the excellent category. The results of the validator's assessment of the

instrument form the basis for the use of the research instrument by prior revision under the validator's suggestions and input.

The results of completing the environmental care character questionnaire by students are presented in Figure 3.
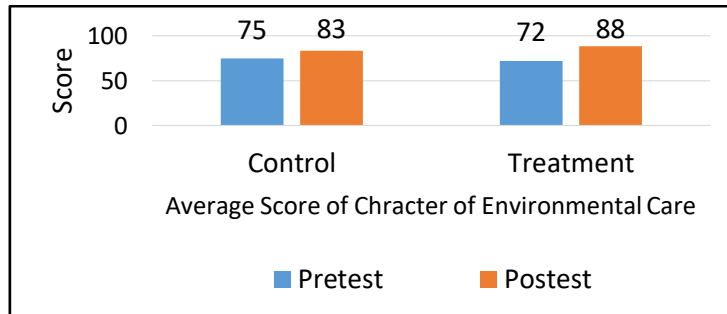

Figure 3. Average Bar Score Diagram of Character Before and After Learning

Based on the analysis of Figure 3, the average acquisition score before learning does not have a large difference of 75 in the control class, and 72 in the treatment class. The acquisition of character scores after the learning process in the control class was 83 while the treatment class was greater, 88.

The results of the environmental care character questionnaire before and after learning are then calculated as the gain score. The score gain is an indicator of the students' increasing environmental concern. Hake (2007, p. 6) explains the interpretation category of normalized gain percentage into 4 categories, namely ineffective, less effective, quite effective, and effective. Categorization can be seen in table 2. Achievement of the control class score by 33% and included in the ineffective category, while the treatment class by 58% and included in the category is quite effective. The achievement of the percentage gain score of the control and treatment class can be seen in Figure 4.
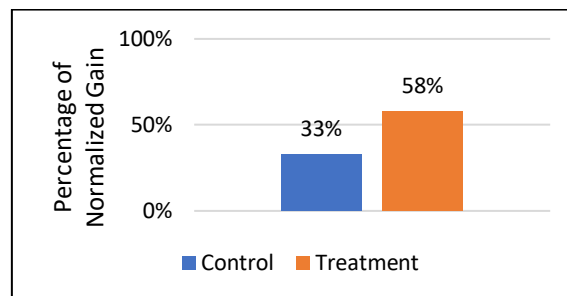

Figure 4. Bar chart for the average Gain of Environmental Care Character

The quantitative analysis was carried out by conducting the prerequisite test, namely the normality and homogeneity test of the data. The normality test is carried out to determine whether the data is normally distributed or not. The data used is the character gain of environmental care. The normality test was performed using the Kolmogorov-Smirnov test. The following results of the normality test are presented in Table 8.

Table 8.
Results of the Gain Normality Test for Environmental Care Characters

Class	Probability	(p) Sig.	Information
Control	0,308	$p > 0,05$	Normal
Treatment	0,909	$p > 0,05$	Normal

Based on Table 8, the significance value obtained from the results of the analysis is greater than 0.05 (Sig> 0.05) so that it can be concluded that the data gain on environmental care character scores of students in the experimental class and control class are normally distributed.

A homogeneity test is carried out to determine whether the data to be tested is homogeneous or not. The homogeneity test was carried out using the Levene test. The following results of the homogeneity test are presented in Table 9.

Table 9.
Result of Homogeneity Test for the Gain Score of Environmental Care

Data	Probability	(p) Sig.	Information
Environmental Care Character	0,118	p > 0,05	Homogen

Based on Table 9, the significance value obtained from the results of the analysis is greater than 0.05 (Sig> 0.05) so it can be concluded that the data gain on the character score of environmental care is homogeneous or not significantly different.

The t-test was conducted to test the differences in the gain of environmental care characters between the control class and the treatment class. The results of the t-test for the character of environmental care can be seen in Table 10.

Table 10.
Result of the Hypothesis Test for Gain Score of Environmental Care Character

Data	(p) Sig
Gain score of environmental care character	0,000

Based on Table 10, the Sig. (0.000) is smaller than 0.05 (Sig <0.05), so Ho is rejected, so it can be concluded that there is a significant difference between the gain of environmental care character for treatment class and control class students.

Based on the descriptive and quantitative analysis that has been done, both analyzes show that the use of developed modules is effective in increasing the environmental care character of students. The data on the character of environmental care that was analyzed came from a questionnaire that represented the feelings of students before and after participating in the learning process using a developed module. The statements and questions in the questionnaire are prepared based on indicators of environmental care characteristics that reflect attitudes and actions to prevent environmental damage and repair environmental damage that has occurred. (Kemendiknas, 2010, p. 41).

The acquisition of a high score in the treatment class proves that through the integration of Islamic values into biology subjects on environmental change material that presents the postulates and verses relating to environmental change and the various impacts that can result, can stimulate motivation and feelings students to appreciate and care more about the environment. This is in line with what has been said by Ekpenyong (2013, p. 1595) regarding the role of religion, which according to him the role of religion on human behavior is to provide moral teachings, instructions, and rules for behaving effectively because it is strengthened by whole-hearted beliefs, rituals of worship, and religious symbols. Meanwhile, according to Mulyadi (2016, p. 556), Religion has the

influence to motivate in encouraging individuals to carry out an activity, because actions carried out against the background of religious beliefs are considered to have an element of holiness, as well as obedience. This is in line with what was conveyed by Sa'diyah (2016, p. 210), that the function of religion among them is as education, savior, social control, and transformation.

The results of the questionnaire responses of students to the biology module integrated the values of Islamic ecological spirituality in the subject of environmental change after learning gained a score of 3.83. Based on table 3 included in either category. Seeing the results of questionnaire responses that have a good category to the modules developed, shows that students have a positive response to the modules developed. Based on this acquisition, it can be concluded descriptively that the biology module integrated with the values of Islamic ecological spirituality developed is practical.

Positive responses of students to the modules developed indicate students have good motivation in using the integrated biology module the values of Islamic spirituality that are developed. Good motivation will have a positive relationship with student learning outcomes. According to Sardiman (2014) Students who have high motivation to learn will be better at accepting lessons and attitudes generated by students will be more positive in learning. This positive attitude and motivation will certainly have an impact on good learning outcomes as the results of Dimyati and Mudjiono's research (Budiariawan, 2019, p. 107) which states that someone who has high motivation in learning, the learning outcomes that will be obtained by that person will be better.

This is evidenced by the results of students' tests on environmental change material that there are differences between treatment classes that use developed modules and control classes that use conventional modules. In the treatment, the class obtains an average score of 79 while the control class of 74.

C. CONCLUSION

Based on the results of the research and discussion that has been carried out, the following conclusions are obtained. First, the biology module developed is feasible to use. Feasibility is proven by an assessment conducted by a validator consisting of expert lecturers and biology teachers who get an average score of 4.3 in the excellent category. The biology learning module developed effectively to improve the environmental care character of students. In a qualitative descriptive analysis, the effectiveness is proved by obtaining the percentage of gain in the treatment class by 58% with the category quite effective and by 33% in the control class with the ineffective category. In a quantitative descriptive analysis, the effectiveness is proved by t-test result with p-value (sig) 0.000 less than 0.05 (Sig <0.05). It means, there is a significant difference between the gain of environmental care character for the treatment and the control class.

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