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Integration of Environment and Ethics Education in Learning on Islamic Education Study Program Biology

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Abstract: This research is a development that produces learning model integration oriented environmental education and ethics of Islam. The effectiveness of the model was analyzed by quantitative methods that focus on environmental knowledge and attitudes of students. Development of model refers to a Plomp Model with stage preliminary investigation, design, realization/construction and the revision and implementation of evaluation. The trial model of the three courses with a sample of 30 students per class. In Biology education study program. The results showed that the models were built fulfill the criteria of validity and practicality. The model was considered effective by implement testing, increase the frequency of environmental knowledge and attitudes. Implementation test showed very good results in four phases and categories both in one phase. Gain N-test results showed that an increase in knowledge of the environment with the criteria being. The test results show that the frequency of most students to be very high on the environment and the ethics of Islam.

Key words: Ethics, environmnet, learning, ethics, Islam, attitude

INTRODUCTION

Environmental damage caused by natural factors (natural disasters) and as a result of human actions, either directly or indirectly. Behavior hostile environment with nature is slowly but surely will damage life-sustaining environmental systems such as floods, pollution, landslides and others. Environmental problems caused by human behavior is still found in everyday life as evidence not maximal environmental education in the community.

Learning environment aimed at changing attitudes and behavior that is rational and responsible. Rationally, learning aimed at solving environmental problems faced in everyday life, actively seeking the roots of environmental problems and proceed with troubleshooting steps. This is in line with the constructivist learning theory with emphasis on the involvement of learners in constructing knowledge and skills (Schunk, 2012).

Hamzah (2008) explains that learning at the college, environmental education integrative ineffective due to lack of knowledge and understanding of educators in integrating other subjects in the material, so, Environmental Education (EE) untouched. In addition, the unavailability of teaching materials is the environmental Education reference book learning and educators have no concern and knowledge to learn EE. Therefore, we need teaching materials as a learning resource that can be EE appropriate learning model for the provision of learning experiences learners to educational learning environment more effective and meaningful.

Environmental education is the education activities in the environmental field that are organized by all levels of education. These activities are carried out in a structured and tiered with an integrated curriculum approach and as well as monolithic curriculum (Prihantoro, 2014).

Furthermore, as the ethical norms adopted in a community can be a role model. Ethical values in question is a moral and character contained in the teachings of Islam derived from the Quran, the Hadist and the values that live in a Muslim society that does not conflict with the basic source of Islamic teachings. Gulcan (2015) outlines that ethics has an important place in all areas of life. Ethics has also become important in education because education is a fundamental process of human life. Therefore, ethics is very important subject in education.

Based on the above, the learning models that integrate environmental education and ethics of Islam in learning needs to be built. This will be a learning model environmentally minded Islamic ethics in higher education, particularly the Islamic religious universities.

This research method is the development of research oriented learning model that integrates environmental education and ethics of Islam. The pattern of development

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Table 1: N-gain category

Values	Categories
G>0.7	High
0.3<G≤0.7	Moderate
G≤0.3	Low

Meltzer (2002)

of research based on a learning model (Plomp and Nieveen, 2007) with modifications. The phases of development include phase of preliminary investigation (initial investigation) phase design (design) phases of realization/construction (realization/construction phase of test, evaluation and revision (testing, evaluation and revision) and implementation phase (implementation).

At the design stage, the validation process involves three validators are two validator indecent content and instructional media. Validator role is to validate the model of learning which consists of syntax, reaction principle and social systems. In the implementation phase implement test involves three observers who observe adherence to the classroom atmosphere and the five stages of learning. The analysis is done by analyzing the student's knowledge gain with the formula N1and Table 1. Average student attitude analysis using frequency analysis.

$$\text{N-gain} = \frac{S_{post} - S_{pre}}{S_{maks} - S_{pre}} \quad (1)$$

Where:

N-gain = Effectiveness of methods
S_{post} = Post-test score
S_{pre} = Pre-test score
S_{maks} = High score

Then, for N-gain categorization according to Meltzer (2002) described in Table 1.

MATERIALS AND METHODS

Stage development model: Preliminary investigation phase development of the integration of environmental education learning model to the ethics of Islam begins with needs analysis activities. Search syllabus and SAP which requires the integration of environmental education and ethics of Islam generates by conducting preliminary studies which examine the syllabus and curriculum documents in the form of units of lecture events in the learn to biology education students in integrated environmental education. On the syllabus document research also identified basic competencies and indicators through all the courses of study ingredients and materials for environmental education. The results of the analysis courses and materials are presented in Table 2.

Table 2: Subjects and materials that are integrated with the environmental Education and ethics Islam

Courses	Subjects
General Biology	Biodiversity, Environmental Principles, Ecosystems, Populations and Communities
Animal Ecology	Animal and Environmental Interactions, the Limiting Factor to Environmental Factors
Ecology of Plants	Ecosystems, Population, Environmental Factors and Succession

Table 3: Output in the design of the model

Learning models	The design of the device	Instrument validity
Sintaks, social system social, reaction principle support systems	Learning design, books module of student, the student worksheet	Validation sheet guide assessment models, validation format lesson plans, teaching materials validation format validation worksheet format, format validation tests of cognition and affective learning outcomes

Observations on the teaching and learning process showed low activity of students at each step of the learning activities or student has not actively participate.

Most students fear express their opinions when asked a question they do not try to answer and had trouble finding and find the answer. In the discussion, some students have not shown activity maximum learning, student interaction has not appeared as well as inter group interaction. Moreover, only few students seem less excited and less attention in receiving the lecture material.

Design phase: Activities performed on this stage include 3 activities, namely design study model instructional design the design of instruments as a tool to be used to collect the data needed in the development process the output of the three phases. The three phases can be seen in Table 3.

Realization/construction phase: At this stage made on learning activities that involve educators and learners. Learning phase consists of 5 phases (Fig. 1).

Additionally research module and students books and student worksheets. The module handles the students serve as guides and learning resources for learners in follow-face lectures, independent tasks and structured tasks. Worksheets are arranged as many as four of the two sub-themes based on the component syntax. This instrument is designed in the form of research to be done by individuals and groups in solving environmental problems. The identify of this integration model is solving environmental issues in a way inquiry.

Test, evaluation and revision phase: The development of instruments that have been realized and

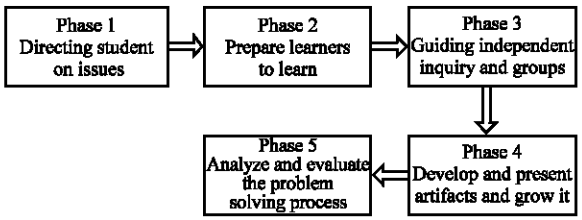

Fig. 1: Phase learning

Table 4: Results of validity test

Instruments	Averages	Informations
Model book	3.8	Valid
Learning design	3.7	Valid
Student worksheet	3.8	Valid

Table 5: Summary of observations learning management

Phases	Percentage of agreement (%)	Observation score	Informations
1	98	3.64	Very well
2	95	3.60	Very well
3	97	3.50	Very well
4	80	2.75	Well
5	88	3.55	Very well
Class condition	93	3.25	Well
Average	92	3.38	Well

include instrument validity, practicality and effectiveness. The development results are described in Table 4.

Implementation phase: The ability of educators (lecturers) are crucial in managing effective teaching and effective learning outcomes resulting from the efficient management of learning. Observations on the management of learning activities conducted by the observer as many as five people during the learning process takes place. Based on observations of learning management obtained results in Table 5.

Test effectiveness model: Testing the effectiveness of the model is done by using the data of learning outcomes and student attitude. Learning outcomes as indicators of knowledge obtained by the method pre- and post-test.

Based on Table 6, a picture that the maximum value of pretest increased from 88.00 into 91.00 value. Similarly, the lowest score of the value of 42.00 into 56.00. The average score increased from 72.36-80.63. Standard deviation between the data relative to the same so that the diversity judged the same. Test N-gain which is achievement of learning outcome shows that most college students have learning outcome being can be seen in the Table 7.

Based on descriptive analysis and N-gain can be revealed that the learning model is built to produce increased students knowledge of environment. Nevertheless, there are still 32 people 35.56% students who have low achievement categories.

Table 6: Knowledge indicators with pre- and post-test method

Commentary	Score pre-test	Score post-test
Sample size	90.00	90.00
High score	88.00	91.00
Low score	42.00	56.00
Range score	46.00	35.00
Average score	72.36	80.63
Median	74.00	81.00
Modus	72.00	91.00
Varians	104.93	82.72
Standard deviation	10.24	9.09

Table 7: Test N-gain category

N-gain categories	Frequency	Percentage
Low	32	35.56
Moderate	46	51.11
High	12	13.33
Total	90	100.00

Table 8: Frequency distribution environmental attitudes students

Scores	Frequency	Percentage	Categories
65<X≤80	32	35.56	Very good
45<X≤65	58	64.44	Good
35<X≤45	0	0.00	Less good
20<X≤35	0	0.00	Not very good
Total	90	100.00	-

The test result shows that the attitude towards the environment an average score of attitude towards the environment amounted to 64.03 of the ideal score of 80, the highest score obtained 78.00 and the lowest score in the acquired 56.00. If the score of attitude towards the environment are grouped into four categories, the obtained frequency distribution and percentage score as shown in Table 8.

According to the Table 8, indicated that 58 students 64.44% with the attitude of a good environment. This indicates that after a lecture by integarasi environmental education and ethics of Islam, the student has a good attitude.

RESULTS AND DISCUSSION

The learning model is built by integrating environmental education and ethics of Islam includes syntax components, social systems, reaction principle and support systems. Environmental education is included in the learning media is the issue-the issue of the local environment (floods, landslides and droughts) as well as the issue of global issues (sea level rise, biodiversity and global warming). The material is an effort to increase environmental knowledge of students.

Islamic ethical principles that integrated in learning materials with the aim of growing environmental attitude with awareness of the role of man as guard nature. Islam regards the concept of the environment as an integral part of a Muslim's faith towards Allah. Human behavior towards the natural world is a reflection of the morals and

faith, so that, the preservation of the environment is an obligation which is equivalent to worship other social obligations.

Knowledge and attitude development environment based on the theory of planned behavior which outlines the background of three factors, namely personal, social and information. The personal factor is a person's general attitude towards something, personality traits (personality traits) the value of life (values) emotions and intellect has social factors includeage, sex (gender) ethnicity, education, income and religion. Factor information is experience, knowledge and exposure to the media (Ajzen, 2005).

Based on the above it can be concluded that, through learning with the integration of environmental education and ethics of Islam the student's behavior to environmental conservation can be improved. Once students understand environmental problems and able to provide a solution then, the student can become agents of change in the use environment.

CONCLUSION

Model integration of environmental education and ethics of Islam in learning assessed valid. This is based on the validity of the test instrument models books, instructional design and student worksheets. The test results implement of learning model showed excellent results in four phases and categories both in the phase results.

The effectiveness of the model assessed both by the increase in student knowledge and attitudes of students. Gain N-test results showed that an increase in knowledge of the environment with the criteria being. The test results show, that the frequency of most students to be very high on the environment and the ethics of Islam.

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