

New Developments Integrating Biology And Islam In Learning Process

Zaenab Canu

IAIN Ternate, Ternate City, Indonesia

Zainabcanu@iain-ternate.ac.id

Puji Dwi Rahayu

IAIN Ternate, Ternate City, Indonesia

pdrwiwik@iain-ternate.ac.id

Dina Rahmawati

IAIN Ternate, Ternate City, Indonesia

diinaaraahmaawaatii@iain-ternate.ac.id

Abstract

This articles to obtain information about the design, steps, and implementation of the teacher in integrated subjects clumps of Biology and Islam. The research method used is qualitative and data collection techniques from literature, journals, scientific articles, and reviews. The results of this research are in the form of design, steps and implementation carried out by the Biology subject teacher in the Islamic-based learning process.

Keywords: Integration, Islamic Education, Biology.

A. INTRODUCTION

The development of the 21st century is marked by the development of Science and Technology. The more technology and science develop, the more humans are dependent on developing science and technology. Human life is made easier with technological sophistication. Human life is increasingly consumptive with the digital era

where the ease of getting a product is the fulfillment of human desire and wholeness (Ilmiyati et al, 2020). Because they are so dependent on developing technology, it is difficult for humans to live without using the products of science and technology.

The daily necessities of modern human life, from eating, drinking, sleeping, shelter, place of work, means of transportation, to means of communication, means of entertainment, health and all aspects of human life cannot be separated from using the products of science and technology (Zain & Vebrianto 2017). The times have had a positive impact on the fulfillment of human needs, but also have a negative impact on humans if they cannot be controlled. For example, the impact of the sophistication of social media has resulted in the occurrence of many teenagers' promiscuity, porn video content is increasing and uncontrollable, besides that the level of human consumption is increasing with the ease of shopping using technology.

Therefore, it is necessary to control or control excessive thirst in the use of technological media. This can be controlled by spiritual enhancement in oneself. Islam teaches humans to be able to control themselves and control their passions, such as the use of unlimited technology. Education plays an important role in controlling negative impacts and increasing the positive impact of the times.

There are two main bases in incorporating religious values into education. First, the 1945 Constitution (Amendment version), Article 31, paragraph 3 (2002: 24) states, "The government endeavors and implements a national education system, which increases faith and piety and noble morals in order to educate the nation's life, which is regulated by law. "Second, article 31, paragraph 5 which states, The government advances science and technology by upholding religious values and national unity for the advancement of civilization and the welfare of mankind. "The two laws indicate the integration of religious values in learning. The mandate of the constitution proves that the purpose of education in Indonesia is not only to develop potential and to educate but also to form human beings with religious characteristics (Muspiroh, 2013).

The fact that is evident in the world of education in schools today is that students in SD, SMP, and SMA/SMK seem to be emphasized only on improvisation intellectual intelligence or in other words on developing the cognitive domain. It is true that, in every public school there is a curriculum where one of the subjects taught is Islamic Religious Education (PAI) which is expected to be able to stimulate students to awareness of spiritual intelligence (spiritual intelligence), unfortunately the PAI subject is less effective in improving the morals of the nation's generation especially the Islamic generation. Learning must include the spiritual content of religion, and teachers should be able to carry out integrated learning with religion.

One of the subjects that can be integrated with Islamic religious content is Biology, which studies various types of life and should integrate with religion so that

students can better interpret the development of science and technology in a more positive direction. The approach of integrating Islam with science and technology places various scientific disciplines (Islamic-Studies, Natural Studies, Social Studies and Humanities) which are interrelated so that they become a complete building of knowledge. Schools with an Islamic background are formal Islamic educational institutions that are appropriate for implementing an integrated learning process.

This integrated learning process can create a complete understanding by students in learning a lesson both in terms of scientific knowledge and also in terms of the Islamic Religion (Al Qur'an) to form a generation that is *Ulul Albab* (Zain & Vebrianto 2017). Rasid Muhamad (2010) states that, Islam is a system of life that includes three patterns of human relationships: relationships between man and God, man and man, and man and other creatures. According to him, in order to recognize the three patterns of relationships, three basic axes were formed in Islam as the core, namely faith, worship and morality. As such, it can be summarized that knowledge of Islamic Studies is based on the three basic patterns mentioned earlier (Farihah & Septiadi 2019).

The learning process carried out by teachers in schools has not been identified as implementing an integrated learning process. This is because teachers are still not well versed in scientific knowledge in relation to religious scholarship. In addition, not all teachers have an education with a religious background, so that teachers still have difficulty integrating science, technology and religious scholarship. The discoveries of science and technology have provided all kinds of convenience to humans. The journey that used to take months now can be taken only a few hours by plane, high speed train, there are other discoveries that really distinguish, facilitate and delight the way of life of humans today compared to the past.

Islam is a Religion that is in accordance with human nature, then it's shari'a not only encourages humans to study science and technology, then builds and fosters civilization, it even regulates its people in that direction to be safe and save well in the world, even more so in the afterlife. But until now, there is still a strong opinion in the wider community that religion and science are two inseparable entities. In other words, science does not care about religion and religion does not care about science. This is because the assumption that science and religion have different ways of approaching, experience, and these differences are a source of debate.

Science and biology study various problems related to various phenomena of living things at various levels of the organization of life and the levels of their interactions with environmental factors in the dimensions of space and time. Biology as part of science consists of products and processes. Biological products consist of facts, concepts, principles, theories, laws and postulates related to living things and their. Interactions with the environment (Amri, 2017). There are also some groups who view

that science and religion stand in their respective positions, because the field of science relies on empirically supported data to ascertain what is real and what is not, religion is instead ready to accept the unseen and uncertain based only on tangible variables. of faith and belief.

That religion and science must coexist independently of each other, because despite the similarities in their mission, the fundamental difference between the two presents a conflict that will resonate at the core of each. So that the integration between science and religion is hardly feasible, as a scientific criterion for identifying this assumption to be real, because it is certain that there is a process of cannibalization between the two, while religion is very important for individual welfare and aims to create harmony for life.

Teachers should be able to prepare natural sciences teaching materials in which contains the activities and able to choose strategies and approaches to learn in accordance with the conditions in the school by integrating science and Islamic values, so that students will experience more meaningful learning and reach good outcomes. Learning activities both in classroom and the learning materials should be linked to students' daily life and designed as fun activities as possible for students, so that learning activities experienced by students will be more meaningful to them. In order to make learning activity to be fun, new concepts or information must be linked to existing concepts in the student's cognitive structure (Farihah & Septiadi, 2019).

In learning activities, the teacher is allowed to relate the material being discussed with the student's condition, both student hobbies and needs, cognitive development, daily environment, and provisions that students already have. This will have a positive impact on students because the Biology concept being studied becomes meaningful. According to the Indonesian National Education System Law no. 20 of 2003 article 1 (2003):

1. Education is a conscious and planned effort to create an atmosphere of learning and the learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state.
2. National education is education based on Pancasila and the 1945 Constitution of the Republic of Indonesia which is rooted in religious values, Indonesian national culture and responsive to the demands of changing times.

The law above also implies the integration of religious values in learning. The mandate of the constitution proves that the purpose of education in Indonesia is not only to develop potential and educate, but also to form humans with religious characteristics. Student success in learning that can increase Imtak is greatly influenced by internal conditions of students and external factors of students. One of the external factors that

influence the success of students in understanding a learning topic that comes from the teacher is the teacher's ability to choose the right learning methods and approaches so that Imtak values can color in the learning. In a learning process there is no one appropriate learning approach for all topics and all situations.

Therefore the teacher in determining what learning methods and approaches to choose must always pay attention to the condition of the students, the existing infrastructure and what learning materials will be discussed. Likewise in every school, not all students have the same socio-cultural, economic, religious and motivational backgrounds in each study, this condition requires that every teacher understands the characteristics of the student or class they are facing if they want the learning process to be successful. Different conditions regarding the ability, economic, socio-cultural, religious and motivational backgrounds of these students in learning can be seen from the learning achievements achieved, morals, character and behavior of students shown by students in their daily lives.

The integration of values in learning / education is a process of guidance through educational role models that are oriented towards planting the values of life which include religious, cultural, ethical and aesthetic values towards the formation of students who have religious spiritual intelligence, self-control, and personality. Intact, have a noble character, and the skills needed by him, society and the country (Sumantri, 2007).

A teacher, must be able to synergize students' mastery of Science and Technology and Imtak, without neglecting one of them. Actually it is not too difficult to create a lesson that can integrate religious values into a subject matter. In any lesson, a teacher must be able to include religious values such as faith and devotion. Dwi (2010) said in the SETSR (Sciencel, Environment, Social, Technology, and Religion) approach which could be implicated in teaching (2010). This statement reminds us that religious education, in particular cultivating faith and piety, can be done in any subject, not only in religious studies.

B. METHOD

Research uses a literature review design that aims to obtain information and integrate science and Islam. The steps taken include collecting library data, reading and taking notes, and comparing literature to be processed and producing conclusions. The data used are secondary data from books, journals, scientific articles, literature reviews that contain the concepts being studied. Starting from the research result material which is considered from the most relevant, relevant, and sufficiently relevant sequences. Read the abstract of each study first to provide an assessment of whether the problem discussed is in accordance with what is being solved in the study. Write down important

parts and are relevant to the research problem.

C. RESULTS

Educational objectives are classified according to Ali Asraf (Ikhwan, 2014), (1) developing deeper spiritual insights and developing a rational understanding of Islam in the context of modern life; (2) equip students with various skills of knowledge and virtue, both practical knowledge, welfare, social environment, and national development; (3) developing the ability of students to appreciate and justify the comparative superiority of Islamic culture and civilization over all other cultures; (4) improve emotional impulses through imaginative experiences, so that creative abilities can develop and function to know the right and wrong Islamic norms; (5) helping growing children to learn to think logically and guiding their thought processes based on the required hypotheses and knowledge concepts; and (5) develop, refine, and deepen communication skills in written language and Latin (foreign).

Design

The teaching strategy carried out by the Biology subject group teacher, namely: Preliminary activities, by saying greetings and prayers, then asking a little about previous material or previous assignments. For Biology lessons it also begins with perceptions that can attract students, especially when touched on a little about religious material related to the material. Pretest is rarely done in preliminary activities. The main activity, explaining teaching material or discussing questions. The integration of religious material was mostly conveyed during the core activity. The closing activity is carried out by conducting a post-test, submitting assignments if any, and drawing conclusions on the material that has been submitted which are usually included in Islamic values. Then closed with prayer and greetings. The steps of the learning process carried out have illustrated the integration of religious material in the learning process.

The integration carried out is incidental and natural. Interpretation is more to Islamic values in everyday life, the delivery of the Qur'an and hadith as well as Islamic values. However, the steps in the learning process carried out have not been systematic and directed at the goal of integrating religious material as a whole. The assessment carried out for religious material that is integrated with the Biology subject has not been carried out in full. For example, for assessments carried out more in the cognitive domain. However, for the assessment of both the cognitive and affective domains, there is no standard assessment format. Based on the policy issued, the assessment of student learning success in the integrated learning process includes three domains, namely cognitive, affective, and psychomotor.

For the assessment of the cognitive domain, it can be integrated in the general

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assessment / evaluation process, such as the Final Semester Examination, Graduation Test, or others. Meanwhile, affective and psychomotor assessments were carried out separately. Examples in the Biology subject concerning environmental conservation. The affective realm can be seen from the concern of students when they see garbage scattered, or their discipline in disposing of garbage in its place, the argument is that God loves cleanliness and beauty. The psychomotor domain can be seen from the efforts of students to recycle waste into a product with a sale value.

Implementation

Based on the methods and techniques used in this study, the results show that the planning prepared by the Biology subject teacher in the learning process integrates religious material, namely the preparation of the Learning Implementation Plan (RPP), the preparation of teaching materials (teaching materials), and the preparation of learning media. This is in accordance with the statement (Sudjana, 2013) that in essence, the issues that must be answered in the planning of the learning process are the objectives of the teaching process, materials or learning materials, methods and tools used in the teaching process, and assessment in the teaching process.

RPP is the main part that must be prepared in planning an integrated learning process between Biology family subjects and religious material. In implementation in the field, the lesson plans compiled by the teacher have not explicitly shown the integration of religious material in the learning process. The new lesson plans compiled are lesson plans with character and not yet integrated with religious material. The steps used to integrate science and technology education with Islam are as follows (Zain & Vebrianto 2017):

1. Choosing a theme or topic to be studied. The theme must be broad enough so that students can investigate various related concepts.
2. Determine the concepts to be developed and then make a list. These concepts are also a starting point in determining learning activities. The concepts defined must be directly related to the theme.
3. Determine the activities to be carried out in order to investigate the registered concepts. Make sure that each concept studied requires one or more activities related to the theme.

Determine any field of study or subjects related to a particular concept. In this way, it means that there has been an integration of various fields of study or fields of science in highlighting a concept.

4. Review activities and fields of study related to integrated learning. Review is intended to assess the effectiveness of the use of a particular field of study or a particular subject chosen.

5. Organize the material to facilitate its distribution or use in activities to be carried out either individually or in groups.
7. Determining the sequence of activities in class implementation, preferably starting from the easiest or simplest sequence or already accustomed to being carried out by students.
6. Organizing follow-up discussions. This is done to improve the ability of students to describe what they have done and make conclusions from these activities.

D. DISCUSSION

Departing from an integrative mindset, which is uniting the meaning of life in the world and the hereafter, public education is essentially religious education as well, science education is also religious education, and vice versa, religious education is also general education, religious education is science education. Ideally, there is no need for ambivalence and dichotomic problems in educational orientation. The understanding of the integration of Islamic values in science learning is implied in the Qur'an. The Koran does not contradict science and religion. Even in many of His verses, it is emphasized that people always think about events in nature to strengthen their religious beliefs (Surah Al Anbiyaa, 21: 30).

Science in this case also is not a separate part of religion. Science is an integral part of Islam. The Koran states that science, like the science of human life, is an integral part of religion. Science teaches humans how to manage nature, carry out various processes, and produce things for the needs of life. Meanwhile, religion teaches people about the value system. Religion teaches about the value of devotion to Khaliq and the value of kindness to others. One thing that should get attention is the statement that the Holy Qur'an is from Allah who has absolute truth. This absolute truth causes the Koran to be used as a tool to test the truth of scientific principles. If scientific findings contradict the Qur'an, it is because there are still very limited investigative methods that can be developed by humans.

Lawson (1995) stated support for this statement, which states that there are two essential differences in approaches between science and religion. Religion believes in things based on beliefs, while science believes in things based on evaluating facts and reasoning. However, truth in religion is eternal while truth in science is only tentative (temporary). Therefore, in fact, religion and natural science are not two poles that cannot be reconciled. In fact, it can be said that they are intertwined and very close. Religion with an approach through belief means that the truth that is brought is absolute, the truth is clear. Thus, science has a duty to test this truth, or even match the results with this truth. This means that there is something that can actually be reconciled.

E. CONCLUSION

Based on the findings of the data and discussion, it can be concluded that what is

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prepared by the Biology subject teacher in planning the learning process that integrates religious material is the preparation of lesson plans, teaching materials / materials, and learning media. The RPP compiled is not yet an integrated lesson plan with religious material. To prepare an integrated lesson plan, it is necessary to determine a theme in the Biology subject which will be integrated with religious material (Qur'an, hadith, fiqh, akidah akhlak), then determine the indicators and objectives to be achieved. The learning module used for Biology has integrated religious material. Learning in the process has been integrated between biology material and religious material.

Integration is generally done incidentally, and the nature of the main subjects is retained. So that it can be classified as the integration of religious material on Biology subjects including the correlated model (relationship model). Assessment of student learning success in integrated learning between Biology subjects and religious material has been carried out by Biology subject teachers. The assessment carried out is in terms of cognitive. Indicators of student success in the process integrated learning with religious material in the cognitive, affective, and psychomotor domains have not been clearly determined.

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