

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values in Biology Learning

by Astuti Amin

Submission date: 13-Apr-2023 11:29PM (UTC-0700)

Submission ID: 2064208270

File name: Revisi-Article_130921_for_revision_Astuti_Muh.Amin_-_Copy.doc (464K)

Word count: 10414

Character count: 62177

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values in Biology Learning

A preliminary study showed that Biology learning in the classroom could not encourage the integration of science concepts and Islamic values. The aims of this study are to (1) develop a new learning model that integrates scientific principles and Islamic values, and (2) characterize the RQANI model's validity, practicability, and effectiveness. This study belonged to the research and development study. The learning model was developed in four stages, including (1) preliminary investigation, (2) design, (3) realization/implementation, and (4) test, evaluation, and revision. The study population included all biology education students at IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar in Indonesia. The study enrolled 120 fourth semester biology education students from IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar, Indonesia. The research instruments employed in this study are validation sheets for learning models, observation sheets for learning implementation, learning achievement tests, and response questionnaires for the learning model. The results of this study include: (1) a new learning model, namely RQANI, that consists of five learning stages (Reading, Questioning, Answering, Elaboration, Integration); (2) The validity of the RQANI prototype was very high with an average value of 3.74. The RQANI learning model was considered fairly practical and effective in improving student learning outcomes and positive responses. Therefore, it can be concluded that RQANI has met the requirements for a valid, practical and effective learning model.

Keywords: Islamic Values, Learning Model, RQANI, Science

INTRODUCTION

The integration of Islamic values into science learning must be supported by an effective learning approach or model (Anshori, 2021; Lubis, 2015). Scientific truth does not only refer to evidence-based reasons but also results from questions about identity, meaning, purpose and beliefs (Jacobsen & Jacobsen, 2018). The scientific characteristics of biology learning include products, processes, attitudes, technology, and strategic tools to develop various aspects of learning (cognitive, affective, and psychomotor) which are very important in shaping students' character and morals. In achieving its ultimate goals, the Islamic education system integrates and harmonizes the interests of the world and the interests of the hereafter (QS Al-Qashash, 77). Integration is the keyword guaranteeing that there is no separation between religion and science (Mustami et al., 2017). Integrated learning has been proven able to train students' critical thinking skills and build their systematic knowledge (Salam et al., 2020). Effective integrated learning can also improve students' learning skills (Winarno et al., 2020). Research conducted by (Winarso & Wahid, 2020), explains that the development of Al-Quran integrated mathematics learning models and tools is effective in developing the spiritual and religious attitudes of students in schools. Education that is integrated with the Al-Quran and Al-Sunnah can be carried out by educators by

implementing models, strategies, approaches and learning methods that combine learning materials with the values of the Qur'an and Al-Sunnah (Lubis, 2015; Munifah et al., 2020).

Learning that ⁴ integrates Islamic values is able to develop students' thinking skills holistically (Purwati et al., 2018; Sriatun et al., 2018; Sunhaji, 2018). Islamic values in science have the potential to help students acquire attitudes, develop character, understand their strengths and weaknesses, and recognize the truth in everyday life in society (Listyono et al., 2018). Strengthening values-based teaching is able to gradually build a strong moral foundation that plays an important role in influencing current and future decision-making and attitudes (Sulayman, 2014; Tambak & Sukenti, 2020). Integrated science learning using a guided discovery model and problem-based learning has been proven able to improve students' scientific literacy (Ardianto & Rubini, 2016; Narmaditya et al., 2018). Integrated learning can shape the concept of science teaching and increase collaboration between educators and students (Lang & Olson, 2000; Wei, 2020). According to observations and interviews with science teachers at an Integrated Islamic School, they have encountered problems thus far in creating a learning method that incorporates Islamic values with scientific concepts (Sintia & Violita, 2020). Weak integration of science and religion has been repeatedly identified as a barrier to the advancement of science, technology, and social transformation. The Director General of Islamic Education of Indonesia has instructed the Chancellor of Islamic Higher Education (PTI) to study, develop and organize the integration of religion and science (Ali, 2020). It is vital to incorporate Islamic ideals into educational practices to develop pupils who possess self-control and who embody the spirit of Islam in all parts of life (Demina et al., 2019; Kosasih et al., 2020).

The benefits obtained from developing a learning model that integrates science and religion include increasing students' understanding of religion, deepening students' value-based knowledge, increasing the implementation of science practices in daily life, developing students' character (Adegboyega, 2018; Farihah & Septiadi, 2019; Rahardjanto & Susilowati, 2018; Suryaningsih, 2015), developing students' competence, moral values and responsibility (Ranti & Usmeldi, 2019), and providing more meaningful learning experiences (Yusuf et al., 2018). Character building through the integration of science with Islamic values can help students maintain responsibility for learning and develop ethics in the classroom (Berkowitz & Bier, 2005). It has been proven that a new mathematics learning model that incorporates Islamic principles, called the Qur'an-based learning approach (QBL) makes learning more meaningful and can effectively internalize Islamic values (Suroso et al., 2018). Internalization of Islamic principles in chemistry education might help students to elaborate on concepts, internalize specific Qur'anic verses, and internalize descriptions and the characteristics contained within them. The development of a learning model that incorporates Islamic values and Minangkabau indigenous wisdom using the plomp model design results in a valid and feasible model that contributes to the realization of a comprehensive Islamic education between parents, schools, and the community (Kosim et al., 2020).

The principles taught in the Qur'an serve as a reference for producing theory and developing learning (Sholichah, 2018). In fact, it is difficult to implement a teaching and learning process that can instill religious values in students and that can connect science and religion (Badlisyah & Munawwarah, 2018). Learning often runs independently and is not integrated with religious values, because it is often assumed that religion is only limited to religious practices. The non-contextual teaching and learning process will hinder the development of students' ability to think holistically and make it difficult for them to relate the concepts they learn in the classroom to their daily life as a Muslim (Khasanah et al., 2017; Sunhaji, 2018). As a result, students are not given the opportunity to experience learning in real-world contexts. Students at Islamic institutions not only learn how to theoretically prove information about Islamic learning and science, but also how to solve numerous problems involving religious concerns using a scientific method (Priatna, 2019). Integrating Islamic values using a learning model integrated with an e-learning platform can improve students' attitudes and attention to Islamic principles (Syarif, 2020). The Integrative Curriculum (IC) is a proven method for infusing Islamic beliefs into biology education. The Plomp development design was used to create learning materials that incorporate this integrative concept and approach (Ibrahim et al., 2018).

The results of observations and interviews with Biology students from IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar in South Sulawesi, Indonesia revealed that Biology classrooms rarely integrated Islamic values effectively. The biological concepts taught in the universities were focused more on the cognitive domain. In addition, the theories were presented through abstract and dense materials that were difficult for the students to understand. The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation in Islam (Priatna, 2019). The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5). This implies that studying science can help us strengthen our confidence in Allah SWT by educating us about the nature of human creation. Science and technology are advancing at a breakneck pace, placing an increasing need on Muslims to continue expanding and deepening knowledge while adhering to Islamic ideals.

The role of lecturers in learning is not only to transfer knowledge, but also to integrate moral and spiritual values, build student's personality and character by facilitating, motivating and guiding students through meaningful learning (Kasim & Yusoff, 2014). Furthermore, argues that through a combination of content material, student's academic skills and interactive skills, educators can bring a positive impact to learning and to the development of the students (Kudari, 2016). According to (Hakim, 2012), the integration of Islamic values into the classroom can be done by combining science and Islamic teachings. Learning materials that are integrated with Islamic values will motivate students to change the way they think and behave (Purwati et al., 2018).

⁶ Research conducted by (Baba et al., 2016) shows that the integration of Islamic values, directly or indirectly, makes the learning process more valuable and meaningful. ¹⁰

Based on the explanation, research findings, and past studies presented above, it can be assumed that the development of a learning model that can integrate Islamic values into the concepts of science is necessary. The learning model developed should be able to connect concepts in Biology with the holy verses of Al-Qur'an and Al-Hadith. The problems in this study were formulated into (1) How can a new integrated learning model be generated using the Plomp's development procedures? (2) How valid, practical and effective is the model in terms of its implementation in the classroom?. The research hypothesis is formulated into the implementation of the RQANI learning model is effective in increasing biology students' learning achievement. It is expected that the results of this study can provide insights and information about the effectiveness of an integrated learning model with Islamic values in improving students' character, especially in facing the 21st century global challenges.

METHOD

Research Goal

³² The current study was designed as a Research and Development (R&D) study. The product generated in this study is a new learning model called RQANI. The procedures for developing the prototype were adopted from (Plomp, 2007) consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision. The research procedures are depicted in Figure 1.

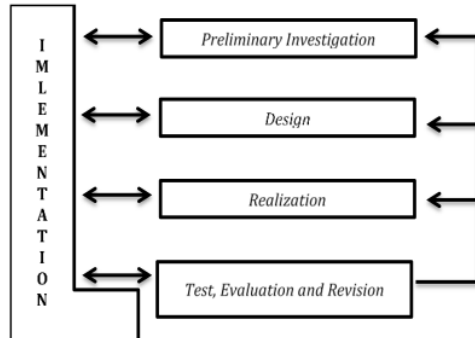


Figure 1
Plomp's Development of Model (Plomp, 2007)

³⁵ The procedure for developing the RQA learning model used in this study can be described as follows.

45

1. Preliminary Investigation

This phase established the initial circumstances for the curriculum and learning process. In general, this phase focused on doing preliminary research to establish the rationale for developing the RQANI model. This rationale relates to the investigation of learning theories that underpin the formation of and preliminary studies on variables in research. This step strove to ensure that the learning design is consistent with the analysis of biology learning needs, particularly the integration of Islamic values and the notion of biology. The purpose of this preliminary research was to ascertain the initial conditions for (1) biology education students at IAIN Ternate in North Maluku; (2) biology education students at STKIP KIE Raha Ternate in North Maluku; and (3) biology education students at UIN Alauddin Makassar in South Sulawesi.

2. Design

This phase was dedicated to the development of the RQANI learning model's design and idea. This phase was supposed to result in the following: (1) design of the learning syntax; (2) design of the social system or supportive learning environment; (3) design of the reaction principle; (4) design of the support system; and (5) design of the instructional impact of learning and accompaniment. This design process was documented in the draft RQANI model book.

3. Realization/Implementation/Construction

This phase was dedicated to developing the RQANI learning model. This phase involved validating the learning design with experts. The term "experts" refers to lecturers who are specialists in the field of education, particularly in the construction of instructional designs, as well as experts in the field of biological education science studies. Three lecturers served as validators: an expert lecturer in biology, an expert lecturer in education, and an expert lecturer in learning biology while incorporating Islamic principles.

4. Test, evaluation, and revision

This phase aimed to evaluate the RQANI learning model prototype's effectiveness. The activities included the following: (1) conducting focus group discussions (FGD) about the RQANI learning model prototype; (2) revising the RQANI learning model prototype based on input/suggestions from validators and the results of the FGD discussions; and (3) conducting limited tryouts about the RQANI learning model prototype. The purpose of the tryout was to determine the prototype's effectiveness, particularly in relation to the research variables of character and self-efficacy. The tryout phase was conducted with students of biology education at IAIN Ternate, North Maluku; STKIP KIE Raha Ternate, North Maluku; and UIN Alauddin Makassar, South Sulawesi.

49

Sample and Data Collection

6

The population of the study consisted of all students from the Department of Biology Education at IAIN Ternate, North Maluku, Indonesia; STKIP KIE Raha Ternate, North Maluku, Indonesia; and UIN Alauddin Makassar in South Sulawesi, Indonesia. The

⁶ sample of the study contained (1) 40 students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) 40 students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) 40 students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The sample groups were determined based on the characteristics and number of the students required for every research treatment. All of the sample classes were homogeneous based on the homogeneity test using grouping test data. This study was conducted from January 2020 until July 2020. Analysis of variance (ANOVA) was used to determine the homogeneity of the research sample classes. Survey questionnaires, documentation, interviews, and field observations were used to collect preliminary data. Meanwhile, the field trial phase was carried out by validating the model, administering tests, and surveying responses. The observation sheets on the implementation of learning using the RQANI model was used to collect data on practicality, while the model's effectiveness was determined using learning achievement tests and student responses questionnaires.

Data Analysis

¹² The data comprised (1) descriptive data about the results of the development of the learning model through the Plomp's model development procedure; (2) descriptive data about the quality of the resulting learning model (validity, practicality, and effectiveness). The validity of the learning model was examined through expert and practitioner assessments with validation sheets. The practicality of the model was examined using learning implementation sheets. The effectiveness of the model was determined through achievement test and survey. The data analysis was carried out in a descriptive quantitative manner by referring to certain criteria.

²³ The validity of the RQANI learning model was determined by calculating the mean of each validator's scores on each criterion and aspect of the assessment. According to Nurdin (2017), the validity category for each criterion, facet, or overall is as follows: invalid category if M is less than 1.5 ($M < 1.5$); rather valid category if M is greater than 2.5 ($1.5 \leq M < 2.5$); valid category if M is greater than 2.5 ($2.5 \leq M < 3.5$); very valid category if M is greater than 2.5. ($3.5 \leq M \leq 4$). M is the mean of all aspects of validity.

FINDINGS

The Development of RQANI Learning Model through Plomp's Model Development Procedures

Phase-1: Preliminary Investigation

This phase aimed to identify the initial conditions for (1) biology education students at IAIN Ternate, North Maluku; (2) students of biology education STKIP KIE Raha Ternate, North Maluku; and (3) students of biology education at UIN Alauddin

Makassar, South Sulawesi. Research data were collected through observation, interview, and survey questionnaires. Interviews were conducted with the coordinators of the study programs and biology lecturers at each of these universities.

Preliminary investigation suggests that a learning model should be developed to integrate Islamic values into Biology learning at the Department of Biology Education of IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar, South Sulawesi.

Table.1
Preliminary Investigation Results

Aspect	Descriptions		
	Campus A	Campus B	Campus C
Learning Activities	Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.	Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.	50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.
Learning Models	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.
Learning methods	The lecturers use discussion, lecturing and task-assignment methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and student presentation methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and investigation methods to facilitate learning.
Learning materials	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.
Learning facility	The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.	The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.	The classroom environment is fine, but not every classroom is equipped with the LCD projector.
Campus facility	The campus has provided the students with a laboratory, libraries and wireless internet connection. However, practicum activities are rarely done in the laboratory, literature on Biology contents is still lacking. The	The campus has provided the students with a laboratory, libraries and wireless internet connection. The wi-fi signal is weak if accessed from the classrooms. The	The campus has provided the students with a laboratory, libraries and wireless internet connection. The laboratory is equipped with adequate practicum tools and

Aspect	Descriptions		
	Campus A	Campus B	Campus C
	internet connection is good around the rectorate building, faculty and library, but is weak if accessed from the classrooms.	laboratory is not equipped with adequate practicum tools and materials. The libraries contain a limited number of books on biology.	materials. The department libraries, faculty libraries and central library contain an ample supply of books on biology number. The internet connection is good around campus.
Student's cognitive ability	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1) and understanding (C2). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.
Student's learning motivation	The students have poor learning motivation. They get easily bored because learning is dominated by lectures.	The students have poor learning motivation. They are unable to maintain their attention to every learning activity in the classroom.	The students have poor learning motivation. They need to experience learning that can integrate Islamic values and biology contents.
Student's self-efficacy	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom. Mostly, they are not certain about their own ideas and thinking process, so they cannot engage actively in the learning process.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.
Student's character values	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries and learning environment.	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries, learning environment and self development.	The students have poor character. The students' concern about the campus facility, laboratory, libraries, learning environment needs to be improved.
Student's active participation in learning	The students cannot engage actively in the learning process; learning activities are mostly dominated by the high achievers.	The students cannot engage actively in the learning process; learning activities are mostly dominated by particular groups of students. Less than 10% of the students are confident in asking and answering questions.	Not all of the students can engage actively in the learning process; learning activities are mostly dominated by the high achievers.

Aspect	Descriptions		
	Campus A	Campus B	Campus C
Student's interest	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology.	The students have low interest in learning biology. They are only attracted to particular themes. As a result, the students cannot optimize their performance in the standard of competence and basic competence set in the curriculum.	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology. The students are in favor of investigative learning.
Student's responses towards Biology learning at the campus	The students have negative responses and perceptions on biology learning at the campus. They think that biology is dull, non-contextual, difficult to understand and requires memorization.	The students have negative responses towards biology learning at the campus. Stimulation needs to be provided so that the students can feel more comfortable and relaxed in understanding concepts in biology.	The students' positive responses towards biology learning at the campus need to be improved. The students sometimes face difficulty concentrating on the lessons.
Challenges faced by students in learning Biology	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge. New learning models should be developed, such as the integration of active learning or contextual learning and Islamic values.	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.

Notes:

Campus A: IAIN Ternate, North Maluku, Indonesia
 Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia
 Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Phase-2: Design

The RQANI learning model is constructed from the following components: syntax (phases or stages of learning), social system, reaction principles, support system, instructional impacts and accompaniment impacts. The lack of students' initial knowledge indicates that lecturers need to dedicate more effort to stimulate and prepare their students to acquire theories that are needed during the learning process. This is relevant to the design of the RQANI model, of which first phase is reading. There are five learning phases in the RQANI learning model: Reading, Questioning, Answering, Elaboration and Integration.

Phase-3: Implementation/Realization/Construction

The activity carried out in phase-3 was the realization of the learning model that had been designed in phase-2. Some of the things that were realized at this stage included (a) learning syntax; (b) social system; (c) reaction principles; (d) support system; and (e) instructional impacts. The RQANI design had to undergo expert validation. In this regard, an expert in education, an expert in the integration of biology learning and Islamic values and a field practitioner with relevant experience were invited to assess the RQANI design.

Learning Syntax

There are five learning phases in RQANI: Reading, Questioning, Answering, Elaboration, Integration. Lecturer’s activities and student’s activities in RQANI are presented in Table 2.

Table 2
RQANI Learning Syntax

Syntax	Learning Activities	
	Lecturer	Student
Phase 1: Reading	<ol style="list-style-type: none"> Lecturer provides students with motivation to learn. Lecturer delivers learning objectives. Lecturer provides students with the opportunity to read relevant literature/references/textbooks/texts/modules related to the material to be discussed. 	<ol style="list-style-type: none"> Student listens to the delivery of learning motivation from the lecturer. Student listens and records the learning objectives delivered by the lecturer. Student reads relevant literature/references/textbooks/texts/modules related to the material to be discussed.
Phase 2: Questioning	Lecturer provides opportunities for students to formulate and ask questions related to the material being discussed.	Student formulates and asks questions related to the material being discussed.
Phase 3: Answering	Lecturer provides opportunities for students to answer questions related to the material being discussed.	Student answers questions related to the material being discussed.
Phase 4: Elaboration	Lecturer facilitates students’ collaborative work so that they can understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.	Students work in groups to understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.
Phase 5: Integration	<ol style="list-style-type: none"> Lecturer provides opportunities for students to work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Lecturer wraps up the lesson. 	<ol style="list-style-type: none"> Students work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Student pays attention to the lecturer and draws a conclusion from the lesson.

Biology instruction began by providing opportunities for pupils to read previously released material, in this case on the digestive system of food. Following that, each student was instructed to create a question and record it on the Student Worksheet (LKM). The results of their efforts were subsequently extended by students through interaction and discussion with their groupmates. Students studied the food digestive system materials and used an application already installed on their mobile phones to search up relevant holy verses from the Koran and Al-Hadith. They then recorded the interpretations of the Quran and Hadith on the Student Worksheet (LKM) and continued discussions about the concept of food intake in Islam, food metabolism in the body, body detoxification through fasting, various causes of digestive disorders, preventative measures for disease/digestive disorders, as well as health connections with tawakal and qonaah (gratitude).

Social System

Social system describes the roles and functions of students, the interaction between the lecturer and students and learning objectives or targets. The RQANI model is a learning model designed to activate students in an elaborate learning process that integrates scientific concepts and the holy verses of the Al-Quran and Al-Hadith. This model provides an opportunity for students to prepare/equip themselves with initial concepts, practice asking high-level questions, answer questions effectively and efficiently, work together in groups to understand the material that has been studied, have dialogue and discuss materials that are difficult to understand with group colleagues, solve every day problems and cooperate with peers or in groups to find the holy verses of Al-Quran and Al-Hadith that are relevant to the material that has been studied. On the other hand, the lecturer acts as a facilitator or a guide who arranges learning so that it can run well. This model is expected to improve student's self-efficacy, character, critical thinking skills, argumentation skills, communication skills, social skills, analytical skills, collaboration skills, elaboration skills, conceptual mastery and other skills needed in the 21st century learning.

The integration of the RQANI model in biology learning in this study established multidirectional interactions between lecturers, students, intragroups and intergroups. Lecturers facilitated discussion by establishing a congenial and dynamic environment for the students, particularly during the elaboration and integration stages of RQANI. The topic was primarily about how to express thankfulness to Allah SWT for the privilege of enjoying a healthy body that is properly kept and cared for. Maintaining a healthy physique through the consumption of halal and thoyyib foods and beverages is a requirement for all Muslims.

Reaction Principles

The RQANI learning model provides opportunities for students to be actively involved in learning. The lecturer will allow the students to develop knowledge, construct understanding, elaborate on existing knowledge and understanding, and integrate that knowledge and understanding of the Islamic from the Al-Quran and Al-Hadith. The

lecturer should facilitate and provide scaffolding if students experience difficulties in learning. The lecturer also have to provide feedback on comments, arguments, questions, answers, conclusions, ideas produced by the students in the classroom. If there is a misconception, the lecturer is obliged to provide clarification of the concept and additional explanation which is supported by strong and logical arguments and relevant references. The two-way interaction between the lecturer and students is expected to increase student's activity and learning autonomy so that they are able to overcome learning problems that have been identified in the previous stage, namely in the initial investigation phase. The following is an example of a lecturer's response to the arguments given by students in the integration phase.

"The halal status of a food item is the most critical factor that Muslims must consider, particularly when it comes to food selection. The food must then be healthy (thayyib) and non-toxic to the body. It is expressly stated in the Qur'an that it is permissible to eat the fruits of the slaughter of the People of the Book, Q.S. Al-Ma'idah verse 5 states that the food (slaughter) of those who were given the Book is permissible for you, and your food is permissible for them as well."

Support System

The support system referred to in this study is additional requirements to implement the RQANI model, which includes learning tools and learning resources. Physical requirements can be in the form of Learning Implementation Plan (RPS), Lecture Program Unit (SAP), Student Activity Sheet (LKM), lecture dictates and supporting Information and Communication Technology (ICT) media. Non-physical requirements can be in the form of student psychological condition before conducting learning, lecturer's ability to manage learning in RQANI, good communication between the lecturer and students, and conducive learning atmosphere. Biology learning was facilitated in this study using cartoons and instructional films pertaining to the digestive system of food. Then, pupils were instructed to download the Al-Quran and its translation application to their cellphones. Additionally, the students were provided with Student WorkSheets (LKM) and texts pertaining to the food digestive system.

Instructional and Accompaniment Impacts

The RQANI model was used to ensure that the learning objectives specified in the Learning Implementation Plan (RPS) and Lecture Program Unit (SAP) for the food digestive system material were met. The phases of RQANI learning have been shown to boost student engagement in biology instruction. This can be seen in the activity observation sheets, particularly in the increase in the number of students who ask and answer questions and make arguments about the digestive system's material. The third and fourth phases of RQANI have been shown to significantly improve students' elaboration and integration abilities in relation to the content being studied while maintaining Islamic beliefs. This is quantified using the student activity observation sheets and the student response questionnaire sheets during biology instruction utilizing the RQANI model. Following the RQANI learning process, a visible and quantifiable

educational benefit was also observed in terms of enhancing student self-efficacy and character. The increase in scores following the application of the RQANI model demonstrates this.

The accompaniment impacts of Biology Learning using RQANI include:

- 1) The improvement of student's argumentation and communication skills
- 2) The improvement of student's social skills
- 3) The improvement of student's cooperation and collaboration
- 4) The improvement of student's concept mastery
- 5) The improvement of student's learning autonomy

Phase-4: Test, Evaluation, Revision

The RQANI learning model that had been developed and claimed to be valid was then tested on a limited basis to investigate changes in the character values and self-efficacy of students who took part in the tryout. The tryout was conducted on (1) students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The data from this tryout provided a basis for reflecting on the effectiveness of the RQANI (Reading, Questioning, Answering and Integration) prototype.

Table 3
Students' Character Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
Students from campus A	46.75	78.75	72.60
Students from campus B	44.41	73.69	68.74
Students from campus C	41.08	77.24	89.73

Notes:

Campus A: IAIN Ternate, North Maluku, Indonesia
 Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia
 Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 4
Students' Self-Efficacy Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
Students from campus A	47.65	75.28	60.73
Students from campus B	43.37	71.77	67.03
Students from campus C	43.63	75.78	75.60

Notes:

Campus A: IAIN Ternate, North Maluku, Indonesia
 Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia
 Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia

2 The Validity, Practicality and Effectiveness of RQANI

2 **The Validity of RQANI**

The validation of the RQANI learning model was carried out by three lecturers from the State Islamic Religious Universities (PTKIN) in Indonesia. They are experts in biology, biology education, and the integration of Islamic principles into biology teaching. The average of the three validators' ratings of the model was then determined. The results of the expert validation on the learning model's syntax are summarized in Table 5.

Table 5
The Validation Results of RQANI Syntax

No	Evaluated Aspect	Mean Score
A	Objective	
	Rationales for developing the learning model are explicit.	3.67
B	Supporting Theories	
	1. The theories used in the model development are relevant to RQANI.	4.00
	2. Piaget's theory supports the development of RQANI.	4.00
	3. Vygotsky's social development theory supports the development of RQANI.	4.00
	4. David Ausubel's learning theory supports the development of RQANI.	4.00
	5. Bruner's theory supports the development of RQANI.	4.00
C	Learning Syntax	
	1. The learning stages are arranged coherently and clearly.	4.00
	2. The learning stages are logical and rational.	3.67
	3. The learning stages activities of the lecturer and of the students.	4.00
	4. The description of learning activities at each stage of the learning model reflects the flow of the activities that can be carried out by the lecturer and the students.	4.00
	5. The description of learning activities at each stage of the learning model is oriented towards constructing student knowledge.	3.33
	6. The description of learning activities at each stage of the learning model attracts student's attention.	4.00
	7. The description of learning activities at each stage of the learning model is oriented towards increasing student's learning autonomy.	3.67
	8. The description of learning activities at each stage of the learning model is oriented towards increasing student's character.	4.00
	9. The description of learning activities at each stage of the learning model is oriented towards increasing student's self-efficacy.	4.00
	10. The description of learning activities at each stage of the learning model is oriented towards increasing student's active involvement in learning.	4.00
	11. The description of learning activities at each stage of the learning model is oriented towards increasing student's elaboration skills.	3.33
	12. The description of learning activities at each stage of the learning model is oriented towards increasing student's integration skills.	4.00
	13. The description of learning activities at each stage of the learning model is oriented towards increasing student's critical thinking skills.	3.67
	14. The description of learning activities at each stage of the learning model is oriented towards increasing student's argumentation and communication skills.	3.33
	15. The description of learning activities at each stage of the learning model is oriented towards increasing student's social skills.	3.33
	16. The description of learning activities at each stage of the learning model is oriented towards increasing student's cooperative and collaborative skills.	3.67
	17. The description of learning activities at each stage of the learning model is oriented towards increasing student's concept mastery.	3.67
D	Social System	
	1. The description of learning activities at each stage of the learning model shows	4.00

No	Evaluated Aspect	Mean Score
	that there is an interaction between the lecturer and students.	
2.	The relationship pattern between the lecturer and the students demonstrates the lecturer's role as a facilitator and a guide.	4.00
3.	The description of learning activities at each stage of the learning model shows that there is an interaction between students.	4.00
4.	The relationship between the lecturer and student individuals is explicit.	3.33
5.	The relationship between the lecturer and student individuals is clear in discussion.	4.00
E	Reaction Principles	
1.	Lecturer behavior is clearly stated.	3.67
2.	The description of learning activities shows that the lecturer provides learning resources needed by students such as textbooks, online media, etc.	3.67
3.	The description of learning activities shows that the lecturer provides motivation to increase student interest in learning.	4.00
4.	The description of learning activities shows that the lecturer provides a number of activities that stimulate student curiosity.	3.33
5.	The description of learning activities shows that the lecturer encourages students to explore ideas and communicate scientifically.	3.67
6.	The description of learning activities shows that the lecturer gives students the opportunity to ask questions when they have difficulty understanding phenomena and concepts.	3.33
F	Supporting System	
1.	Learning tools are arranged according to the steps of the learning model.	4.00
2.	Learning devices are arranged in accordance with learning objectives that are oriented to increase student's self-efficacy and character.	3.67
G	Instructional and Accompaniment Impacts	
1.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are clearly stated in the RQANI syntax.	3.67
2.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are logically stated in the RQANI syntax.	3.00
3.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) show the goals that are going to be achieved by RQANI.	3.33
4.	The accompaniment impacts, which are in the form of critical thinking skills, argumentation and communication skills, social skills, collaboration and collaborative skills, conceptual mastery, learning autonomy, are in accordance with the learning objectives to be achieved.	3.67
H	Conclusion	
1.	The quality of the learning model in general	3.67
2.	The feasibility of the learning model based on your opinion	3.67
Mean score		3.74 (Highly Valid)

According to the validation results for the learning syntax shown in Table 5, the average score for the RQANI model's overall assessment aspect was 3.74. When corrected for the validity category rules established by Nurdin (2017), this value falls within the range of $3.5 \leq M \leq 4$ (very valid). It may be inferred that the RQANI model is highly valid according to the validators, indicating that it is suitable for use in learning.

The Practicality of RQANI

17 The practicality of the learning model was examined using the learning implementation sheets. Consistency test that was conducted to measure the implementation of the syntax showed a parallel significance value of 0.341, while the data coincidence obtained a significance value of 0.011. The data parallel level showed a number greater than 0.05, while the data coincidence was smaller than 0.05. These figures suggested that the RQANI learning syntax was parallel but not coincident. Although not coincident, the results of these tests indicated that the learning syntax had been carried out consistently. The consistency test results are shown in Table 6.

Table 6
Consistency Test Results of RQANI

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34024.645	3	11341.548	688.487	0.000
	b1, b2	15.055	1	15.055	0.914	0.341
	b1, b2, b3	154.999	2	77.500	4.705	0.011
	Residual	1910.884	116	16.473		
Total		35935.529	119			

The Effectiveness of RQANI

18 The effectiveness of RQANI was measured based on (1) the students' test scores and (1) the students' questionnaire responses. The students' test results after the implementation of RQANI are summarized in Table 7.

Table 7
Recapitulation of Student's Learning Achievement

	Campus A	Campus B	Campus C
Highest score	93	90	98
Lowest score	82	80	86
Score range	11	10	12
Mean score	85.25	83.19	89.22
Test Completion	100	100	100

Notes:

- 3** Campus A: IAIN Ternate, North Maluku, Indonesia
- Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia
- Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia

57 The students' responses towards RQANI learning model are presented in Table 8.

Table 8
Summary of Students' Responses towards RQANI

No	Statement	University			Mean score	Inter-achievement
		Campus A (%)	Campus B (%)	Campus C (%)		
1	For me, learning using RQANI is interesting.	94.44	94.44	97.22	95.37	Very good
2	For me, learning using RQANI is fun.	88.89	91.67	94.44	91.67	Very good
3	RQANI helps me follow the lesson well.	86.11	86.11	88.89	87.04	Very good
4	RQANI helps me improve my learning motivation.	88.89	88.89	91.67	89.81	Very good
5	RQANI helps me improve my collaboration skills.	88.89	94.44	94.44	92.59	Very good
6	RQANI helps me improve my learning autonomy.	83.33	86.11	88.89	86.11	Very good
7	RQANI helps me improve my self-efficacy.	94.44	94.44	97.22	95.37	Very good
8	RQANI helps me improve my character.	97.22	94.44	97.22	96.30	Very good
9	RQANI encourages me to be actively involved in learning.	88.89	88.89	88.89	88.89	Very good
10	RQANI helps me improve my elaboration skills.	88.89	86.11	86.11	87.04	Very good
11	RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).	94.44	94.44	97.22	95.37	Very good
12	RQANI helps me improve my reading interest.	91.67	88.89	91.67	90.74	Very good
13	RQANI helps me boost my confidence in asking questions.	91.67	91.67	88.89	90.74	Very good
14	RQANI helps me improve my ability to answer questions.	86.11	86.11	91.67	87.96	Very good
15	RQANI improves my learning experience.	83.33	86.11	86.11	85.19	Very good
16	RQANI helps me realize that I need to study harder.	86.11	91.67	91.67	89.81	Very good
17	RQANI adds clarity to the learning material.	86.11	94.44	88.89	89.81	Very good
18	RQANI improves my curiosity.	88.89	86.11	88.89	87.96	Very good
19	RQANI helps me regulate learning.	86.11	83.33	86.11	85.19	good
20	RQANI helps me evaluate learning.	80.56	83.33	83.33	82.41	good
21	RQANI improves my critical thinking skills.	83.33	83.33	86.11	84.26	good
22	RQANI improves my	86.11	86.11	88.89	87.04	Very good

No	Statement	University			Mean score	Inter-achievement
		Campus A (%)	Campus B (%)	Campus C (%)		
	argumentation and communication skills.					
23	RQANI improves my social skills.	91.67	88.89	86.11	88.89	Very good
24	RQANI helps me develop cooperation and collaboration with classmates.	88.89	91.67	91.67	90.74	Very good
25	RQANI helps improve my concept mastery.	86.11	88.89	88.89	87.96	Very good
	Mean score	88.44	89.22	90.44	89.37	Very good

Notes:

Campus A: IAIN Ternate, North Maluku, Indonesia

Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia

Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 8 shows that the average score of students' responses towards the implementation of RQANI in IAIN Ternate, STKIP KIE Raha Ternate, UIN Alauddin Makassar was 89,37 and categorized very good. Syntax or learning stages are the basic steps that must be taken in implementing a learning model (Fuad et al., 2017; Purwanto et al., 2020).

In this study, the reading stage for learning biology was conducted at the beginning of the session with the goal of providing students with an early comprehension of the lecture topic. As a learning resource, the lecturer created and distributed a textbook containing information about the digestive system. This is to ensure that the learning needs identified during the preliminary inquiry stage are met. After using the RQANI learning approach in the classroom, it was seen that students gained confidence in disputing and participating actively in elaboration and integration tasks. At this stage, each student is given the opportunity to read the material before entering the classroom, so the students can build initial knowledge that is useful for asking questions, answering questions, providing arguments and doing a discussion. This stage helps students gain understanding of a text by analyzing and interpreting it so that their learning autonomy can gradually increase. Student's initial knowledge is significantly influenced by experience in reading materials that are going to be studied or discussed in the classroom (Hikmawati & Taufik, 2017). In addition to improving student's cognitive ability, the development of reading interest also leads to the development of positive behavior towards the environment.

After instructing students to study the textbook on the digestive system of food, the lecturer instructed them to practice writing questions on the Student Worksheet (LKM). Individual questions are ordered in a methodical manner, beginning with the simplest and progressing to the most complicated. *Questioning* in RQANI has the potential to stimulate students to formulate quality questions. At this stage, students are accustomed to asking questions that encourage reasoning skills and higher-order thinking skills. All students are required to be able and courageous to ask questions. The questions asked

can activate their previous knowledge, focus their learning efforts and help them examine their knowledge. The act of arranging questions will focus students' attention on the learning content, main ideas, and help them evaluate whether they have understood the material being studied. Continuous practice can build students' positive self-concept towards their potential. This positive self-concept will help the students to become more independent learners who have high self-efficacy.

After compiling the questions, the lecturer allowed students to respond to the prepared questions. If they were having difficulty answering the question, they could consult a nearby friend to discuss possible proper responses. Answering in RQANI stimulates students' ability to answer questions effectively and efficiently. This phase can improve students' self-efficacy or self-confidence in opinions or arguments that are born from their respective learning experiences. They are trained to have the courage to answer questions both from peers and from the lecturer appropriately. This stage can also improve students' learning outcomes. Low academic self-efficacy will appear in situations that suppress students' emotional condition (Sudirman et al., 2020). It is vital to provide suitable learning settings to promote self-efficacy to develop career orientation in students (Kotova et al., 2021; Sides & Cuevas, 2020) and produce more professional competences (Dos Santos, 2020; Dwiretno & Setyarsih, 2018; Setyaningsih & Sunaryo, 2021). Educators are also required to provide learning resources such as student activity sheets to aid promote thinking orientation (Suhirman et al., 2021).

The next stage in RQANI learning in biology learning assisted students in associating the concepts of the food digestive system material with occurrences that occur in everyday life. They studied the function of carbs, proteins, lipids, vitamins, minerals, water for daily body activity. They also explained probable ailments or digestive disorders that are typically observed on a regular basis. The students then wrote their conclusion of the activity on the Student Worksheet (LKM). Elaboration in RQANI provides an opportunity for students to work in groups to understand material that has been studied, have dialogue and discuss with their group members about difficult materials and solve everyday problems. This stage also trains students' cooperation and empathy skills so that they can improve their performance. Peer support can increase students' self-confidence and motivation, which in turn can increase self-efficacy. Students who initially have low self-concept and self-efficacy can be motivated through support and assistance provided by more capable/expert peers. Peer support can help these students improve their self-concept and learning patterns for the better. Social control and continuous evaluation also need to be done to continuously monitor changes in student behavior towards a positive direction (Sitorus et al., 2019). Collaboration is required in the design of learning to promote student motivation and self-confidence (Anwar et al., 2020).

The following stage is the integration of biology studies with the Qur'an and Hadith values. The students in this study discussed the concept of food intake in Islam, the process of food metabolism in the body, body detoxification through fasting, various causes of digestive disorders, preventative measures for disease/digestive disorders, and

the relationship between health and tawakal and qonaah (gratitude). These students had been urged to install the Al-Quran application and its translation on their own mobile phones to assist with this stage. The students were then instructed to jot down Qur'anic verses and their associated interpretations on the accompanying Student Worksheet (LKM). This activity was carried out in groups. *Integration* in RQANI provides an opportunity for students to discuss with their peers about how to integrate biology concepts and the holy verses of the Al-Quran and Al-Hadith. Through the integration of learning with the holy verses of Al-Quran and Al-Hadith, this phase teaches students that every concept in Biology is contextually related to everyday life. The following is an illustration of the integration results obtained by one of the groups in biology education that used the RQANI model.

"Biology is a branch of science that studies organisms, life and the environment around them. Al-Qur'an and Al-Hadith contain a complete and perfect system that covers all aspects of human life, including scientific activities or scientific investigations. One of the physiology that occurs in the body is the food process. Allah SWT makes it easy for humans to obtain energy intake from food they eat, whereas plants carry out the photosynthesis process. Meanwhile, herbivorous animals obtain energy by consuming plants, carnivorous animals obtain energy by consuming meat and omnivorous animals consume plants and animals to survive. In the Al-Qur'an, humans have been instructed to choose good food (Q.S Al-Baqarah verse 168, Q.S Yunus verse 59, Q.S Luqman verse 20, Q.S Al-Maidah verse 5; H.R Ahmad). The integration of biology learning with Islamic values can increase gratitude for all of Allah's creation. Biology learning is essentially a bridge to religious truth. It supports the understanding of the Al-Quran verses, especially those related to the greatness of Allah SWT that exist in nature and in living creatures, including humans (Ridwan, Adnan, & Bahri, 2018)."

CONCLUSION

The development of a learning model through the Plomp procedures conducted in this study resulted in a new learning model called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). RQANI consists of five learning phases namely Reading, Questioning, Answering, Elaboration and Integration. The validity of the RQANI prototype was very high with an average value of 3.74. The RQANI learning model was considered fairly practical and effective in improving student's learning outcomes and positive responses. As a result, the RQANI model has satisfied the validity, practicability, and effectiveness criteria for a high-quality learning model.

It is hoped that this study can provide a reference for lecturers of biology education and lecturers of other subjects to implement RQANI in the classroom as an effort to improve the quality of the integrated science-Islamic values. The results of this study can also provide insights for teachers in SMP/MTs and SMA /MA about the

effectiveness of the RQANI learning model in improving the quality of learning and in creating a learning atmosphere that is more conducive, innovative and integrative.

Despite the significance of the findings, we acknowledge a limitation to the study. The tryout conducted at the Test, Evaluation and Revision phase was only limited to four-meeting lessons due to the Covid-19 outbreak. Therefore, future studies may need to involve a quasi experimental design to examine the effect of RQANI on science process skills, critical thinking skills, metacognitive skills, argumentation skills, communication skills and scientific literacy skills of students with different academic abilities, different gender and different ethnic backgrounds.

The development of the RQANI model has the potential to significantly improve the quality of science education, particularly in biology, by incorporating Islamic principles. This form of education can assist students in merging the relationship between what they have learned and what they already know from daily experience, as well as their integration with Islamic principles. This can have a good effect on students' character development and self-efficacy, as well as their active participation in school activities. Students who pass on positive beliefs about the ability to investigate, elaborate, integrate, reflect, and condition spiritually can benefit from this. All of these abilities can be developed into life skills for learners as they prepare to tackle the challenges of learning in a globalized, comprehensive digital era.

ACKNOWLEDGEMENTS

This study was financially supported by the State University Operational Assistance Funds (BOPTN), Budget Implementation List (DIPA), IAIN Ternate in 2020, the Ministry of Religious Affairs, Indonesia based on the contract No: B-053/C1/TL.06/01/2020.

REFERENCE

- Adegboyega, L. O. (2018). Influence of Achievement Motivation on Nigerian Undergraduates' Attitude towards Examination. *International Journal of Instruction*, 11(1), 77–88. <https://doi.org/10.12973/iji.2018.1116a>
- Ali, N. (2020). Integrating Science and Religion in the Curriculum of Indonesian Islamic Higher Education: A Case Study of UIN Malang. *International Journal of Innovation, Creativity and Change*, 13(9), 948–960.
- Anshori, I. (2021). Problem-Based Learning Remodelling Using Islamic Values Integration and Sociological Research in Madrasas. *International Journal of Instruction*, 14(2), 421–442. <https://doi.org/10.29333/iji.2021.14224a>
- Anwar, K., Asari, S., Husniah, R., & Asmara, C. H. (2020). Students' Perceptions of Collaborative Team Teaching and Student Achievement Motivation. *International Journal of Instruction*, 14(1), 325–344.

<https://doi.org/10.29333/IJI.2021.14119A>

- Ardianto, D., & Rubini, B. (2016). Comparison of Students' Scientific Literacy in Integrated Science Learning through Model of Guided Discovery and Problem Based Learning. *Jurnal Pendidikan IPA Indonesia*, 5(1), 31–37. <https://doi.org/10.15294/jpii.v5i1.5786>
- Baba, S. Bin, Salleh, M. J., Zayed, T. M., & Harris, R. (2016). A Qur'anic Methodology for Integrating Knowledge and Education: Implications for Malaysia's Islamic Education Strategy. *American Journal of Islamic Social Sciences*, 32(2), 1–30. <https://doi.org/10.35632/ajiss.v32i2.262>
- Badlisyah, T., & Munawwarah, W. (2018). Pengembangan Modul Pembelajaran Kimia Materi Struktur Atom Berbasis Al-Quran Di SMAN 1 Aceh Barat Daya. *Lantanda Journal*, 5(2), 93–196. <https://doi.org/10.22373/lj.v5i2.2835>
- Berkowitz, M. W., & Bier, M. C. (2005). What Works in Character Education: A Research-Driven Guide for Educators. In *Washington DC: University of Missouri-St Louis*.
- Demina, D., Effendi, Z. M., Ananda, A., & Damansyah, D. (2019). Application of Integrated Learning Model on Islamic Education in Improving Students Self Control in Madrasah Ibtidaiyah. *Advances in Social Science, Education and Humanities Research*, 178, 65–70. <https://doi.org/10.2991/icoie-18.2019.16>
- Dos Santos, L. M. (2020). Self-Efficacy and Career Decision of Pre-Service Secondary School Teachers: A Phenomenological Analysis. *International Journal of Instruction*, 14(1), 521–536. <https://doi.org/10.29333/IJI.2021.14131A>
- Dwiretno, G., & Setyarsih, W. (2018). Pembelajaran Fisika Menggunakan Model Argumet Driven Inquiry (ADI) Untuk Melatihkan Kemampuan Argumentasi Ilmiah Peserta Didik. *Inovasi Pendidikan Fisika*, 7(2), 337–340.
- Farihah, U., & Septiadi, D. D. (2019). The Development of Natural Science Learning Material Integrated with Islamic Values to Attract Santris' Interest in Learning the Human Digestive System. *IOP Conference Series: Earth and Environmental Science*, 243(1). <https://doi.org/10.1088/1755-1315/243/1/012049>
- Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. (2017). Improving Junior High Schools' Critical Thinking Skills Based on Test Three Different Models of Learning. *International Journal of Instruction*, 10(1), 101–116. <https://doi.org/10.12973/iji.2017.1017a>
- Hakim, L. (2012). Nilai-Nilai Islam, Sikap dan Perilaku Siswa Sekolah Dasar Islam Terpadu Al-Muttaqin Kota Tasikmalaya. *Jurnal Pendidikan Agama Islam-Ta'lim*, 10(1), 67–77. http://jurnal.upi.edu/file/5_Penanaman_Nilai.pdf%0Ahttps://media.neliti.com/media/publications/108820-ID-penerapan-strategi-pembelajaran-kreatif.pdf
- Hikmawati, V. Y., & Taufik, L. M. (2017). Urgensi Strategi Membaca pada

- Pembelajaran Biologi Masa Depan. *Bio Educatio*, 2(2), 40–48.
- Ibrahim, Yusoff, N., Awang, M. I., & Marwan. (2018). Learning of Reproduction System with an Integrative Curriculum Approach in Junior High School. *Journal of Physics: Conference Series*, 1088(012013), 1–7. <https://doi.org/10.1088/1742-6596/1088/1/012013>
- Jacobsen, D., & Jacobsen, R. H. (2018). Faith and Learning in a Post-Truth World. *Journal of College and Character*, 19(2), 93–100. <https://doi.org/10.1080/2194587x.2018.1445645>
- Kasim, T. S. A. T., & Yusoff, Y. M. (2014). Active Teaching Methods: Personal Experience of Integrating Spiritual and Moral Values. *Religious Education*, 109(5), 554–570. <https://doi.org/10.1080/00344087.2014.956560>
- Khasanah, N., Sajidan, S., Sutarno, S., & Baskoro, B. (2017). Influence Integrated Science Model and Implamantation Learning with the Unity of Science in Basic Biology Course to Increase Critical Thinking. *International Journal of Science and Applied Science: Conference Series*, 1(2), 131–136. <https://doi.org/10.20961/ijscs.v1i2.5136>
- Kosasih, A., Rizal, A. syamsul, & Asyafah, A. (2020). Values' Education Model for Islamic Education Institutions in Indonesia: A Study of Al-Basyariyah Modern Islamic School. *Multicultural Education*, 6(1), 88–104. <https://doi.org/10.5281/zenodo.3827732>
- Kosim, M., Samad, D., Nasution, I., Kustati, M., Rivauzi, A., & Anidar, J. (2020). Cadre Model Inspirative Based on Islamic Parenting and Minangkabau Local Wisdom. *Advances in Social Science, Education, and Humanities Research*, 458, 354–362. <https://doi.org/10.2991/assehr.k.200803.044>
- Kotova, S., Hasanova, I., Sadovnikova, N., Komarov, E., & Wenbin, L. (2021). Self-Efficacy as a Personality Predictor of the Career Orientations of College Students. *International Journal of Instruction*, 14(4), 1047–1064. <https://doi.org/10.29333/iji.2021.14460a>
- Kudari, J. M. (2016). Survey on the Factors Influences the Students' Academic Performance. *International Journal of Emerging Research in Management & Technology*, 5(6), 2278–9359.
- Lang, M., & Olson, J. (2000). Integrated Science Teaching as a Challenge for Teachers to Develop New Conceptual Structures. *Research in Science Education*, 30(2), 213–224. <https://doi.org/10.1007/BF02461629>
- Listyono, Supardi, K. I., Hindarto, N., & Ridlo, S. (2018). Methods of Integrating Islamic Values in Teaching Biology for Shaping Attitude and Character. *Journal of Physics: Conference Series*, 983(1). <https://doi.org/10.1088/1742-6596/983/1/012178>
- Lubis, M. A. (2015). Effective Implementation of the Integrated Islamic Education.

- Global Journal Al-Thaqafah*, 5(1), 59–68.
<https://doi.org/10.7187/GJAT792015.05.01>
- Munifah, K., Hamida, U., Firmansyah, M., Huda, S., Muawanah, A., & Irwandani, R. (2020). Discipline and Student Achievement Based on the Management of Islamic Education Systems. *Utopia y Praxis Latinoamericana*, 25(6), 388–403.
<https://doi.org/10.5281/zenodo.3987647>
- Mustami, M. K., Suyuti, M., & Maryam. (2017). Validasi, Kepraktisan, dan Efektivitas Perangkat Pembelajaran Biologi Integrasi Spiritual Islam. In *Jurnal Al-Qalam* (Vol. 23, Issue 1, pp. 70–77).
- Narmaditya, B. S., Wulandari, D., & Sakarji, S. R. B. (2018). Does Problem-Based Learning Improve Critical Thinking Skills? *Cakrawala Pendidikan*, 37(3), 378–388.
- Plomp, T. (2007). Educational Design Research: an Introduction. In *Netherlands Institute for Curriculum Development: SLO*.
<http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=EJ815766>
- Priatna, T. (2019). The Impact of Integration of Islamic Learning and Science through Virtual Mechatronics Approach to Student Learning Outcomes at UIN Sunan Gunung Djati Bandung, West Java, Indonesia. *International Journal of Environmental and Science Education*, 14(8), 479–491.
http://www.ijese.net/makale_indir/IJESE_2138_article_5d9203622857b.pdf
- Purwanto, B. E., Jatmiko, A., Pahrudin, A., Munifah, Wardhani, S., Purnama, S., & Joemsittiprasert, W. (2020). The Implementation of Cooperative Learning to Developed Management of Language Learning System. *Journal for the Education of Gifted Young Scientists*, 8(1), 379–392.
<https://doi.org/10.17478/jegys.675251>
- Purwati, N., Zubaidah, S., Corebima, A. D., & Mahanal, S. (2018). Increasing Islamic Junior High School Students Learning Outcomes through Integration of Science Learning and Islamic Values. *International Journal of Instruction*, 11(4), 841–854. <https://doi.org/10.12973/iji.2018.11453a>
- Rahardjanto, A., & Susilowati, R. (2018). *Study of Learning Strategy Integration of Science and Religion on the Development of Student Character*. 231, 645–648.
<https://doi.org/10.2991/amca-18.2018.178>
- Ranti, S., & Usmeldi. (2019). Development of Integrated Science Student's Worksheet (LKPD) Based on Research-Based Learning Integrated with Religion Value. *Journal of Physics: Conference Series*, 1185(1). <https://doi.org/10.1088/1742-6596/1185/1/012143>
- Salam, M., Jafar, & Prajono, R. (2020). Effectiveness of Integrative Learning Models in Improving Understanding of Mathematical Concepts. *Journal for the Education of Gifted Young Scientists*, 8(3), 1005–1014.

- <https://doi.org/10.17478/jegys.666875>
- Setyaningsih, S., & Sunaryo, W. (2021). Optimizing Transformational Leadership Strengthening, Self Efficacy, and Job Satisfaction to Increase Teacher Commitment. *International Journal of Instruction*, 14(4), 427–438. <https://doi.org/10.29333/iji.2021.14425a>
- Sholichah, A. S. (2018). Teori-Teori Pendidikan dalam Al-Qur'an. *Edukasi Islami : Jurnal Pendidikan Islam*, 7(1), 23–46. <https://doi.org/10.30868/ei.v7i01.209>
- Sides, J. D., & Cuevas, J. A. (2020). Effect of Goal Setting for Motivation, Self-Efficacy, and Performance in Elementary Mathematics. *International Journal of Instruction*, 13(4), 1–16. <https://doi.org/10.29333/iji.2020.1341a>
- Sintia, N., & Violita. (2020). The Validity of the Development of Integrated Islam and Science Learning Module Completed with a Concept Map for Integrated Islamic Junior High School. *International Journals of Sciences and High Technologies*, 24(1), 234–239.
- Sitorus, D. S., Siswandari, & Kristiani. (2019). The Effectiveness of Accounting E-Module Integrated with Character Value to Improve Students' Learning Outcomes and Honesty. *Cakrawala Pendidikan*, 38(1), 120–129. <https://doi.org/10.21831/cp.v38i1.20878>
- Sriatun, Linuwih, S., Sulhadi, & Aninditya. (2018). *Development of Physics Learning Tools Contains Integration of Qur'an Values*. 247(Iset), 484–488. <https://doi.org/10.2991/iset-18.2018.97>
- Sudirman, S. A., Nurmandi, A., & Bashori, K. (2020). English Writing Skills through Perception of Siri' Cultural Values: Optimism, Social Support, and Academic Self-Efficacy. *Cakrawala Pendidikan*, 39(2), 242–256. <https://doi.org/10.21831/cp.v39i2.26118>
- Suhirman, S., Prayogi, S., & Asy'ari, M. (2021). Problem-Based Learning with Character-Emphasis and Naturalist Intelligence: Examining Students Critical Thinking and Curiosity. *International Journal of Instruction*, 14(2), 217–232. <https://doi.org/10.29333/iji.2021.14213a>
- Sulayman, H. I. (2014). Values-Based Curriculum Model: A Practical Application of Integrated 'Maqasid Al-Sharia' for Wholeness Development of Mankind. *Procedia - Social and Behavioral Sciences*, 123, 477–484. <https://doi.org/10.1016/j.sbspro.2014.01.1447>
- Sunhaji. (2018). The Integration of Science-Technology and Living Environment through Islam Religion Education Learning at Adiwiyata-Based Junior High School in Banyumas Regency. *Dinamika Ilmu*, 18(2), 179–193. <https://doi.org/10.21093/di.v18i2.1179>
- Suroso, C. P., Hassan, M. B. A., Bin Mohamed, S., Sulistyanto, D., & Ngatiyono. (2018). Quranic Based Learning Approach to Internalise Islamic Values for

- Effective Mathematic Teaching and Learning: A Review. *Opcion*, 34(85), 1187–1197.
- Suryaningsih, Y. (2015). Penerapan Pembelajaran Biologi Berbasis Al-Qur'an Sebagai Metode untuk Pembentukan Karakter Siswa. *Jurnal Bio Educatio*, 3(1), 22–33. <https://doi.org/10.15642/teosofi.2012.2.2.314-330>
- Syarif. (2020). Building Plurality and Unity for Various Religions in the Digital Era: Establishing Islamic Values for Indonesian Students. *Journal of Social Studies Education Research*, 11(2), 111–119.
- Tambak, S., & Sukenti, D. (2020). Strengthening Islamic behavior and Islamic psychosocial in Developing Professional Madrasah Teachers. *Cakrawala Pendidikan*, 39(1), 65–78. <https://doi.org/10.21831/cp.v39i1.26001>
- Wei, B. (2020). An Exploratory Study of Teacher Development in the Implementation of Integrated Science Curriculum. *Research in Science Education*, 50(6), 2189–2206. <https://doi.org/10.1007/s11165-018-9768-x>
- Winarno, N., Rusdiana, D., Riandi, R., Susilowati, E., & Afifah, R. M. A. (2020). Implementation of Integrated Science Curriculum: A Critical Review of the Literature. *Journal for the Education of Gifted Young Scientists*, 8(2), 795–817. <https://doi.org/10.17478/jegys.675722>
- Winarso, W., & Wahid, S. (2020). Development of Mathematics Teaching Device Integrated with Quranic Values: Issues, Challenges, and Implementation Model. *International Journal of Learning, Teaching and Educational Research*, 19(1), 95–117. <https://doi.org/10.26803/ijlter.19.1.6>
- Yusuf, I. R., Ukit, & Paujiah, E. (2018). Pengaruh Integrasi Nilai-Nilai Islam Melalui Pendekatan Iman dan Taqwa (Imtaq) pada Hasil Belajar Sistem Reproduksi Manusia di MAN 2 Kota Bandung. *Bioilmi: Jurnal Pendidikan*, 4(2), 45–52. <https://doi.org/10.19109/bioilmi.v4i2.2875>

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values in Biology Learning

ORIGINALITY REPORT

15%

SIMILARITY INDEX

12%

INTERNET SOURCES

8%

PUBLICATIONS

0%

STUDENT PAPERS

PRIMARY SOURCES

1	eric.ed.gov Internet Source	2%
2	moam.info Internet Source	1%
3	journal2.um.ac.id Internet Source	1%
4	repository.unikama.ac.id Internet Source	1%
5	repository.uinmataram.ac.id Internet Source	1%
6	journal.uad.ac.id Internet Source	1%
7	repository.uinsu.ac.id Internet Source	<1%
8	Sitti Saenab, Siti Zubaidah, Susriyati Mahanal, Sri Rahayu Lestari. "ReCODE to Re-Code: An Instructional Model to Accelerate Students'	<1%

Critical Thinking Skills", Education Sciences, 2020

Publication

9

bcsdjournals.com

Internet Source

<1 %

10

journal.uin-alauddin.ac.id

Internet Source

<1 %

11

Astuti Muh. Amin, Romi Adiansyah.
"Identification of preservice biology teachers'
metacognitive awareness and metacognitive
skills", Journal of Physics: Conference Series,
2020

Publication

<1 %

12

-, Warli, and Mu'jizatin Fadiana. "Math
Learning Model that Accommodates Cognitive
Style to Build Problem-Solving Skills", Higher
Education Studies, 2015.

Publication

<1 %

13

Tenri Sau, Gufran Darma Dirawan, Ahmad
Rifqi Asrib. "Applied of Alternative Business
Training Models through Environmental-
Based Community Empowerment for Farmer
Labor", Asian Journal of Applied Sciences,
2021

Publication

<1 %

14

dergipark.org.tr

Internet Source

<1 %

15	ejournal.umm.ac.id Internet Source	<1 %
16	pasca.um.ac.id Internet Source	<1 %
17	Irham*, Ismail, Ismail Tolla, Baso Baso. "Development of the 4C Teaching Model to Improve Students' Mathematical Critical Thinking Skills", International Journal of Educational Methodology, 2022 Publication	<1 %
18	ejournal.radenintan.ac.id Internet Source	<1 %
19	Arsad Bahri, Irma Suryani Idris. "Development and Validation of Learning Strategy for Metacognitive Skills Empowerment: PBLRQA (PBL integrated with Reading, Questioning, and Answering)", Journal of Physics: Conference Series, 2018 Publication	<1 %
20	Sheren Dwi Oktaria, Rambat Nur Sasongko, Muhammad Kristiawan. "Development of Blended Learning Designs using Moodle to Support Academics of The Curriculum in University of Bengkulu", Jurnal Studi Guru dan Pembelajaran, 2021 Publication	<1 %

21 Tukiyo Tukiyo, Purwo Haryono, Syamsul Arifin, Ari Kartiko, Fahlulia Rahma Shofiana. "Improving Multiliteracy Ability in the Integration of Islamic and Science Learning", AL-ISHLAH: Jurnal Pendidikan, 2022
Publication

22 media.neliti.com
Internet Source

23 "South Kalimantan Local Wisdom-Based Biology Learning Model", European Journal of Educational Research, 2020
Publication

24 A D Puspitasari, Suratno, Yushardi. "Analysis the development of sprider learning models to improve student's critical thinking skills in natural science learning junior high school", Journal of Physics: Conference Series, 2021
Publication

25 H Setiawan, A Fauzan, I M Arnawa. "The Development of Geometrical Learning Devices Based On Rumah Gadang Ethnomathematics for Grade VII Junior High School", Journal of Physics: Conference Series, 2021
Publication

26 Rose Abdullah, Abdul Ghafar Ismail. "Taking stock of the waqf-based Islamic microfinance

model", International Journal of Social
Economics, 2017

Publication

27

Submitted to Universitas Siswa Bangsa
Internasional

Student Paper

<1 %

28

Douglas Jacobsen, Rhonda Hustedt Jacobsen.
"Faith and Learning in a Post-Truth World",
Journal of College and Character, 2018

Publication

<1 %

29

Listyono, K I Supardi, N Hindarto, S Ridlo.
"Methods of integrating Islamic values in
teaching biology for shaping attitude and
character", Journal of Physics: Conference
Series, 2018

Publication

<1 %

30

www.ijese.net

Internet Source

<1 %

31

RAZ El Islami, I J Sari, S Sjaifuddin, M Nurtanto,
M Ramli, A Siregar. "An Assessment of Pre-
service Biology Teachers on Student
Worksheets Based on Scientific Literacy",
Journal of Physics: Conference Series, 2019

Publication

<1 %

32

pegegog.net

Internet Source

<1 %

33

www.ncbi.nlm.nih.gov

<1 %

34

إيمان عبد الفتاح محمود درويش درويش. "Skills of Dealing with the Edmodo Environment through Electronic Active Learning Strategies for General Education Teachers", مجلة البحوث في مجالات التربية النوعية, 2022

Publication

<1 %

35

Domenico Minervini, Marc Brughmans. "Efficient Conceptual Tire Model and Parameter Identification for NVH Applications", SAE International, 2021

Publication

<1 %

36

Fitri Zuhriatun Nafidiah, Parno Parno, Isnani Juni Fitriyah, Indra Fardhani, Safwatun Nida, Ribut Suprihatin. "Development of digital game-based learning based PBL-STEM to stimulate scientific literacy of junior high school students in climate change analyzing activities", AIP Publishing, 2023

Publication

<1 %

37

Sigit Dwi Saputro, Tukiran Tukiran, Zainal Arifin Imam Supardi. "Design clarity learning model to improve advanced clarification ability on physics courses", Cypriot Journal of Educational Sciences, 2022

Publication

<1 %

38	doaj.org Internet Source	<1 %
39	e-journal.staima-alhikam.ac.id Internet Source	<1 %
40	eprints.umm.ac.id Internet Source	<1 %
41	ojs.unm.ac.id Internet Source	<1 %
42	www.atlantis-press.com Internet Source	<1 %
43	china.iopscience.iop.org Internet Source	<1 %
44	journal.uir.ac.id Internet Source	<1 %
45	journal.unesa.ac.id Internet Source	<1 %
46	journal.uny.ac.id Internet Source	<1 %
47	library.oapen.org Internet Source	<1 %
48	repository.fe.unj.ac.id Internet Source	<1 %
49	"Regional Conference on Science, Technology and Social Sciences (RCSTSS 2014)", Springer	<1 %

50

Adri Lundeto, Ishak Talibo, Shinta Nento. "Challenges and Learning Strategies of Islamic Education in Islamic Boarding Schools in the Industrial Revolution Era 4.0", AL-ISHLAH: Jurnal Pendidikan, 2021

Publication

<1 %

51

Ahmad Naharuddin Ramadhan, Siti Irene Astuti Dwiningrum, Bustami Subhan. "Potensi Integrasi Pembelajaran Biologi dengan Pembelajaran Quran-Hadis", AL QUDS : Jurnal Studi Alquran dan Hadis, 2021

Publication

<1 %

52

C Chotimah, Festiyed. "Validity and practicality of worksheet assisted by PhET interactive simulations to improve students creative thinking skills in a research based learning model", Journal of Physics: Conference Series, 2021

Publication

<1 %

53

F Febryanti, H Ahmad, Nurhasanah, A Kamaruddin. "Effectiveness of model numbered head type integrated structure of islamic value against understanding mathematical concept ability", Journal of Physics: Conference Series, 2020

Publication

<1 %

54 Hunaidah Hunaidah, Endang Susantin, Wasis Wasis. "The CinQASE Model: Design to Practice Individual & Collaborative Critical Thinking Skill in Learning", AL-ISHLAH: Jurnal Pendidikan, 2022
Publication

55 Pramudya Dwi Aristya Putra, Nurul Fitriyah Sulaeman, Supeno, Sri Wahyuni. "Exploring Students' Critical Thinking Skills Using the Engineering Design Process in a Physics Classroom", The Asia-Pacific Education Researcher, 2021
Publication

56 Ulfa Tenri Batari, Achmad Tolla, Muhammad Rafi Tang, Anshari Anshari. "Development of Teaching Materials Based on Indonesian Folktale in Gowa District", Journal of Language Teaching and Research, 2015
Publication

57 ejournal.undiksha.ac.id
Internet Source

58 journal.stkipsingkawang.ac.id
Internet Source

59 jppipa.unram.ac.id
Internet Source

60 researchspace.ukzn.ac.za
Internet Source

61	www.sciedupress.com Internet Source	<1 %
62	www.scientiasocialis.it Internet Source	<1 %
63	online-journal.unja.ac.id Internet Source	<1 %
64	Nurmadiyah, Ismail Tolla, Baso Jabu. "Design of Contextual Teaching and Learning (CTL) Model to Improve Student's Life Skills: The Development Phase in Research and Development", Asian Journal of Applied Sciences, 2022 Publication	<1 %
65	digilib.uin-suka.ac.id Internet Source	<1 %

Exclude quotes On

Exclude matches Off

Exclude bibliography On



International Journal of Instruction Article Evaluation Form

Mr. /Mrs.

It is to acknowledge you that the Executive Committee of *International Journal of Instruction* has decided that the article mentioned below would be reviewed by you. Thank you very much for your contributions.

Asim ARI
Editor in Chief

Name of the article: RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

After reviewing the attached article, please read each item carefully and select the response that best reflects your opinion. To register your response, please **mark** or **type in** the appropriate block.

	Yes	Partially	No
Do you think the title is appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the abstract summarize the article clearly and effectively?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the objectives set clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the issue stated clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the literature review adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the design of the research appropriate, and the exemplary, if any, suitable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the methodology consistent with the practice?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the findings expressed clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the presentation of the findings adequate and consistent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the tables, if any, arranged well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the conclusions and generalizations based on the findings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the suggestions meaningful, valid, and based on the findings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the references adequate?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the language clear and understandable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is cohesion achieved throughout the article?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the work contributing to the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Evaluation:**
- The article can be published as it is.
 - The article can be published after some revision.
 - The article must undergo a major revision before it can be resubmitted to the journal.
 - The article cannot be published.

Would you like to see the revised article if you have suggested any revisions? Yes No

Please write your report either on this paper or on a spare paper.

REPORT

Section of the Manuscript	Comments and Notes
Title- Abstract-Summary	avoid the theory and must represent the writing
Introduction and Literature Review	need more relevant theory of RQANI/ similar method
Research Methods	need explanation about how researcher conducts the research
Research Findings	enough

Discussion	need to explain more about the integration (RQANI) practically and contextually.
Conclusion and Suggestions	need to revise after revision.
References and Citation	use automatic reference and citation program such as mendeley.
Language	need proof reader
Other issues	-

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

The integration of Islamic values into science learning should be supported by an effective learning model. A preliminary study showed that Biology learning in the classroom could not encourage the integration of science concepts and Islamic values. The current study was designed as a Research and Development study that used the Plomp model (2007), consisting of the following stages: preliminary investigation, design, realization or construction and test, evaluation and revision. The data of this study were collected in the form of (1) descriptive data on the results of the learning model's development; (2) descriptive data on the validity, practicality and effectiveness of the learning model. The validity of the model was examined by experts and practitioners using validation sheets. The model practicality was evaluated using learning implementation sheets. The effectiveness of the model was determined through (1) achievement tests; (2) a questionnaire survey. Through the Plomp's development procedure, this study successfully generated a new learning model, called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). Learning in RQANI is conducted in five phases, namely Reading, Questioning, Answering, Elaboration and Integration. The results of the study also proved that RQANI was valid, practical and effective.

Keywords: Islamic Values, Learning Model, RQANI, Science

INTRODUCTION

The integration of Islamic values into science learning must be supported by an effective learning approach or model (Lubis, 2015, Anshori, 2021). Scientific truth does not only refer to evidence-based reasons but also results from questions about identity, meaning, purpose and beliefs (Jacobsen & Jacobsen, 2018). The scientific characteristics of biology learning include products, processes, attitudes, technology, and strategic tools to develop various aspects of learning (cognitive, affective, and psychomotor) which are very important in shaping students' character and morals. In achieving its ultimate goals, the Islamic education system integrates and harmonizes the interests of the world and the interests of the hereafter (QS Al-Qashash, 77). Integration is the keyword guaranteeing that there is no separation between religion and science (Mustami, Suyuti, & Maryam, 2017). Integrated learning has been proven able to train students' critical thinking skills and build their systematic knowledge (Salam, Jafar, & Prajono, 2020). Effective integrated learning can also improve students' learning skills (Winarno et al., 2020).

Learning that integrates Islamic values is able to develop students' thinking skills holistically (Purwati et al., 2018; Sriatun et al., 2018; Sunhaji, 2016). Islamic values in science have the potential to help students acquire attitudes, develop character, understand their strengths and weaknesses, and recognize the truth in everyday life in society (Listyono et al., 2018). Strengthening values-based teaching is able to gradually build a strong moral foundation that plays an important role in influencing current and

Commented [MOU1]: Avoid theory. Consider that you have made an informative summary including objectives, methods, scope, results and conclusions

2 RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

future decision-making and attitudes (Sulayman, 2014; Tambak & Sukenti, 2020). Integrated science learning using a guided discovery model and problem-based learning has been proven able to improve students' scientific literacy (Ardianto & Rubini, 2016; Narmaditya, Wulandari, & Sakarji, 2018). Integrated learning can shape the concept of science teaching and increase collaboration between educators and students (Wei, 2018; Lang & Olson, 2000).

The benefits obtained from developing a learning model that integrates science and religion include increasing students' understanding of religion, deepening students' value-based knowledge, increasing the implementation of science practices in daily life, developing students' character (Farihah & Septiadi, 2019; Rahadjanto & Susilowati, 2018; Suryaningsih, 2018; Adegboyega, 2018), developing students' competence, moral values and responsibility (Rianti & Usmeldi, 2019), and providing more meaningful learning experiences (Yusup, Ukit & Paujjiah, 2018). Character building through the integration of science with Islamic values can help students maintain responsibility for learning and develop ethics in the classroom (Berkowitz & Bier, 2005).

The principles taught in the Qur'an serve as a reference for producing theory and developing learning (Sholichah, 2018). In fact, it is difficult to implement a teaching and learning process that can instill religious values in students and that can connect science and religion (Badlisyah & Wahyu, 2017). Learning often runs independently and is not integrated with religious values, because it is often assumed that religion is only limited to religious practices. The non-contextual teaching and learning process will hinder the development of students' ability to think holistically and make it difficult for them to relate the concepts they learn in the classroom to their daily life as a Muslim (Khasanah et al., 2017; Sunhaji, 2018). As a result, students are not given the opportunity to experience learning in real-world contexts.

The results of observations and interviews with Biology students from IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar in South Sulawesi, Indonesia revealed that Biology classrooms rarely integrated Islamic values effectively. The biological concepts taught in the universities were focused more on the cognitive domain. In addition, the theories were presented through abstract and dense materials that were difficult for the students to understand. The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation (Priatna, 2019) in Islam. The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5).

Commented [MOU2]: Correct this

Commented [MOU3]: Explain the concept

Based on the explanation, research findings, and past studies presented above, it can be assumed that the development of a learning model that can integrate Islamic values into the concepts of science is necessary. The learning model developed should be able to connect concepts in Biology with the holy verses of Al-Qur'an and Al-Hadith. The

problems in this study were formulated into (1) How can a new integrated learning model be generated using the Plomp's development procedures? (2) How valid, practical and effective is the model in terms of its implementation in the classroom? It is expected that the results of this study can provide insights and information about the effectiveness of an integrated learning model with Islamic values in improving students' character, especially in facing the 21st century global challenges.

Commented [MOU4]: clarify research hypothesis

METHOD

Research Goal

The current study was designed as a Research and Development (R&D) study. The procedures for developing the prototype were adopted from Plomp (2017), consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision.

Commented [MOU5]: What is the theoretical research design you followed? How do you conduct Rn D research?

Sample and Data Collection

The population of the study consisted of all students from the Department of Biology Education at IAIN Ternate, North Maluku, Indonesia; STKIP KIE Raha Ternate, North Maluku, Indonesia; and UIN Alauddin Makassar in South Sulawesi, Indonesia. The sample of the study contained (1) 40 students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) 40 students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) 40 students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The sample groups were determined based on the characteristics and number of the students required for every research treatment. All of the sample classes were homogeneous based on the homogeneity test using grouping test data. This study was conducted from January 2020 until July 2020.

Commented [MOU6]: explain what data will be processed

Data Analysis

The data comprised (1) descriptive data about the results of the development of the learning model through the Plomp's model development procedure; (2) descriptive data about the quality of the resulting learning model (validity, practicality, and effectiveness). The validity of the learning model was examined through expert and practitioner assessments with validation sheets. The practicality of the model was examined using learning implementation sheets. The effectiveness of the model was determined through achievement test and survey. The data analysis was carried out in a descriptive quantitative manner by referring to certain criteria. The research procedures are depicted in Figure 1.

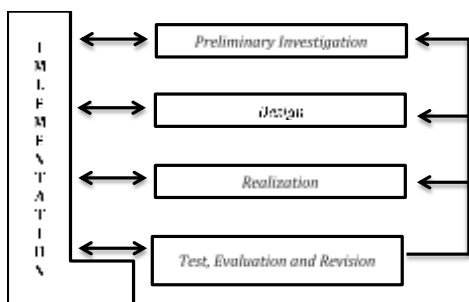


Figure 1
Plomp's Development of Model

Commented [MOU7]: Need to explain contextually

FINDINGS

The Development of RQANI Learning Model through Plomp's Model Development Procedures

Phase-1: Preliminary Investigation

Preliminary investigation suggests that a learning model should be developed to integrate Islamic values into Biology learning at the Department of Biology Education of IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar, South Sulawesi.

Table.1

Preliminary Investigation Results

Aspect	Descriptions		
	PT-A	PT-B	PT-C
Learning Activities	Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.	Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.	50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.
Learning Models	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.
Learning	The lecturers use discussion,	The lecturers use	The lecturers use

Commented [MOU8]: Explain how you investigate the result

Commented [MOU9]: What are they? Use common words, campus A, campus B ...

Aspect	Descriptions		
	PT-A	PT-B	PT-C
methods	lecturing and task-assignment methods to facilitate learning.	discussion, lecturing, task-assignment and student presentation methods to facilitate learning.	discussion, lecturing, task-assignment and investigation methods to facilitate learning.
Learning materials	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.
Learning facility	The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.	The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.	The classroom environment is fine, but not every classroom is equipped with the LCD projector.
Campus facility	The campus has provided the students with a laboratory, libraries and wireless internet connection. However, practicum activities are rarely done in the laboratory, literature on Biology contents is still lacking. The internet connection is good around the rectorate building, faculty and library, but is weak if accessed from the classrooms.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The wi-fi signal is weak if accessed from the classrooms. The laboratory is not equipped with adequate practicum tools and materials. The libraries contain a limited number of books on biology.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The laboratory is equipped with adequate practicum tools and materials. The department libraries, faculty libraries and central library contain an ample supply of books on biology number. The internet connection is good around campus.
Student's cognitive ability	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1) and understanding (C2). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.
Student's learning motivation	The students have poor learning motivation. They get easily bored because learning is dominated by lectures.	The students have poor learning motivation. They are unable to maintain their attention to every learning activity in the classroom.	The students have poor learning motivation. They need to experience learning that can integrate Islamic values and biology contents.
Student's self-efficacy	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.

Commented [MOU9]: What are they? Use common words, campus A, campus B ...

6 RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

Aspect	Descriptions		
	PT-A	PT-B	PT-C
Student's character values	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries and learning environment.	Mostly, they are not certain about their own ideas and thinking process, so they cannot engage actively in the learning process.	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries, learning environment and self development.
Student's active participation in learning	The students cannot engage actively in the learning process; learning activities are mostly dominated by the high achievers.	The students cannot engage actively in the learning process; learning activities are mostly dominated by particular groups of students. Less than 10% of the students are confident in asking and answering questions.	The students have poor character. The students' concern about the campus facility, laboratory, libraries, learning environment needs to be improved.
Student's interest	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology.	The students have low interest in learning biology. They are only attracted to particular themes. As a result, the students cannot optimize their performance in the standard of competence and basic competence set in the curriculum.	Not all of the students can engage actively in the learning process; learning activities are mostly dominated by the high achievers.
Student's responses towards Biology learning at the campus	The students have negative responses and perceptions on biology learning at the campus. They think that biology is dull, non-contextual, difficult to understand and requires memorization.	The students have negative responses towards biology learning at the campus. Stimulation needs to be provided so that the students can feel more comfortable and relaxed in understanding concepts in biology.	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology. The students are in favor of investigative learning.
Challenges faced by students in learning Biology	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge. New learning models should be developed, such as the	The students' positive responses towards biology learning at the campus need to be improved. The students sometimes face difficulty concentrating on the lessons.

Commented [MOU9]: What are they? Use common words, campus A, campus B ...

Aspect	Descriptions		
	PT-A	PT-B	PT-C
		integration of active learning or contextual learning and Islamic values.	

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Phase-2: Design

The RQANI learning model is constructed from the following components: syntax (phases or stages of learning), social system, reaction principles, support system, instructional impacts and accompaniment impacts. The lack of students' initial knowledge indicates that lecturers need to dedicate more effort to stimulate and prepare their students to acquire theories that are needed during the learning process. This is relevant to the design of the RQANI model, of which first phase is reading. There are five learning phases in the RQANI learning model: Reading, Questioning, Answering, Elaboration and Integration.

Phase-3: Realization/Construction

The activity carried out in phase-3 was the realization of the learning model that had been designed in phase-2. Some of the things that were realized at this stage included (a) learning syntax; (b) social system; (c) reaction principles; (d) support system; and (e) instructional impacts. The RQANI design had to undergo expert validation. In this regard, an expert in education, an expert in the integration of biology learning and Islamic values and a field practitioner with relevant experience were invited to assess the RQANI design.

Learning Syntax

There are five learning phases in RQANI: Reading, Questioning, Answering, Elaboration, Integration. Lecturer's activities and student's activities in RQANI are presented in Table 2.

Table 2

RQANI Learning Syntax

Syntax	Learning Activities	
	Lecturer	Student
Phase 1: Reading	1. Lecturer provides students with motivation to learn.	1. Student listens to the delivery of learning motivation from the lecturer.
	2. Lecturer delivers learning objectives.	2. Student listens and records the learning objectives delivered by the lecturer.
	3. Lecturer provides students with the opportunity to read relevant literature/references/textbooks/texts/modules related to the material to be discussed.	3. Student reads relevant literature/references/textbooks/texts/modules related to the material to be

Commented [MOU9]: What are they? Use common words, campus A, campus B ...

Commented [MOU10]: implementation

Commented [MOU11]: how do you integrate the activities with biology? Explain practically concept of RQANI in biology class.

Syntax	Learning Activities	
	Lecturer	Student
		discussed.
Phase 2: Questioning	Lecturer provides opportunities for students to formulate and ask questions related to the material being discussed.	Student formulates and asks questions related to the material being discussed.
Phase 3: Answering	Lecturer provides opportunities for students to answer questions related to the material being discussed.	Student answers questions related to the material being discussed.
Phase 4: Elaboration	Lecturer facilitates students' collaborative work so that they can understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.	Students work in groups to understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.
Phase 5: Integration	<ol style="list-style-type: none"> Lecturer provides opportunities for students to work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Lecturer wraps up the lesson. 	<ol style="list-style-type: none"> Students work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Student pays attention to the lecturer and draws a conclusion from the lesson.

Social System

Social system describes the roles and functions of students, the interaction between the lecturer and students and learning objectives or targets. The RQANI model is a learning model designed to activate students in an elaborate learning process that integrates scientific concepts and the holy verses of the Al-Quran and Al-Hadith. This model provides an opportunity for students to prepare/equip themselves with initial concepts, practice asking high-level questions, answer questions effectively and efficiently, work together in groups to understand the material that has been studied, have dialogue and discuss materials that are difficult to understand with group colleagues, solve every day problems and cooperate with peers or in groups to find the holy verses of Al-Quran and Al-Hadith that are relevant to the material that has been studied. On the other hand, the lecturer acts as a facilitator or a guide who arranges learning so that it can run well. This model is expected to improve student's self-efficacy, character, critical thinking skills, argumentation skills, communication skills, social skills, analytical skills, collaboration skills, elaboration skills, conceptual mastery and other skills needed in the 21st century learning.

Reaction Principles

The RQANI learning model provides opportunities for students to be actively involved in learning. The lecturer will allow the students to develop knowledge, construct understanding, elaborate on existing knowledge and understanding, and integrate that

Commented [MOU13]: how do you integrate the activities with biology?

knowledge and understanding of the Islamic from the Al-Quran and Al-Hadith. The lecturer should facilitate and provide scaffolding if students experience difficulties in learning. The lecturer also have to provide feedback on comments, arguments, questions, answers, conclusions, ideas produced by the students in the classroom. If there is a misconception, the lecturer is obliged to provide clarification of the concept and additional explanation which is supported by strong and logical arguments and relevant references. The two-way interaction between the lecturer and students is expected to increase student's activity and learning autonomy so that they are able to overcome learning problems that have been identified in the previous stage, namely in the initial investigation phase.

Support System

The support system referred to in this study is additional requirements to implement the RQANI model, which includes learning tools and learning resources. Physical requirements can be in the form of RPS, SAP, LKM, lecture dictates and supporting ICT media. Non-physical requirements can be in the form of student psychological condition before conducting learning, lecturer's ability to manage learning in RQANI, good communication between the lecturer and students, and conducive learning atmosphere.

Instructional and Accompaniment Impacts

The instructional impacts of Biology Learning using RQANI are:

- 1) The improvement of student's self-efficacy and character
- 2) The improvement of student's active involvement in learning
- 3) The improvement of student's elaboration and integration skills

The accompaniment impacts of Biology Learning using RQANI include:

- 1) The improvement of student's argumentation and communication skills
- 2) The improvement of student's social skills
- 3) The improvement of student's cooperation and collaboration
- 4) The improvement of student's concept mastery
- 5) The improvement of student's learning autonomy

Phase-4: Test, Evaluation, Revision

The RQANI learning model that had been developed and claimed to be valid was then tested on a limited basis to investigate changes in the character values and self-efficacy of students who took part in the tryout. The tryout was conducted on (1) students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The data from this tryout provided a basis for reflecting on the effectiveness of the RQANI (Reading, Questioning, Answering and Integration) prototype.

Table 3

Commented [MOU14]: how do you integrate the activities with biology?

Commented [MOU15]: how do you integrate the activities with biology?

Commented [MOU16]: Use common words

Commented [MOU17]: How come? You need to elaborate the practical steps of biology learning using RQANI, so there will be causality.

Students' Character Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
Students from PT-A	46.75	78.75	72.60
Students from PT-B	44.41	73.69	68.74
Students from PT-C	41.08	77.24	89.73

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 4

Students' Self-Efficacy Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
Students from PT-A	47.65	75.28	60.73
Students from PT-B	43.37	71.77	67.03
Students from PT-C	43.63	75.78	75.60

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

The Validity, Practicality and Effectiveness of RQANI

The Validity of RQANI

The results of the expert validation on the learning model's syntax are summarized in Table 5.

Table 5

The Validation Results of RQANI Syntax

No	Evaluated Aspect	Mean Score
1.	Rationales for developing the learning model are explicit.	3.67
B Supporting Theories		
2.	The theories used in the model development are relevant to RQANI.	4.00
3.	Piaget's theory supports the development of RQANI.	4.00
4.	Vygotsky's social development theory supports the development of RQANI.	4.00
5.	David Ausubel's learning theory supports the development of RQANI.	4.00
6.	Bruner's theory supports the development of RQANI.	4.00
C Learning Syntax		
7.	The learning stages are arranged coherently and clearly.	4.00
8.	The learning stages are logical and rational.	3.67
9.	The learning stages activities of the lecturer and of the students.	4.00
10.	The description of learning activities at each stage of the learning model reflects the flow of the activities that can be carried out by the lecturer and the students.	4.00
11.	The description of learning activities at each stage of the learning model is oriented towards constructing student knowledge.	3.33
12.	The description of learning activities at each stage of the learning model attracts student's attention.	4.00
13.	The description of learning activities at each stage of the learning model is oriented towards increasing student's learning autonomy.	3.67
14.	The description of learning activities at each stage of the learning model is	4.00

Commented [MOU18]: Use common words

Commented [MOU19]: Use common words

Commented [MOU20]: ?

Commented [MOU21]: Is it expert validation or the result of RQANI? Who is the expert?

No	Evaluated Aspect	Mean Score
	oriented towards increasing student's character.	
15.	The description of learning activities at each stage of the learning model is oriented towards increasing student's self-efficacy.	4.00
16.	The description of learning activities at each stage of the learning model is oriented towards increasing student's active involvement in learning.	4.00
17.	The description of learning activities at each stage of the learning model is oriented towards increasing student's elaboration skills.	3.33
18.	The description of learning activities at each stage of the learning model is oriented towards increasing student's integration skills.	4.00
19.	The description of learning activities at each stage of the learning model is oriented towards increasing student's critical thinking skills.	3.67
20.	The description of learning activities at each stage of the learning model is oriented towards increasing student's argumentation and communication skills.	3.33
21.	The description of learning activities at each stage of the learning model is oriented towards increasing student's social skills.	3.33
22.	The description of learning activities at each stage of the learning model is oriented towards increasing student's cooperative and collaborative skills.	3.67
23.	The description of learning activities at each stage of the learning model is oriented towards increasing student's concept mastery.	3.67
D	Social System	
24.	The description of learning activities at each stage of the learning model shows that there is an interaction between the lecturer and students.	4.00
25.	The relationship pattern between the lecturer and the students demonstrates the lecturer's role as a facilitator and a guide.	4.00
26.	The description of learning activities at each stage of the learning model shows that there is an interaction between students.	4.00
27.	The relationship between the lecturer and student individuals is explicit.	3.33
28.	The relationship between the lecturer and student individuals is clear in discussion.	4.00
E	Reaction Principles	
29.	Lecturer behavior is clearly stated.	3.67
30.	The description of learning activities shows that the lecturer provides learning resources needed by students such as textbooks, online media, etc.	3.67
31.	The description of learning activities shows that the lecturer provides motivation to increase student interest in learning.	4.00
32.	The description of learning activities shows that the lecturer provides a number of activities that stimulate student curiosity.	3.33
33.	The description of learning activities shows that the lecturer encourages students to explore ideas and communicate scientifically.	3.67
34.	The description of learning activities shows that the lecturer gives students the opportunity to ask questions when they have difficulty understanding phenomena and concepts.	3.33
F	Supporting System	
35.	Learning tools are arranged according to the steps of the learning model.	4.00
36.	Learning devices are arranged in accordance with learning objectives that are oriented to increase student's self-efficacy and character.	3.67
G	Instructional and Accompaniment Impacts	
37.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are clearly stated in the RQANI syntax.	3.67
38.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are logically stated in the RQANI syntax.	3.00
39.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) show the goals that are going to be achieved by	3.33

No	Evaluated Aspect	Mean Score
RQANI.		
40.	The accompaniment impacts, which are in the form of critical thinking skills, argumentation and communication skills, social skills, collaboration and collaborative skills, conceptual mastery, learning autonomy, are in accordance with the learning objectives to be achieved.	3.67
H Conclusion		
41.	The quality of the learning model in general	3.67
42.	The feasibility of the learning model based on your opinion	3.67
Mean score		3.74 (Highly Valid)

Based on the validation results of the learning syntax presented in Table 5, it can be concluded that the learning model was highly valid and feasible (3.67).

Commented [MOU22]: Why valid?

The Practicality of RQANI

The practicality of the learning model was examined using the learning implementation sheets. Consistency test that was conducted to measure the implementation of the syntax showed a parallel significance value of 0.341, while the data coincidence obtained a significance value of 0.011. The data parallel level showed a number greater than 0.05, while the data coincidence was smaller than 0.05. These figures suggested that the RQANI learning syntax was parallel but not coincident. Although not coincident, the results of these tests indicated that the learning syntax had been carried out consistently. The consistency test results are shown in Table 6.

Table 6
Consistency Test Results of RQANI

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34024.645	3	11341.548	688.487	0.000
	b1, b2	15.055	1	15.055	0.914	0.341
	b1, b2, b3	154.999	2	77.500	4.705	0.011
	Residual	1910.884	116	16.473		
Total		35935.529	119			

The Effectiveness of RQANI

The effectiveness of RQANI was measured based on (1) the students' test scores and (1) the students' questionnaire responses. The students' test results after the implementation of RQANI are summarized in Table 7.

Table.7
Recapitulation of Student's Learning Achievement

	PT-A	PT-B	PT-C
Highest score	93	90	98
Lowest score	82	80	86
Score range	11	10	12
Mean score	85.25	83.19	89.22

Commented [MOU23]: Use common words

	PT-A	PT-B	PT-C
Test Completion	100	100	100

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

The students' responses towards RQANI learning model are presented in Table 8.

Table 8
Summary of Students' Responses towards RQANI

No	Statement	University			Mean score	Inter-achievement
		PT-A (%)	PT-B (%)	PT-C (%)		
1	For me, learning using RQANI is interesting.	94.44	94.44	97.22	95.37	Very good
2	For me, learning using RQANI is fun.	88.89	91.67	94.44	91.67	Very good
3	RQANI helps me follow the lesson well.	86.11	86.11	88.89	87.04	Very good
4	RQANI helps me improve my learning motivation.	88.89	88.89	91.67	89.81	Very good
5	RQANI helps me improve my collaboration skills.	88.89	94.44	94.44	92.59	Very good
6	RQANI helps me improve my learning autonomy.	83.33	86.11	88.89	86.11	Very good
7	RQANI helps me improve my self-efficacy.	94.44	94.44	97.22	95.37	Very good
8	RQANI helps me improve my character.	97.22	94.44	97.22	96.30	Very good
9	RQANI encourages me to be actively involved in learning.	88.89	88.89	88.89	88.89	Very good
10	RQANI helps me improve my elaboration skills.	88.89	86.11	86.11	87.04	Very good
11	RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).	94.44	94.44	97.22	95.37	Very good
12	RQANI helps me improve my reading interest.	91.67	88.89	91.67	90.74	Very good
13	RQANI helps me boost my confidence in asking questions.	91.67	91.67	88.89	90.74	Very good
14	RQANI helps me improve my ability to answer questions.	86.11	86.11	91.67	87.96	Very good
15	RQANI improves my learning experience.	83.33	86.11	86.11	85.19	Very good
16	RQANI helps me realize that I need to study harder.	86.11	91.67	91.67	89.81	Very good
17	RQANI adds clarity to the learning material.	86.11	94.44	88.89	89.81	Very good

Commented [MOU23]: Use common words

Commented [MOU24]: Use common words

Commented [MOU25]: Use common words

No	Statement	University			Mean score	Inter-achievement
		PT-A (%)	PT-B (%)	PT-C (%)		
18	RQANI improves my curiosity.	88.89	86.11	88.89	87.96	Very good
19	RQANI helps me regulate learning.	86.11	83.33	86.11	85.19	good
20	RQANI helps me evaluate learning.	80.56	83.33	83.33	82.41	good
21	RQANI improves my critical thinking skills.	83.33	83.33	86.11	84.26	good
22	RQANI improves my argumentation and communication skills.	86.11	86.11	88.89	87.04	Very good
23	RQANI improves my social skills.	91.67	88.89	86.11	88.89	Very good
24	RQANI helps me develop cooperation and collaboration with classmates.	88.89	91.67	91.67	90.74	Very good
25	RQANI helps improve my concept mastery.	86.11	88.89	88.89	87.96	Very good
	Mean score	88.44	89.22	90.44	89.37	Very good

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 8 shows that the average score of students' responses towards the implementation of RQANI in IAIN Ternate, STKIP KIE Raha Ternate, UIN Alauddin Makassar was 89,37 and categorized very good. Syntax or learning stages are the basic steps that must be taken in implementing a learning model (Purwanto et al., 2020; Fuad et al., 2017).

Reading in RQANI has been proven to be able to boost student's confidence and active involvement in classroom discussions. At this stage, each student is given the opportunity to read the material before entering the classroom, so the students can build initial knowledge that is useful for asking questions, answering questions, providing arguments and doing a discussion. This stage helps students gain understanding of a text by analyzing and interpreting it so that their learning autonomy can gradually increase. Student's initial knowledge is significantly influenced by experience in reading materials that are going to be studied or discussed in the classroom (Hikmawati & Taufik, 2017). In addition to improving student's cognitive ability, the development of reading interest also leads to the development of positive behavior towards the environment.

Questioning in RQANI has the potential to stimulate students to formulate quality questions. At this stage, students are accustomed to asking questions that encourage reasoning skills and higher-order thinking skills. All students are required to be able and courageous to ask questions. The questions asked can activate their previous knowledge, focus their learning efforts and help them examine their knowledge. The act of arranging questions will focus students' attention on the learning content, main ideas, and help

Commented [MOU25]: Use common words

Commented [MOU26]: Use common words

them evaluate whether they have understood the material being studied. Continuous practice can build students' positive self-concept towards their potential. This positive self-concept will help the students to become more independent learners who have high self-efficacy.

Answering in RQANI stimulates students' ability to answer questions effectively and efficiently. This phase can improve students' self-efficacy or self-confidence in opinions or arguments that are born from their respective learning experiences. They are trained to have the courage to answer questions both from peers and from the lecturer appropriately. This stage can also improve students' learning outcomes. Low academic self-efficacy will appear in situations that suppress students' emotional condition (Sudirman, Nurmandi, & Bashori, 2020).

Elaboration in RQANI provides an opportunity for students to work in groups to understand material that has been studied, have dialogue and discuss with their group members about difficult materials and solve everyday problems. This stage also trains students' cooperation and empathy skills so that they can improve their performance. Peer support can increase students' self-confidence and motivation, which in turn can increase self-efficacy. Students who initially have low self-concept and self-efficacy can be motivated through support and assistance provided by more capable/expert peers. Peer support can help these students improve their self-concept and learning patterns for the better. Social control and continuous evaluation also need to be done to continuously monitor changes in student behavior towards a positive direction (Sitorus, Siswandari, & Kristiani, 2019).

Integration in RQANI provides an opportunity for students to discuss with their peers about how to integrate biology concepts and the holy verses of the Al-Quran and Al-Hadith. Through the integration of learning with the holy verses of Al-Quran and Al-Hadith, this phase teaches students that every concept in Biology is contextually related to everyday life.

Biology is a branch of science that studies organisms, life and the environment around them. Al-Qur'an and Al-Hadith contain a complete and perfect system that covers all aspects of human life, including scientific activities or scientific investigations. One of the physiology that occurs in the body is the food process. Allah SWT makes it easy for humans to obtain energy intake from food they eat, whereas plants carry out the photosynthesis process. Meanwhile, herbivorous animals obtain energy by consuming plants, carnivorous animals obtain energy by consuming meat and omnivorous animals consume plants and animals to survive. In the Al-Qur'an, humans have been instructed to choose good food (Q.S Al-Baqarah verse 168, Q.S Yunus verse 59, Q.S Luqman verse 20, Q.S Al-Maidah verse 5; H.R Ahmad). The integration of biology learning with Islamic values can increase gratitude for all of Allah's creation.

Biology learning is essentially a bridge to religious truth. It supports the understanding of the Al-Quran verses, especially those related to the greatness of Allah SWT that exist in nature and in living creatures, including humans (Ridwan, Adnan, & Bahri, 2018). Kasim & Yusoff (2014) suggest that the role of lecturers in learning is not only to

Commented [MOU27]: It's still a mystery how you integrate biology into the classroom.

Commented [MOU28]: RQANI is a teaching and learning method and is not only a concept. You should explain the method contextually. You have to relate this method to the biology being taught.

transfer knowledge, but also to integrate moral and spiritual values, build student's personality and character by facilitating, motivating and guiding students through meaningful learning. Furthermore, Kudari (2016) argues that through a combination of content material, student's academic skills and interactive skills, educators can bring a positive impact to learning and to the development of the students. According to Hakim (2012), the integration of Islamic values into the classroom can be done by combining science and Islamic teachings. Learning materials that are integrated with Islamic values will motivate students to change the way they think and behave (Purwati et al., 2018). Research conducted by Baba et al., (2015) shows that the integration of Islamic values, directly or indirectly, makes the learning process more valuable and meaningful.

CONCLUSION

The development of a learning model through the Plomp procedures conducted in this study resulted in a new learning model called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). RQANI consists of five learning phases namely Reading, Questioning, Answering, Elaboration and Integration. The validity of the RQANI prototype was very high with an average value of 3.67. The RQANI learning model was considered fairly practical and effective in improving student's learning outcomes and positive responses.

It is hoped that this study can provide a reference for lecturers of biology education and lecturers of other subjects to implement RQANI in the classroom as an effort to improve the quality of the integrated science-Islamic values. The results of this study can also provide insights for teachers in SMP/MTs and SMA /MA about the effectiveness of the RQANI learning model in improving the quality of learning and in creating a learning atmosphere that is more conducive, innovative and integrative.

Despite the significance of the findings, we acknowledge a limitation to the study. The tryout conducted at the Test, Evaluation and Revision phase was only limited to four-meeting lessons due to the Covid-19 outbreak. Therefore, future studies may need to involve a quasi experimental design to examine the effect of RQANI on science process skills, critical thinking skills, metacognitive skills, argumentation skills, communication skills and scientific literacy skills of students with different academic abilities, different gender and different ethnic backgrounds.

ACKNOWLEDGEMENTS

This study was financially supported by the State University Operational Assistance Funds (BOPTN), Budget Implementation List (DIPA), IAIN Ternate in 2020, the Ministry of Religious Affairs, Indonesia based on the contract No: B-053/C1/TL.06/01/2020.

REFERENCE

Adegboyega, L. O. (2018). Influence of Achievement Motivation on Nigerian Undergraduates' Attitude towards Examination. *International Journal of Instruction*, 11(1), 77-88.

Commented [MOU29]: These should be on theoretical framework/introduction.

Commented [MOU30]: After doing some revision, you need to fit the conclusion with the brand-new revision.

- Anshori, I. (2021). Problem-Based Learning Remodelling Using Islamic Values Integration and Sociological Research in Madrasas. *International Journal of Instruction*, 14(2), 421-442. <https://doi.org/10.29333/iji.2021.14224a>
- Ardianto, D., & Rubini, B. (2016). Comparison of Students' Scientific Literacy in Integrated Science Learning through Model of Guided Discovery and Problem Based Learning. *Jurnal Pendidikan IPA Indonesia*, 5(1), 31-37. <https://doi.org/10.15294/jpii.v5i1.5786>.
- Baba, S. B., Salleh, M. J., Zayed, T. M., & Harris, R. (2015). A Qur'anic Methodology for Integrating Knowledge and Education: Implications for Malaysia's Islamic Education Strategy. *The American Journal of Islamic Social Sciences*, 32(2), 1-27. <https://doi.org/10.35632/ajis.v32i2.262>.
- Badlisyah, T., & Wahyu, M. (2017). Development of Chemistry Learning Module of Al-Quran Based Atomic Structure In SMA N 1 Aceh Barat Daya. *Journal of Lantanida*, 5(2), 93-196.
- Berkowitz, M.W. & Bier, M.C. (2005). *What Works in Character Education: A Research-Driven Guide for Educators*. Washington DC: University of Missouri-St Louis.
- Fariyah, U., & Septiadi, D.D. (2019). The Development of Natural Science Learning Material Integrated with Islamic Values to Attract Santris' Interest Learning the Human Digestive System. *IOP Conf.Series: Earth and Environmental Science*, 243, 012049, 1-11. doi:10.1088/1755-1315/243/1/012049.
- Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. (2017). Improving Junior High Schools' Critical Thinking Skills Based on Test Three Different Models of Learning. *International Journal of Instruction*, 10(1): 101-116.
- Hakim, L. (2012). Internalisasi Nilai-nilai Agama Islam dalam Pembentukan Sikap dan Perilaku Siswa Sekolah Dasar Islam Terpadu Al-Muttaqin Kota Tasikmalaya [Internalization of Islamic Values into the Formation of the Attitudes and Behavior of Students of integrated Islamic Primary School Al-Muttaqin Tasikmalaya]. *Jurnal Pendidikan Agama Islam-Ta'lim*, 10(1), 67-77.
- Jacobsen, D., & Jacobsen, R.H. (2018). Faith and Learning in a Post-Truth World. *Journal of College & Character*, 19(2), 93-100. <https://doi.org/10.1080/2194587X.2018.1445645>.
- Hikmawati, V.Y., & Taufik, L.M. (2017). Urgensi Strategi Membaca pada Pembelajaran Biologi Masa Depan. *Jurnal Bio Educatio*, 2(2), 40-48.
- Kasim, T.S.A.T., & Yusoff, Y.M. (2014). Active Teaching Methods: Personal Experience of Integrating Spiritual and Moral Values. *Religious Education*, 109(5), 554-570.
- Khasanah, N., Sajidan, Sutarno, & Baskoro. (2017). Influence Integrated Science Model and Implementation Learning with the Unity of Science in Basic Biology Course to

- Increase Critical Thinking. *International Journal of Science and Applied Science: Conference Series*, 1(2), 131-136.
- Kudari, J.M. (2016). Survey on factors Influences the Student's Academic Performance. *International Journal of Emerging Research in Management & Technology*, 5(6), 30-36.
- Lang, M., & Olson, J. (2000). Integrated science teaching as a challenge for teachers to develop new conceptual structures. *Research in Science Education*, 30(2), 213-224. <https://doi.org/10.1007/BF02461629>.
- Listyono, Supardi, K.I., Hindarto, N., & Ridlo. (2018). Methods of Integrating Islamic Values in Teaching Biology for Shaping Attitude and Character. *IOP Conf. Series: Journal of Physics: Conf. Series* 983, 012178. doi :10.1088/1742-6596/983/1/012178.
- Lubis, M. A. (2015). Effective Implementation of the Integrated Islamic Education. *Global Journal Al-Thaqafah*, 5(1), 59-68.
- Mustami, M.K., Suyuti, M., & Maryam. (2017). Validitas, Kepraktisan, dan Efektivitas Perangkat Pembelajaran Biologi Integrasi Spritual Islam [Validity, Practicality, and Effectiveness of Islamic Spiritual Integration Biology Learning Tools]. *Jurnal Al-Qalam*, 23(1), 70-77.
- Narmaditya, B.S., Wulandari, D., & Sakarji, S.R.B. (2018). Does Problem-Based Learning Improve Critical Thinking Skills? *Cakrawala Pendidikan*, 37 (3), 378-388.
- Priatna, T. (2019). The Impact of the Integration of Islamic Learning and Science through Virtual Mechatronics Approach to Student Learning Outcomes at UIN Sunan Gunung Djati Bandung, West Java, Indonesia. *International Journal of Environmental & Science Education*, 14(8), 479-491.
- Purwanto, B.E., Jatmiko, A., Pahrudin, A., Munifah., Wardhani, S., Purnama, S., & Joemsittiprasert, W. (2020). The Implementation of Cooperative Learning to Developed Management of Language Learning System. *Journal for the Education of Gifted Young Scientists*, 8(1), 379-392. doi: <http://dx.doi.org/10.17478/jegys.675251>.
- Purwati, N., Zubaidah, S., Corebima, A. D., & Mahanal, S. (2018). Increasing Islamic Junior High School Students Learning Outcomes through Integration of Science Learning and Islamic Values. *International Journal of Instruction*, 11(4), 841-854. <https://doi.org/10.12973/iji.2018.11453a>.
- Rahardjanto, A., & Susilowati, R. (2018). Study of Learning Strategy Integration of Science and Religion on the Development of Student Character. *Advances in Social Science, Education and Humanities Research*, 231, 645-648. <https://doi.org/10.2991/amca-18.2018.178>.
- Rianti, S., & Usmeldi. (2019). Development of Integrated Science Student's Worksheet (LKPD) Based on Research-Based Learning Integrated with Religion Value. *IOP Conf. Series: Journal of Physics: Conf. Series* 1185, 012143. doi:10.1088/1742-6596/1185/1/012143.

- Ridwan, Adnan, & Bahri, A. (2018). Pengembangan E-Modul Biologi Berbasis Nilai Iman dan Taqwa pada Siswa MA Kelas XI [Development of Biology E-Module Based on Faith and Taqwa Values for MA Students in Class XI]. *Prosiding Seminar Nasional Biologi dan Pembelajarannya*, 419-424.
- Salam, M., Jafar., & Prajono, R. (2020). Effectiveness of Integrative Learning Models in Improving Understanding of Mathematical Concepts. *Journal for the Education of Gifted*, 8(2), 1005-1014. doi: <http://dx.doi.org/10.17478/jegys.666875>.
- Sholichah, A. S. (2018). Educational Theories in the Qur'an. *Journal of Islamic Education*. 7(1), 23-46.
- Sitorus, D.S., Siswandari., & Kristiani. (2019). The Effectiveness of Accounting E-Module Integrated with Character Value to Improve Students' Learning Outcomes and Honesty. *Cakrawala Pendidikan*, 38(1), 120-129. doi: 10.21831/cp.v38i1.20878.
- Sriatun, Linuwih, S., Sulhadi, & Aninditya. (2018). Development of Physics Learning Tools Contains Integration of Qur'an Values. *Advances in Social Science, Education and Humanities Research*, 247, 484-488. <https://dx.doi.org/10.2991/iset-18.2018.97>.
- Sudirman, S.A., Nurmandi, A., & Bashori, K. (2020). English Writing Skills Through Perception of Siri' Cultural Values: Optimism, Social Support, and Academic Self-Efficacy. *Cakrawala Pendidikan*, 39 (2), 242-256. doi:10.21831/cp.v39i2.26118.
- Sulayman, H. (2014). Values-Based Curriculum Model: A Practical Application of Integrated 'Masaqid Al-Sharia' for Wholness Development of Minkind. *Procedia-Social and Behavioral Sciences*, 123, 477-484. <https://doi.org/10.1016/j.sbspro.2014.01.1447>.
- Sunhaji. (2016). Teaching Model of Integrated Learning in the Islamic Religious Education of Rasise the Faith and Devotion of the Students of State's Senior Secondary Schools in Puwokerto City. *European Journal of Social Sciences*, 53(4), 317-325.
- Sunhaji. (2018). The Integration of Science-Technology and Living Environment through Islam Religion Education Leaning at Adiwiyata-Based Junior High School in Banyumas Regency. *Dinamika Ilmu*, 18(2), 179-193. doi: <http://dx.doi.org/10.21093/di.v18i2.1179>.
- Suryaningsih, Y. (2018). Penerapan Pembelajaran Biologi Berbasis Al-Qur'an Sebagai Metode untuk Pembentukan Karakter Siswa [Application of Al-Qur'an-Based Biology Learning as a Method for Character Building Students]. *Jurnal Bio Educatio*, 3(1), 22-33.
- Tambak, S., & Sukenti, D. (2020). Strengthening Islamic Behavior and Islamic Psychosocial in Developing Professional Madrasah Teachers. *Cakrawala Pendidikan*, 39 (1), 65-72. doi:10.21831/cp.v39i1.26001.
- Wei, B. (2018). An Exploratory Study of Teacher Development in the Implementation of Integrated Science Curriculum. *Research in Science Education*, 1-18. <https://doi.org/10.1007/s11165-018-9768-x>.

Winarno, N., Rusdiana, D., Riandi, R., Susilowati, E., & Afifah, R. M. A (2020). Implementation of Integrated Science Curriculum: A Critical Review of the Literature. *Journal for the Education of Gifted Young Scientists*, 8(2), 795-817. doi: <http://dx.doi.org/10.17478/jegys.675722>.

Yusup, I. R., Ukit, & Paujiah, E. (2018). Pengaruh Integrasi Nilai-Nilai Islam melalui Pendekatan Iman dan Taqwa (Imtaq) pada Hasil Belajar Sistem Reproduksi Manusia di MAN 2 Kota Bandung [Influence of Integration of Islamic Values through Faith and Taqwa Approach (Imtaq) on Learning Outcomes of Human Reproductive System at MAN 2 Bandung City]. *Bioilmi*, 4(2), 45-52.



International Journal of Instruction Article Evaluation Form

Mr. /Mrs.

It is to acknowledge you that the Executive Committee of *International Journal of Instruction* has decided that the article mentioned below would be reviewed by you. Thank you very much for your contributions.

Asim ARI
Editor in Chief

Name of the article: RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

After reviewing the attached article, please read each item carefully and select the response that best reflects your opinion. To register your response, please **mark** or **type in** the appropriate block.

	Yes	Partially	No
Do you think the title is appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the abstract summarize the article clearly and effectively?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the objectives set clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the issue stated clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the literature review adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the design of the research appropriate, and the exemplary, if any, suitable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the methodology consistent with the practice?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the findings expressed clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the presentation of the findings adequate and consistent?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the tables, if any, arranged well?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the conclusions and generalizations based on the findings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the suggestions meaningful, valid, and based on the findings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the references adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the language clear and understandable?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is cohesion achieved throughout the article?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the work contributing to the field?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- Evaluation:**
- The article can be published as it is.
 - The article can be published after some revision.
 - The article must undergo a major revision before it can be resubmitted to the journal.
 - The article cannot be published.

Would you like to see the revised article if you have suggested any revisions? Yes No

Please write your report either on this paper or on a spare paper.

REPORT

Section of the Manuscript	Comments and Notes
Title- Abstract- Summary	Title : Add some sentence "Biology Learning" Abstract : in the abstract add research objectives, research methods, population and sample, research results, Show calculation RQANI was Valid, Practical and Effective Summary : add implications of your research
Introduction and Literature Review	very poor references, especially related to the development of learning models. Please add more references about previous research from 2018-2021, then add more references about Plomp's and what problem at biology learning which makes it must be integrated Science

	Concepts and Islamic values.
Research Methods	please check : plomp 2007 or 2017? Please explain every step, from (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision. Add original references at fig. 1
Research Findings	Good Enough
Discussion	Good Enough add your reference stating your calculation is valid at table 5.
Conclusion and Suggestions	add implications of your research
References and Citation	use mendeley when making a bibliography, add doi or link of article in every article
Language	Need to be improved, please do proofread for your article
Other issues	-

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values

The integration of Islamic values into science learning should be supported by an effective learning model. A preliminary study showed that Biology learning in the classroom could not encourage the integration of science concepts and Islamic values. The current study was designed as a Research and Development study that used the Plomp model (2007), consisting of the following stages: preliminary investigation, design, realization or construction and test, evaluation and revision. The data of this study were collected in the form of (1) descriptive data on the results of the learning model's development; (2) descriptive data on the validity, practicality and effectiveness of the learning model. The validity of the model was examined by experts and practitioners using validation sheets. The model practicality was evaluated using learning implementation sheets. The effectiveness of the model was determined through (1) achievement tests; (2) a questionnaire survey. Through the Plomp's development procedure, this study successfully generated a new learning model, called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). Learning in RQANI is conducted in five phases, namely Reading, Questioning, Answering, Elaboration and Integration. The results of the study also proved that RQANI was valid, practical and effective.

Keywords: Islamic Values, Learning Model, RQANI, Science

INTRODUCTION

The integration of Islamic values into science learning must be supported by an effective learning approach or model (Lubis, 2015, Anshori, 2021). Scientific truth does not only refer to evidence-based reasons but also results from questions about identity, meaning, purpose and beliefs (Jacobsen & Jacobsen, 2018). The scientific characteristics of biology learning include products, processes, attitudes, technology, and strategic tools to develop various aspects of learning (cognitive, affective, and psychomotor) which are very important in shaping students' character and morals. In achieving its ultimate goals, the Islamic education system integrates and harmonizes the interests of the world and the interests of the hereafter (QS Al-Qashash, 77). Integration is the keyword guaranteeing that there is no separation between religion and science (Mustami, Suyuti, & Maryam, 2017). Integrated learning has been proven able to train students' critical thinking skills and build their systematic knowledge (Salam, Jafar, & Prajono, 2020). Effective integrated learning can also improve students' learning skills (Winarno et al., 2020).

Learning that integrates Islamic values is able to develop students' thinking skills holistically (Purwati et al., 2018; Sariatun et al., 2018; Sunhaji, 2016). Islamic values in science have the potential to help students acquire attitudes, develop character, understand their strengths and weaknesses, and recognize the truth in everyday life in society (Listyono et al., 2018). Strengthening values-based teaching is able to gradually build a strong moral foundation that plays an important role in influencing current and

Commented [MOU1]: Add some sentence "Biology Learning"

Commented [MOU2]: in the abstract add research objectives, research methods, population and sample, research results, Show calculation RQANI was Valid, Practical and Effective

future decision-making and attitudes (Sulayman, 2014; Tambak & Sukenti, 2020). Integrated science learning using a guided discovery model and problem-based learning has been proven able to improve students' scientific literacy (Ardianto & Rubini, 2016; Narmaditya, Wulandari, & Sakarji, 2018). Integrated learning can shape the concept of science teaching and increase collaboration between educators and students (Wei, 2018; Lang & Olson, 2000).

The benefits obtained from developing a learning model that integrates science and religion include increasing students' understanding of religion, deepening students' value-based knowledge, increasing the implementation of science practices in daily life, developing students' character (Farihah & Septiadi, 2019; Rahadjanto & Susilowati, 2018; Suryaningsih, 2018; Adegboyega, 2018), developing students' competence, moral values and responsibility (Rianti & Usmeldi, 2019), and providing more meaningful learning experiences (Yusup, Ukit & Paujjiah, 2018). Character building through the integration of science with Islamic values can help students maintain responsibility for learning and develop ethics in the classroom (Berkowitz & Bier, 2005).

The principles taught in the Qur'an serve as a reference for producing theory and developing learning (Sholichah, 2018). In fact, it is difficult to implement a teaching and learning process that can instill religious values in students and that can connect science and religion (Badlisyah & Wahyu, 2017). Learning often runs independently and is not integrated with religious values, because it is often assumed that religion is only limited to religious practices. The non-contextual teaching and learning process will hinder the development of students' ability to think holistically and make it difficult for them to relate the concepts they learn in the classroom to their daily life as a Muslim (Khasanah et al., 2017; Sunhaji, 2018). As a result, students are not given the opportunity to experience learning in real-world contexts.

The results of observations and interviews with Biology students from IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar in South Sulawesi, Indonesia revealed that Biology classrooms rarely integrated Islamic values effectively. The biological concepts taught in the universities were focused more on the cognitive domain. In addition, the theories were presented through abstract and dense materials that were difficult for the students to understand. The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation (Priatna, 2019) in Islam. The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5).

Based on the explanation, research findings, and past studies presented above, it can be assumed that the development of a learning model that can integrate Islamic values into the concepts of science is necessary. The learning model developed should be able to connect concepts in Biology with the holy verses of Al-Qur'an and Al-Hadith. The problems in this study were formulated into (1) How can a new integrated learning model be generated using the Plomp's development procedures? (2) How valid,

Commented [MOU3]: very poor references, especially related to the development of learning models. Please add more references about previous research from 2018-2021, then add more references about Plomp's and what problem at biology learning which makes it must be integrated Science Concepts and Islamic values

practical and effective is the model in terms of its implementation in the classroom? It is expected that the results of this study can provide insights and information about the effectiveness of an integrated learning model with Islamic values in improving students' character, especially in facing the 21st century global challenges.

METHOD

Research Goal

The current study was designed as a Research and Development (R&D) study. The procedures for developing the prototype were adopted from Plomp (2017), consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision.

Commented [MOU4]: plomp 2007 or 2017?

Sample and Data Collection

The population of the study consisted of all students from the Department of Biology Education at IAIN Ternate, North Maluku, Indonesia; STKIP KIE Raha Ternate, North Maluku, Indonesia; and UIN Alauddin Makassar in South Sulawesi, Indonesia. The sample of the study contained (1) 40 students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) 40 students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) 40 students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The sample groups were determined based on the characteristics and number of the students required for every research treatment. All of the sample classes were homogeneous based on the homogeneity test using grouping test data. This study was conducted from January 2020 until July 2020.

Commented [MOU5]: Please explain every step, from (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision.

Data Analysis

The data comprised (1) descriptive data about the results of the development of the learning model through the Plomp's model development procedure; (2) descriptive data about the quality of the resulting learning model (validity, practicality, and effectiveness). The validity of the learning model was examined through expert and practitioner assessments with validation sheets. The practicality of the model was examined using learning implementation sheets. The effectiveness of the model was determined through achievement test and survey. The data analysis was carried out in a descriptive quantitative manner by referring to certain criteria. The research procedures are depicted in Figure 1.

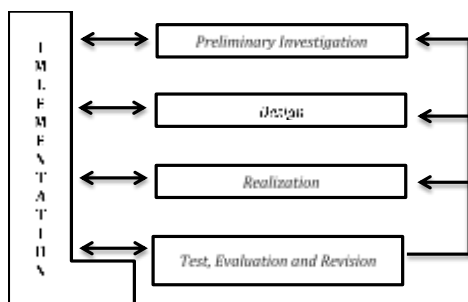


Figure 1
Plomp's Development of Model

Commented [MOU6]: Add original references

FINDINGS

The Development of RQANI Learning Model through Plomp's Model Development Procedures

Phase-1: Preliminary Investigation

Preliminary investigation suggests that a learning model should be developed to integrate Islamic values into Biology learning at the Department of Biology Education of IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar, South Sulawesi.

Table.1
Preliminary Investigation Results

Aspect	Descriptions		
	PT-A	PT-B	PT-C
Learning Activities	Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.	Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.	50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.
Learning Models	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.
Learning	The lecturers use discussion,	The lecturers use	The lecturers use

Aspect	Descriptions		
	PT-A	PT-B	PT-C
methods	lecturing and task-assignment methods to facilitate learning.	discussion, lecturing, task-assignment and student presentation methods to facilitate learning.	discussion, lecturing, task-assignment and investigation methods to facilitate learning.
Learning materials	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.
Learning facility	The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.	The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.	The classroom environment is fine, but not every classroom is equipped with the LCD projector.
Campus facility	The campus has provided the students with a laboratory, libraries and wireless internet connection. However, practicum activities are rarely done in the laboratory, literature on Biology contents is still lacking. The internet connection is good around the rectorate building, faculty and library, but is weak if accessed from the classrooms.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The wi-fi signal is weak if accessed from the classrooms. The laboratory is not equipped with adequate practicum tools and materials. The libraries contain a limited number of books on biology.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The laboratory is equipped with adequate practicum tools and materials. The department libraries, faculty libraries and central library contain an ample supply of books on biology number. The internet connection is good around campus.
Student's cognitive ability	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1) and understanding (C2). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.
Student's learning motivation	The students have poor learning motivation. They get easily bored because learning is dominated by lectures.	The students have poor learning motivation. They are unable to maintain their attention to every learning activity in the classroom.	The students have poor learning motivation. They need to experience learning that can integrate Islamic values and biology contents.
Student's self-efficacy	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.

6 *RQANI: A Learning Model that Integrates Science Concepts and Islamic Values*

Aspect	Descriptions		
	PT-A	PT-B	PT-C
		Mostly, they are not certain about their own ideas and thinking process, so they cannot engage actively in the learning process.	
Student's character values	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries and learning environment.	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries, learning environment and self development.	The students have poor character. The students' concern about the campus facility, laboratory, libraries, learning environment needs to be improved.
Student's active participation in learning	The students cannot engage actively in the learning process; learning activities are mostly dominated by the high achievers.	The students cannot engage actively in the learning process; learning activities are mostly dominated by particular groups of students. Less than 10% of the students are confident in asking and answering questions.	Not all of the students can engage actively in the learning process; learning activities are mostly dominated by the high achievers.
Student's interest	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology.	The students have low interest in learning biology. They are only attracted to particular themes. As a result, the students cannot optimize their performance in the standard of competence and basic competence set in the curriculum.	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology. The students are in favor of investigative learning.
Student's responses towards Biology learning at the campus	The students have negative responses and perceptions on biology learning at the campus. They think that biology is dull, non-contextual, difficult to understand and requires memorization.	The students have negative responses towards biology learning at the campus. Stimulation needs to be provided so that the students can feel more comfortable and relaxed in understanding concepts in biology.	The students' positive responses towards biology learning at the campus need to be improved. The students sometimes face difficulty concentrating on the lessons.
Challenges faced by students in learning Biology	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge. New learning models should be developed, such as the	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.

Aspect	Descriptions		
	PT-A	PT-B	PT-C
		integration of active learning or contextual learning and Islamic values.	

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Phase-2: Design

The RQANI learning model is constructed from the following components: syntax (phases or stages of learning), social system, reaction principles, support system, instructional impacts and accompaniment impacts. The lack of students' initial knowledge indicates that lecturers need to dedicate more effort to stimulate and prepare their students to acquire theories that are needed during the learning process. This is relevant to the design of the RQANI model, of which first phase is reading. There are five learning phases in the RQANI learning model: Reading, Questioning, Answering, Elaboration and Integration.

Phase-3: Realization/Construction

The activity carried out in phase-3 was the realization of the learning model that had been designed in phase-2. Some of the things that were realized at this stage included (a) learning syntax; (b) social system; (c) reaction principles; (d) support system; and (e) instructional impacts. The RQANI design had to undergo expert validation. In this regard, an expert in education, an expert in the integration of biology learning and Islamic values and a field practitioner with relevant experience were invited to assess the RQANI design.

Learning Syntax

There are five learning phases in RQANI: Reading, Questioning, Answering, Elaboration, Integration. Lecturer's activities and student's activities in RQANI are presented in Table 2.

Table 2

RQANI Learning Syntax

Syntax	Learning Activities	
	Lecturer	Student
Phase 1: Reading	1. Lecturer provides students with motivation to learn.	1. Student listens to the delivery of learning motivation from the lecturer.
	2. Lecturer delivers learning objectives.	2. Student listens and records the learning objectives delivered by the lecturer.
	3. Lecturer provides students with the opportunity to read relevant literature/references/textbooks/texts/modules related to the material to be discussed.	3. Student reads relevant literature/references/textbooks/texts/modules related to the material to be

Syntax	Learning Activities	
	Lecturer	Student
		discussed.
Phase 2: Questioning	Lecturer provides opportunities for students to formulate and ask questions related to the material being discussed.	Student formulates and asks questions related to the material being discussed.
Phase 3: Answering	Lecturer provides opportunities for students to answer questions related to the material being discussed.	Student answers questions related to the material being discussed.
Phase 4: Elaboration	Lecturer facilitates students' collaborative work so that they can understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.	Students work in groups to understand the material that has been studied, have a dialogue and discuss difficult materials with their group members and solve problems related to everyday life.
Phase 5: Integration	<ol style="list-style-type: none"> Lecturer provides opportunities for students to work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Lecturer wraps up the lesson. 	<ol style="list-style-type: none"> Students work with peers or in groups to find verses from the Al-Quran and Al-Hadith that are relevant to the material that has been studied, and write them down in their notebooks. Student pays attention to the lecturer and draws a conclusion from the lesson.

Social System

Social system describes the roles and functions of students, the interaction between the lecturer and students and learning objectives or targets. The RQANI model is a learning model designed to activate students in an elaborate learning process that integrates scientific concepts and the holy verses of the Al-Quran and Al-Hadith. This model provides an opportunity for students to prepare/equip themselves with initial concepts, practice asking high-level questions, answer questions effectively and efficiently, work together in groups to understand the material that has been studied, have dialogue and discuss materials that are difficult to understand with group colleagues, solve every day problems and cooperate with peers or in groups to find the holy verses of Al-Quran and Al-Hadith that are relevant to the material that has been studied. On the other hand, the lecturer acts as a facilitator or a guide who arranges learning so that it can run well. This model is expected to improve student's self-efficacy, character, critical thinking skills, argumentation skills, communication skills, social skills, analytical skills, collaboration skills, elaboration skills, conceptual mastery and other skills needed in the 21st century learning.

Reaction Principles

The RQANI learning model provides opportunities for students to be actively involved in learning. The lecturer will allow the students to develop knowledge, construct understanding, elaborate on existing knowledge and understanding, and integrate that knowledge and understanding of the Islamic from the Al-Quran and Al-Hadith. The lecturer should facilitate and provide scaffolding if students experience difficulties in

learning. The lecturer also have to provide feedback on comments, arguments, questions, answers, conclusions, ideas produced by the students in the classroom. If there is a misconception, the lecturer is obliged to provide clarification of the concept and additional explanation which is supported by strong and logical arguments and relevant references. The two-way interaction between the lecturer and students is expected to increase student's activity and learning autonomy so that they are able to overcome learning problems that have been identified in the previous stage, namely in the initial investigation phase.

Support System

The support system referred to in this study is additional requirements to implement the RQANI model, which includes learning tools and learning resources. Physical requirements can be in the form of RPS, SAP, LKM, lecture dictates and supporting ICT media. Non-physical requirements can be in the form of student psychological condition before conducting learning, lecturer's ability to manage learning in RQANI, good communication between the lecturer and students, and conducive learning atmosphere.

Instructional and Accompaniment Impacts

The instructional impacts of Biology Learning using RQANI are:

- 1) The improvement of student's self-efficacy and character
- 2) The improvement of student's active involvement in learning
- 3) The improvement of student's elaboration and integration skills

The accompaniment impacts of Biology Learning using RQANI include:

- 1) The improvement of student's argumentation and communication skills
- 2) The improvement of student's social skills
- 3) The improvement of student's cooperation and collaboration
- 4) The improvement of student's concept mastery
- 5) The improvement of student's learning autonomy

Phase-4: Test, Evaluation, Revision

The RQANI learning model that had been developed and claimed to be valid was then tested on a limited basis to investigate changes in the character values and self-efficacy of students who took part in the tryout. The tryout was conducted on (1) students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The data from this tryout provided a basis for reflecting on the effectiveness of the RQANI (Reading, Questioning, Answering and Integration) prototype.

Table 3
Students' Character Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
--	---------	-----------	------------

Students from PT-A	46.75	78.75	72.60
Students from PT-B	44.41	73.69	68.74
Students from PT-C	41.08	77.24	89.73

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 4

Students' Self-Efficacy Scores after the Implementation of RQANI

	Pretest	Post-Test	Change (%)
Students from PT-A	47.65	75.28	60.73
Students from PT-B	43.37	71.77	67.03
Students from PT-C	43.63	75.78	75.60

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

The Validity, Practicality and Effectiveness of RQANI

The Validity of RQANI

The results of the expert validation on the learning model's syntax are summarized in Table 5.

Table 5

The Validation Results of RQANI Syntax

No	Evaluated Aspect	Mean Score
1.	Rationales for developing the learning model are explicit.	3.67
B Supporting Theories		
2.	The theories used in the model development are relevant to RQANI.	4.00
3.	Piaget's theory supports the development of RQANI.	4.00
4.	Vygotsky's social development theory supports the development of RQANI.	4.00
5.	David Ausubel's learning theory supports the development of RQANI.	4.00
6.	Bruner's theory supports the development of RQANI.	4.00
C Learning Syntax		
7.	The learning stages are arranged coherently and clearly.	4.00
8.	The learning stages are logical and rational.	3.67
9.	The learning stages activities of the lecturer and of the students.	4.00
10.	The description of learning activities at each stage of the learning model reflects the flow of the activities that can be carried out by the lecturer and the students.	4.00
11.	The description of learning activities at each stage of the learning model is oriented towards constructing student knowledge.	3.33
12.	The description of learning activities at each stage of the learning model attracts student's attention.	4.00
13.	The description of learning activities at each stage of the learning model is oriented towards increasing student's learning autonomy.	3.67
14.	The description of learning activities at each stage of the learning model is oriented towards increasing student's character.	4.00
15.	The description of learning activities at each stage of the learning model is oriented towards increasing student's self-efficacy.	4.00

No	Evaluated Aspect	Mean Score
16.	The description of learning activities at each stage of the learning model is oriented towards increasing student's active involvement in learning.	4.00
17.	The description of learning activities at each stage of the learning model is oriented towards increasing student's elaboration skills.	3.33
18.	The description of learning activities at each stage of the learning model is oriented towards increasing student's integration skills.	4.00
19.	The description of learning activities at each stage of the learning model is oriented towards increasing student's critical thinking skills.	3.67
20.	The description of learning activities at each stage of the learning model is oriented towards increasing student's argumentation and communication skills.	3.33
21.	The description of learning activities at each stage of the learning model is oriented towards increasing student's social skills.	3.33
22.	The description of learning activities at each stage of the learning model is oriented towards increasing student's cooperative and collaborative skills.	3.67
23.	The description of learning activities at each stage of the learning model is oriented towards increasing student's concept mastery.	3.67
D	Social System	
24.	The description of learning activities at each stage of the learning model shows that there is an interaction between the lecturer and students.	4.00
25.	The relationship pattern between the lecturer and the students demonstrates the lecturer's role as a facilitator and a guide.	4.00
26.	The description of learning activities at each stage of the learning model shows that there is an interaction between students.	4.00
27.	The relationship between the lecturer and student individuals is explicit.	3.33
28.	The relationship between the lecturer and student individuals is clear in discussion.	4.00
E	Reaction Principles	
29.	Lecturer behavior is clearly stated.	3.67
30.	The description of learning activities shows that the lecturer provides learning resources needed by students such as textbooks, online media, etc.	3.67
31.	The description of learning activities shows that the lecturer provides motivation to increase student interest in learning.	4.00
32.	The description of learning activities shows that the lecturer provides a number of activities that stimulate student curiosity.	3.33
33.	The description of learning activities shows that the lecturer encourages students to explore ideas and communicate scientifically.	3.67
34.	The description of learning activities shows that the lecturer gives students the opportunity to ask questions when they have difficulty understanding phenomena and concepts.	3.33
F	Supporting System	
35.	Learning tools are arranged according to the steps of the learning model.	4.00
36.	Learning devices are arranged in accordance with learning objectives that are oriented to increase student's self-efficacy and character.	3.67
G	Instructional and Accompaniment Impacts	
37.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are clearly stated in the RQANI syntax.	3.67
38.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) are logically stated in the RQANI syntax.	3.00
39.	The types of instructional impacts (self efficacy, character, active involvement, elaboration and integration skills) show the goals that are going to be achieved by RQANI.	3.33
40.	The accompaniment impacts, which are in the form of critical thinking skills, argumentation and communication skills, social skills, collaboration and	3.67

No	Evaluated Aspect	Mean Score
	collaborative skills, conceptual mastery, learning autonomy, are in accordance with the learning objectives to be achieved.	
H	Conclusion	
41.	The quality of the learning model in general	3.67
42.	The feasibility of the learning model based on your opinion	3.67
	Mean score	3.74 (Highly Valid)

Based on the validation results of the learning syntax presented in Table 5, it can be concluded that the learning model was highly valid and feasible (3.67).

Commented [MOU7]: add your reference stating your calculation is valid

The Practicality of RQANI

The practicality of the learning model was examined using the learning implementation sheets. Consistency test that was conducted to measure the implementation of the syntax showed a parallel significance value of 0.341, while the data coincidence obtained a significance value of 0.011. The data parallel level showed a number greater than 0.05, while the data coincidence was smaller than 0.05. These figures suggested that the RQANI learning syntax was parallel but not coincident. Although not coincident, the results of these tests indicated that the learning syntax had been carried out consistently. The consistency test results are shown in Table 6.

Table 6
Consistency Test Results of RQANI

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34024.645	3	11341.548	688.487	0.000
	b1, b2	15.055	1	15.055	0.914	0.341
	b1, b2, b3	154.999	2	77.500	4.705	0.011
	Residual	1910.884	116	16.473		
	Total	35935.529	119			

The Effectiveness of RQANI

The effectiveness of RQANI was measured based on (1) the students' test scores and (1) the students' questionnaire responses. The students' test results after the implementation of RQANI are summarized in Table 7.

Table.7
Recapitulation of Student's Learning Achievement

	PT-A	PT-B	PT-C
Highest score	93	90	98
Lowest score	82	80	86
Score range	11	10	12
Mean score	85.25	83.19	89.22
Test Completion	100	100	100

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia
 PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia
 PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

The students' responses towards RQANI learning model are presented in Table 8.

Table 8
 Summary of Students' Responses towards RQANI

No	Statement	University			Mean score	Inter-achievement
		PT-A (%)	PT-B (%)	PT-C (%)		
1	For me, learning using RQANI is interesting.	94.44	94.44	97.22	95.37	Very good
2	For me, learning using RQANI is fun.	88.89	91.67	94.44	91.67	Very good
3	RQANI helps me follow the lesson well.	86.11	86.11	88.89	87.04	Very good
4	RQANI helps me improve my learning motivation.	88.89	88.89	91.67	89.81	Very good
5	RQANI helps me improve my collaboration skills.	88.89	94.44	94.44	92.59	Very good
6	RQANI helps me improve my learning autonomy.	83.33	86.11	88.89	86.11	Very good
7	RQANI helps me improve my self-efficacy.	94.44	94.44	97.22	95.37	Very good
8	RQANI helps me improve my character.	97.22	94.44	97.22	96.30	Very good
9	RQANI encourages me to be actively involved in learning.	88.89	88.89	88.89	88.89	Very good
10	RQANI helps me improve my elaboration skills.	88.89	86.11	86.11	87.04	Very good
11	RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).	94.44	94.44	97.22	95.37	Very good
12	RQANI helps me improve my reading interest.	91.67	88.89	91.67	90.74	Very good
13	RQANI helps me boost my confidence in asking questions.	91.67	91.67	88.89	90.74	Very good
14	RQANI helps me improve my ability to answer questions.	86.11	86.11	91.67	87.96	Very good
15	RQANI improves my learning experience.	83.33	86.11	86.11	85.19	Very good
16	RQANI helps me realize that I need to study harder.	86.11	91.67	91.67	89.81	Very good
17	RQANI adds clarity to the learning material.	86.11	94.44	88.89	89.81	Very good
18	RQANI improves my curiosity.	88.89	86.11	88.89	87.96	Very good
19	RQANI helps me regulate	86.11	83.33	86.11	85.19	good

No	Statement	University			Mean score	Inter-achievement
		PT-A (%)	PT-B (%)	PT-C (%)		
	learning.					
20	RQANI helps me evaluate learning.	80.56	83.33	83.33	82.41	good
21	RQANI improves my critical thinking skills.	83.33	83.33	86.11	84.26	good
22	RQANI improves my argumentation and communication skills.	86.11	86.11	88.89	87.04	Very good
23	RQANI improves my social skills.	91.67	88.89	86.11	88.89	Very good
24	RQANI helps me develop cooperation and collaboration with classmates.	88.89	91.67	91.67	90.74	Very good
25	RQANI helps improve my concept mastery.	86.11	88.89	88.89	87.96	Very good
	Mean score	88.44	89.22	90.44	89.37	Very good

Notes:

PT-A: IAIN Ternate, North Maluku, Indonesia

PT-B: STKIP KIE Raha Ternate, North Maluku, Indonesia

PT-C: UIN Alauddin Makassar, South Sulawesi, Indonesia

Table 8 shows that the average score of students' responses towards the implementation of RQANI in IAIN Ternate, STKIP KIE Raha Ternate, UIN Alauddin Makassar was 89,37 and categorized very good. Syntax or learning stages are the basic steps that must be taken in implementing a learning model (Purwanto et al., 2020; Fuad et al., 2017).

Reading in RQANI has been proven to be able to boost student's confidence and active involvement in classroom discussions. At this stage, each student is given the opportunity to read the material before entering the classroom, so the students can build initial knowledge that is useful for asking questions, answering questions, providing arguments and doing a discussion. This stage helps students gain understanding of a text by analyzing and interpreting it so that their learning autonomy can gradually increase. Student's initial knowledge is significantly influenced by experience in reading materials that are going to be studied or discussed in the classroom (Hikmawati & Taufik, 2017). In addition to improving student's cognitive ability, the development of reading interest also leads to the development of positive behavior towards the environment.

Questioning in RQANI has the potential to stimulate students to formulate quality questions. At this stage, students are accustomed to asking questions that encourage reasoning skills and higher-order thinking skills. All students are required to be able and courageous to ask questions. The questions asked can activate their previous knowledge, focus their learning efforts and help them examine their knowledge. The act of arranging questions will focus students' attention on the learning content, main ideas, and help them evaluate whether they have understood the material being studied. Continuous practice can build students' positive self-concept towards their potential. This positive

self-concept will help the students to become more independent learners who have high self-efficacy.

Answering in RQANI stimulates students' ability to answer questions effectively and efficiently. This phase can improve students' self-efficacy or self-confidence in opinions or arguments that are born from their respective learning experiences. They are trained to have the courage to answer questions both from peers and from the lecturer appropriately. This stage can also improve students' learning outcomes. Low academic self-efficacy will appear in situations that suppress students' emotional condition (Sudirman, Nurmandi, & Bashori, 2020).

Elaboration in RQANI provides an opportunity for students to work in groups to understand material that has been studied, have dialogue and discuss with their group members about difficult materials and solve everyday problems. This stage also trains students' cooperation and empathy skills so that they can improve their performance. Peer support can increase students' self-confidence and motivation, which in turn can increase self-efficacy. Students who initially have low self-concept and self-efficacy can be motivated through support and assistance provided by more capable/expert peers. Peer support can help these students improve their self-concept and learning patterns for the better. Social control and continuous evaluation also need to be done to continuously monitor changes in student behavior towards a positive direction (Sitorus, Siswandari, & Kristiani, 2019).

Integration in RQANI provides an opportunity for students to discuss with their peers about how to integrate biology concepts and the holy verses of the Al-Quran and Al-Hadith. Through the integration of learning with the holy verses of Al-Quran and Al-Hadith, this phase teaches students that every concept in Biology is contextually related to everyday life.

Biology is a branch of science that studies organisms, life and the environment around them. Al-Qur'an and Al-Hadith contain a complete and perfect system that covers all aspects of human life, including scientific activities or scientific investigations. One of the physiology that occurs in the body is the food process. Allah SWT makes it easy for humans to obtain energy intake from food they eat, whereas plants carry out the photosynthesis process. Meanwhile, herbivorous animals obtain energy by consuming plants, carnivorous animals obtain energy by consuming meat and omnivorous animals consume plants and animals to survive. In the Al-Qur'an, humans have been instructed to choose good food (Q.S Al-Baqarah verse 168, Q.S Yunus verse 59, Q.S Luqman verse 20, Q.S Al-Maidah verse 5; H.R Ahmad). The integration of biology learning with Islamic values can increase gratitude for all of Allah's creation.

Biology learning is essentially a bridge to religious truth. It supports the understanding of the Al-Quran verses, especially those related to the greatness of Allah SWT that exist in nature and in living creatures, including humans (Ridwan, Adnan, & Bahri, 2018). Kasim & Yusoff (2014) suggest that the role of lecturers in learning is not only to transfer knowledge, but also to integrate moral and spiritual values, build student's personality and character by facilitating, motivating and guiding students through

meaningful learning. Furthermore, Kudari (2016) argues that through a combination of content material, student's academic skills and interactive skills, educators can bring a positive impact to learning and to the development of the students. According to Hakim (2012), the integration of Islamic values into the classroom can be done by combining science and Islamic teachings. Learning materials that are integrated with Islamic values will motivate students to change the way they think and behave (Purwati et al., 2018). Research conducted by Baba et al., (2015) shows that the integration of Islamic values, directly or indirectly, makes the learning process more valuable and meaningful.

CONCLUSION

The development of a learning model through the Plomp procedures conducted in this study resulted in a new learning model called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). RQANI consists of five learning phases namely Reading, Questioning, Answering, Elaboration and Integration. The validity of the RQANI prototype was very high with an average value of 3.67. The RQANI learning model was considered fairly practical and effective in improving student's learning outcomes and positive responses.

It is hoped that this study can provide a reference for lecturers of biology education and lecturers of other subjects to implement RQANI in the classroom as an effort to improve the quality of the integrated science-Islamic values. The results of this study can also provide insights for teachers in SMP/MTs and SMA /MA about the effectiveness of the RQANI learning model in improving the quality of learning and in creating a learning atmosphere that is more conducive, innovative and integrative.

Despite the significance of the findings, we acknowledge a limitation to the study. The tryout conducted at the Test, Evaluation and Revision phase was only limited to four-meeting lessons due to the Covid-19 outbreak. Therefore, future studies may need to involve a quasi experimental design to examine the effect of RQANI on science process skills, critical thinking skills, metacognitive skills, argumentation skills, communication skills and scientific literacy skills of students with different academic abilities, different gender and different ethnic backgrounds.

ACKNOWLEDGEMENTS

This study was financially supported by the State University Operational Assistance Funds (BOPTN), Budget Implementation List (DIPA), IAIN Ternate in 2020, the Ministry of Religious Affairs, Indonesia based on the contract No: B-053/C1/TL.06/01/2020.

REFERENCE

Adegboyega, L. O. (2018). Influence of Achievement Motivation on Nigerian Undergraduates' Attitude towards Examination. *International Journal of Instruction*, 11(1), 77-88.

Commented [MOU8]: add implications of your research

- Anshori, I. (2021). Problem-Based Learning Remodelling Using Islamic Values Integration and Sociological Research in Madrasas. *International Journal of Instruction*, 14(2), 421-442. <https://doi.org/10.29333/iji.2021.14224a>
- Ardianto, D., & Rubini, B. (2016). Comparison of Students' Scientific Literacy in Integrated Science Learning through Model of Guided Discovery and Problem Based Learning. *Jurnal Pendidikan IPA Indonesia*, 5(1), 31-37. <https://doi.org/10.15294/jpii.v5i1.5786>
- Baba, S. B., Salleh, M. J., Zayed, T. M., & Harris, R. (2015). A Qur'anic Methodology for Integrating Knowledge and Education: Implications for Malaysia's Islamic Education Strategy. *The American Journal of Islamic Social Sciences*, 32(2), 1-27. <https://doi.org/10.35632/ajis.v32i2.262>
- Badlisyah, T., & Wahyu, M. (2017). Development of Chemistry Learning Module of Al-Quran Based Atomic Structure In SMA N 1 Aceh Barat Daya. *Journal of Lantanida*, 5(2), 93-196.
- Berkowitz, M.W. & Bier, M.C. (2005). *What Works in Character Education: A Research-Driven Guide for Educators*. Washington DC: University of Missouri-St Louis.
- Fariyah, U., & Septiadi, D.D. (2019). The Development of Natural Science Learning Material Integrated with Islamic Values to Attract Santris' Interest Learning the Human Digestive System. *IOP Conf.Series: Earth and Environmental Science*, 243, 012049, 1-11. doi:10.1088/1755-1315/243/1/012049.
- Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. (2017). Improving Junior High Schools' Critical Thinking Skills Based on Test Three Different Models of Learning. *International Journal of Instruction*, 10(1): 101-116.
- Hakim, L. (2012). Internalisasi Nilai-nilai Agama Islam dalam Pembentukan Sikap dan Perilaku Siswa Sekolah Dasar Islam Terpadu Al-Muttaqin Kota Tasikmalaya [Internalization of Islamic Values into the Formation of the Attitudes and Behavior of Students of integrated Islamic Primary School Al-Muttaqin Tasikmalaya]. *Jurnal Pendidikan Agama Islam-Ta'lim*, 10(1), 67-77.
- Jacobsen, D., & Jacobsen, R.H. (2018). Faith and Learning in a Post-Truth World. *Journal of College & Character*, 19(2), 93-100. <https://doi.org/10.1080/2194587X.2018.1445645>.
- Hikmawati, V.Y., & Taufik, L.M. (2017). Urgensi Strategi Membaca pada Pembelajaran Biologi Masa Depan. *Jurnal Bio Educatio*, 2(2), 40-48.
- Kasim, T.S.A.T., & Yusoff, Y.M. (2014). Active Teaching Methods: Personal Experience of Integrating Spiritual and Moral Values. *Religious Education*, 109(5), 554-570.
- Khasanah, N., Sajidan, Sutarno, & Baskoro. (2017). Influence Integrated Science Model and Implementation Learning with the Unity of Science in Basic Biology Course to

Increase Critical Thinking. *International Journal of Science and Applied Science: Conference Series*, 1(2), 131-136.

Kudari, J.M. (2016). Survey on factors Influences the Student's Academic Performance. *International Journal of Emerging Research in Management & Technology*, 5(6), 30-36.

Lang, M., & Olson, J. (2000). Integrated science teaching as a challenge for teachers to develop new conceptual structures. *Research in Science Education*, 30(2), 213-224. <https://doi.org/10.1007/BF02461629>.

Listyono, Supardi, K.I., Hindarto, N., & Ridlo. (2018). Methods of Integrating Islamic Values in Teaching Biology for Shaping Attitude and Character. *IOP Conf. Series: Journal of Physics: Conf. Series* 983, 012178. doi :10.1088/1742-6596/983/1/012178.

Lubis, M. A. (2015). Effective Implementation of the Integrated Islamic Education. *Global Journal Al-Thaqafah*, 5(1), 59-68.

Mustami, M.K., Suyuti, M., & Maryam. (2017). Validitas, Kepraktisan, dan Efektivitas Perangkat Pembelajaran Biologi Integrasi Spritual Islam [Validity, Practicality, and Effectiveness of Islamic Spiritual Integration Biology Learning Tools]. *Jurnal Al-Qalam*, 23(1), 70-77.

Narmaditya, B.S., Wulandari, D., & Sakarji, S.R.B. (2018). Does Problem-Based Learning Improve Critical Thinking Skills? *Cakrawala Pendidikan*, 37 (3), 378-388.

Priatna, T. (2019). The Impact of the Integration of Islamic Learning and Science through Virtual Mechatronics Approach to Student Learning Outcomes at UIN Sunan Gunung Djati Bandung, West Java, Indonesia. *International Journal of Environmental & Science Education*, 14(8), 479-491.

Purwanto, B.E., Jatmiko, A., Pahrudin, A., Munifah., Wardhani, S., Purnama, S., & Joemsittiprasert, W. (2020). The Implementation of Cooperative Learning to Developed Management of Language Learning System. *Journal for the Education of Gifted Young Scientists*, 8(1), 379-392. doi: <http://dx.doi.org/10.17478/jegys.675251>.

Purwati, N., Zubaidah, S., Corebima, A. D., & Mahanal, S. (2018). Increasing Islamic Junior High School Students Learning Outcomes through Integration of Science Learning and Islamic Values. *International Journal of Instruction*, 11(4), 841-854. <https://doi.org/10.12973/iji.2018.11453a>.

Rahardjanto, A., & Susilowati, R. (2018). Study of Learning Strategy Integration of Science and Religion on the Development of Student Character. *Advances in Social Science, Education and Humanities Research*, 231, 645-648. <https://doi.org/10.2991/amca-18.2018.178>.

Rianti, S., & Usmeldi. (2019). Development of Integrated Science Student's Worksheet (LKPD) Based on Research-Based Learning Integrated with Religion Value. *IOP Conf. Series: Journal of Physics: Conf. Series* 1185, 012143. doi:10.1088/1742-6596/1185/1/012143.

- Ridwan, Adnan, & Bahri, A. (2018). Pengembangan E-Modul Biologi Berbasis Nilai Iman dan Taqwa pada Siswa MA Kelas XI [Development of Biology E-Module Based on Faith and Taqwa Values for MA Students in Class XI]. *Prosiding Seminar Nasional Biologi dan Pembelajarannya*, 419-424.
- Salam, M., Jafar., & Prajono, R. (2020). Effectiveness of Integrative Learning Models in Improving Understanding of Mathematical Concepts. *Journal for the Education of Gifted*, 8(2), 1005-1014. doi: <http://dx.doi.org/10.17478/jegys.666875>.
- Sholichah, A. S. (2018). Educational Theories in the Qur'an. *Journal of Islamic Education*. 7(1), 23-46.
- Sitorus, D.S., Siswandari., & Kristiani. (2019). The Effectiveness of Accounting E-Module Integrated with Character Value to Improve Students' Learning Outcomes and Honesty. *Cakrawala Pendidikan*, 38(1), 120-129. doi: 10.21831/cp.v38i1.20878.
- Sriatun, Linuwih, S., Sulhadi, & Aninditya. (2018). Development of Physics Learning Tools Contains Integration of Qur'an Values. *Advances in Social Science, Education and Humanities Research*, 247, 484-488. <https://dx.doi.org/10.2991/iset-18.2018.97>.
- Sudirman, S.A., Nurmandi, A., & Bashori, K. (2020). English Writing Skills Through Perception of Siri' Cultural Values: Optimism, Social Support, and Academic Self-Efficacy. *Cakrawala Pendidikan*, 39 (2), 242-256. doi:10.21831/cp.v39i2.26118.
- Sulayman, H. (2014). Values-Based Curriculum Model: A Practical Application of Integrated 'Masaqid Al-Sharia' for Wholness Development of Minkind. *Procedia-Social and Behavioral Sciences*, 123, 477-484. <https://doi.org/10.1016/j.sbspro.2014.01.1447>.
- Sunhaji. (2016). Teaching Model of Integrated Learning in the Islamic Religious Education of Rasise the Faith and Devotion of the Students of State's Senior Secondary Schools in Puwokerto City. *European Journal of Social Sciences*, 53(4), 317-325.
- Sunhaji. (2018). The Integration of Science-Technology and Living Environment through Islam Religion Education Leaning at Adiwiyata-Based Junior High School in Banyumas Regency. *Dinamika Ilmu*, 18(2), 179-193. doi: <http://dx.doi.org/10.21093/di.v18i2.1179>.
- Suryaningsih, Y. (2018). Penerapan Pembelajaran Biologi Berbasis Al-Qur'an Sebagai Metode untuk Pembentukan Karakter Siswa [Application of Al-Qur'an-Based Biology Learning as a Method for Character Building Students]. *Jurnal Bio Educatio*, 3(1), 22-33.
- Tambak, S., & Sukenti, D. (2020). Strengthening Islamic Behavior and Islamic Psychosocial in Developing Professional Madrasah Teachers. *Cakrawala Pendidikan*, 39 (1), 65-72. doi:10.21831/cp.v39i1.26001.
- Wei, B. (2018). An Exploratory Study of Teacher Development in the Implementation of Integrated Science Curriculum. *Research in Science Education*, 1-18. <https://doi.org/10.1007/s11165-018-9768-x>.

Winarno, N., Rusdiana, D., Riandi, R., Susilowati, E., & Afifah, R. M. A (2020). Implementation of Integrated Science Curriculum: A Critical Review of the Literature. *Journal for the Education of Gifted Young Scientists*, 8(2), 795-817. doi: <http://dx.doi.org/10.17478/jegys.675722>.

Yusup, I. R., Ukit, & Paujiah, E. (2018). Pengaruh Integrasi Nilai-Nilai Islam melalui Pendekatan Iman dan Taqwa (Imtaq) pada Hasil Belajar Sistem Reproduksi Manusia di MAN 2 Kota Bandung [Influence of Integration of Islamic Values through Faith and Taqwa Approach (Imtaq) on Learning Outcomes of Human Reproductive System at MAN 2 Bandung City]. *Bioilmi*, 4(2), 45-52.

Commented [MOU9]: use mendeley when making a bibliography, add doi or link of article in every article

RESPONSES TO REVIEWER'S COMMENTS/SUGGESTIONS

Manuscript ID: 130921

Reviewer 130921_a

The following changes have been made on the Manuscript “...” in accordance with reviewers’ comments

Reviewer’s comments (130921_a)	Changes made	Page (see highlights)
<p>Abstract [MOU1]: Avoid theory. Consider that you have made an informative summary including objectives, methods, scope, results and conclusions.</p>	<p>Thank you for the suggestion. We have summarized the abstract according to the suggestions given by the reviewer. We have revised some information regarding the objectives, methods, scope, results, and conclusions in the abstract section.</p> <p>Corrections made by the author: A preliminary study showed that Biology learning in the classroom could not encourage the integration of science concepts and Islamic values. The aims of this study are to (1) develop a new learning model that integrates scientific principles and Islamic values, and (2) characterize the RQANI model’s validity, practicability, and effectiveness. This study belonged to the research and development study. The learning model was developed in four stages, including (1) preliminary investigation, (2) design, (3) realization/implementation, and (4) test, evaluation, and revision. The study population included all biology education students at IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar in Indonesia. The study enrolled 120 fourth semester biology education students from IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar, Indonesia. The research instruments employed in this study are validation sheets for learning models, observation sheets for learning implementation, learning achievement tests, and response questionnaires for the learning model. The results of this study include: (1) a new learning model, namely RQANI, that consists of five learning stages (Reading, Questioning, Answering, Elaboration, Integration); (2) The validity of the RQANI prototype was very high with an average value of 3.74. The RQANI learning model was considered fairly practical and effective in improving student learning outcomes and positive responses. Therefore, it can be concluded that RQANI has met the requirements for a valid, practical and effective learning model.</p>	<p>It can be seen on page 1</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Introduction <i>The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation (Priatna, 2019) in Islam.</i></p> <p>[MOU2]: Correct this</p>	<p>Thank you for pointing this out. We have fixed it. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The results of observations and interviews with Biology students from IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar in South Sulawesi, Indonesia revealed that Biology classrooms rarely integrated Islamic values effectively. The biological concepts taught in the universities were focused more on the cognitive domain. In addition, the theories were presented through abstract and dense materials that were difficult for the students to understand. The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation in Islam (Priatna, 2019).</p>	<p>It can be seen on page 3.</p>
<p>Introduction <i>The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5).</i></p> <p>[MOU3]: Explain the concept</p>	<p>Thank you for the suggestion. We have explained the concept of the Surah Al-'Alaq. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5). This implies that studying science can help us strengthen our confidence in Allah SWT by educating us about the nature of human creation. Science and technology are advancing at a breakneck pace, placing an increasing need on Muslims to continue expanding and deepening knowledge while adhering to Islamic ideals.</p>	<p>It can be seen on page 3.</p>
<p>Introduction <i>Based on the explanation, research findings, and past studies presented above, it can be assumed that the development of a learning model that can integrate Islamic values into the concepts of science is necessary. The learning model developed should be able to connect concepts in Biology with the holy</i></p>	<p>Thank you for the suggestion. We have clarified the research hypothesis. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Based on the explanation, research findings, and past studies presented above, it can be assumed that the development of a learning model that can integrate Islamic values into the concepts of science is necessary. The learning model developed should be able to connect</p>	<p>It can be seen on page 4.</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p><i>verses of Al-Qur'an and Al-Hadith. The problems in this study were formulated into (1) How can a new integrated learning model be generated using the Plomp's development procedures? (2) How valid, practical and effective is the model in terms of its implementation in the classroom? It is expected that the results of this study can provide insights and information about the effectiveness of an integrated learning model with Islamic values in improving students' character, especially in facing the 21st century global challenges.</i></p> <p>[MOU4]: Clarify research hypothesis</p>	<p>concepts in Biology with the holy verses of Al-Qur'an and Al-Hadith. The problems in this study were formulated into (1) How can a new integrated learning model be generated using the Plomp's development procedures? (2) How valid, practical and effective is the model in terms of its implementation in the classroom?. The research hypothesis is formulated into the implementation of the RQANI learning model is effective in increasing biology students' learning achievement. It is expected that the results of this study can provide insights and information about the effectiveness of an integrated learning model with Islamic values in improving students' character, especially in facing the 21st century global challenges.</p>	
<p>Method <i>The current study was designed as a Research and Development (R&D) study. The procedures for developing the prototype were adopted from Plomp (2017), consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision</i></p> <p>[MOU5]: What is the theoretical research design you followed? How do you conduct Rn D research?</p>	<p>Thank you for the affirmative question on our research method. This research is a Research and Development (R&D) research by following the procedures of model development suggested by Plomp (2007). We have described the stages of the model development in the Methods section. Revisions are marked in red.</p> <p>Corrections made by the author: The current study was designed as a Research and Development (R&D) study. The product generated in this study is a new learning model called RQANI. The procedures for developing the prototype were adopted from (Plomp, 2007) consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision.</p>	It can be seen on pages 4-5.
<p>Method <i>The population of the study consisted of all students from the Department of Biology Education at IAIN Ternate, North Maluku, Indonesia; STKIP KIE Raha Ternate, North Maluku, Indonesia; and UIN Alauddin Makassar in South Sulawesi, Indonesia. The sample of the study contained (1) 40 students from the Department of Biology Education at IAIN</i></p>	<p>Thank you for the suggestion. We have added an explanation of the data collection process in the manuscript, including data to measure the effectiveness and practicality of the model being developed. Revised data are marked in red.</p> <p>Corrections made by the author: The population of the study consisted of all students from the Department of Biology Education at IAIN Ternate, North Maluku, Indonesia; STKIP KIE Raha Ternate, North</p>	It can be seen on page 6.

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p><i>Ternate, North Maluku; (2) 40 students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) 40 students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The sample groups were determined based on the characteristics and number of the students required for every research treatment. All of the sample classes were homogeneous based on the homogeneity test using grouping test data. This study was conducted from January 2020 until July 2020.</i></p> <p>[MOU6]: Explain what data will be processed</p>	<p>Maluku, Indonesia; and UIN Alauddin Makassar in South Sulawesi, Indonesia. The sample of the study contained (1) 40 students from the Department of Biology Education at IAIN Ternate, North Maluku; (2) 40 students from the Department of Biology Education at STKIP KIE Raha Ternate, North Maluku; and (3) 40 students from the Department of Biology Education at UIN Alauddin Makassar, South Sulawesi. The sample groups were determined based on the characteristics and number of the students required for every research treatment. All of the sample classes were homogeneous based on the homogeneity test using grouping test data. This study was conducted from January 2020 until July 2020. Analysis of variance (ANOVA) was used to determine the homogeneity of the research sample classes. Survey questionnaires, documentation, interviews, and field observations were used to collect preliminary data. Meanwhile, the field trial phase was carried out by validating the model, administering tests, and surveying responses. The observation sheets on the implementation of learning using the RQANI model was used to collect data on practicality, while the model's effectiveness was determined using learning achievement tests and student responses questionnaires.</p>	
<p>Method <i>Plomp's Development of Model</i></p> <p>[MOU7]: Need to explain contextually</p>	<p>Thank you for the suggestion. The contextual explanation of the <i>Plomp's Model Development</i> has been provided in the manuscript. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The procedure for developing the RQA learning model used in this study can be described as follows.</p> <p>1. Preliminary Investigation This phase established the initial circumstances for the curriculum and learning process. In general, this phase focused on doing preliminary research to establish the rationale for developing the RQANI model. This rationale relates to the investigation of learning theories that underpin the formation of and preliminary studies on variables in research. This step strove to ensure that the learning design is consistent with the analysis of biology learning needs, particularly the integration of Islamic values and the notion of biology. The purpose of this preliminary research was to ascertain the initial conditions for (1) biology education students at IAIN Ternate in North Maluku; (2) biology education students at STKIP KIE</p>	<p>It can be seen on page 4-5.</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
	<p>Raha Ternate in North Maluku; and (3) biology education students at UIN Alauddin Makassar in South Sulawesi.</p> <p>2. Design This phase was dedicated to the development of the RQANI learning model's design and idea. This phase was supposed to result in the following: (1) design of the learning syntax; (2) design of the social system or supportive learning environment; (3) design of the reaction principle; (4) design of the support system; and (5) design of the instructional impact of learning and accompaniment. This design process was documented in the draft RQANI model book.</p> <p>3. Realization/Implementation/Construction This phase was dedicated to developing the RQANI learning model. This phase involved validating the learning design with experts. The term "experts" refers to lecturers who are specialists in the field of education, particularly in the construction of instructional designs, as well as experts in the field of biological education science studies. Three lecturers served as validators: an expert lecturer in biology, an expert lecturer in education, and an expert lecturer in learning biology while incorporating Islamic principles.</p> <p>4. Test, evaluation, and revision This phase aimed to evaluate the RQANI learning model prototype's effectiveness. The activities included the following: (1) conducting focus group discussions (FGD) about the RQANI learning model prototype; (2) revising the RQANI learning model prototype based on input/suggestions from validators and the results of the FGD discussions; and (3) conducting limited tryouts about the RQANI learning model prototype. The purpose of the tryout was to determine the prototype's effectiveness, particularly in relation to the research variables of character and self-efficacy. The tryout phase was conducted with students of biology education at IAIN Ternate, North Maluku; STKIP KIE Raha Ternate, North Maluku; and UIN Alauddin Makassar, South Sulawesi.</p>	

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>Preliminary Investigation Results</p> <p>[MOU8]: Explain how you investigate the result</p>	<p>Thank you for the suggestion. We have provided an additional explanation of how we investigated the results of the preliminary investigation. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p><i>This phase aimed to identify the initial conditions for (1) biology education students at IAIN Ternate, North Maluku; (2) students of biology education STKIP KIE Raha Ternate, North Maluku; and (3) students of biology education at UIN Alauddin Makassar, South Sulawesi. Research data were collected through observation, interview, and survey questionnaires. Interviews were conducted with the coordinators of the study programs and biology lecturers at each of these universities.</i></p> <p>Preliminary investigation suggests that a learning model should be developed to integrate Islamic values into Biology learning at the Department of Biology Education of IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar, South Sulawesi.</p>	<p>It can be seen on page 7.</p>

<p>Findings <i>PT-A, PT-B, PT-C</i></p> <p>[MOU9]: What are they? Use common words, campus A, campus B ...</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C in Table 1. Preliminary Investigation Results. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Table.1 Preliminary Investigation Results</p> <table border="1"> <thead> <tr> <th rowspan="2">Aspect</th> <th colspan="3">Descriptions</th> </tr> <tr> <th>Campus A</th> <th>Campus B</th> <th>Campus C</th> </tr> </thead> <tbody> <tr> <td>Learning Activities</td> <td>Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.</td> <td>Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.</td> <td>50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.</td> </tr> <tr> <td>Learning Models</td> <td>Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.</td> <td>Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.</td> <td>Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.</td> </tr> <tr> <td>Learning methods</td> <td>The lecturers use discussion, lecturing and task-assignment methods to facilitate learning.</td> <td>The lecturers use discussion, lecturing, task-assignment and student presentation methods to facilitate learning.</td> <td>The lecturers use discussion, lecturing, task-assignment and investigation methods to facilitate learning.</td> </tr> <tr> <td>Learning materials</td> <td>Learning materials that can integrate Islamic values and Biology contents have not been developed properly.</td> <td>Learning materials that can integrate Islamic values and Biology contents have not been developed properly.</td> <td>Learning materials that can integrate Islamic values and Biology contents have not been developed properly.</td> </tr> <tr> <td>Learning facility</td> <td>The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.</td> <td>The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.</td> <td>The classroom environment is fine, but not every classroom is equipped with the LCD projector.</td> </tr> </tbody> </table>	Aspect	Descriptions			Campus A	Campus B	Campus C	Learning Activities	Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.	Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.	50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.	Learning Models	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.	Learning methods	The lecturers use discussion, lecturing and task-assignment methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and student presentation methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and investigation methods to facilitate learning.	Learning materials	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning facility	The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.	The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.	The classroom environment is fine, but not every classroom is equipped with the LCD projector.	<p>It can be seen on pages 7-9.</p>
Aspect	Descriptions																												
	Campus A	Campus B	Campus C																										
Learning Activities	Learning activities are dominated by teacher-centered methods. The lecturers teach biology concepts through lectures or assigning paper assignments to students. In general, Biology lecturers in the campus have not integrated Islamic values into the lessons.	Learning activities are dominated by teacher-centered methods. The lecturer's main role is to teach biology concepts to the students. Learning resources consist of teacher's books which do not contain Islamic values.	50% of the learning activities are dominated by teacher-centered methods. Active learning has been implemented in the classroom, yet learning resources still consist of teacher's books which do not contain Islamic values.																										
Learning Models	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, dominated by lectures. RQA has never been applied in the classroom.	Learning models that are commonly used by the lecturers include direct instruction, cooperative learning type STAD, group investigation, problem-based learning (PBL). RQA has never been applied in the classroom.																										
Learning methods	The lecturers use discussion, lecturing and task-assignment methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and student presentation methods to facilitate learning.	The lecturers use discussion, lecturing, task-assignment and investigation methods to facilitate learning.																										
Learning materials	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.	Learning materials that can integrate Islamic values and Biology contents have not been developed properly.																										
Learning facility	The classroom environment is fine, but the number of chairs is inadequate. Not every classroom is equipped with the LCD projector.	The classroom environment is fine, but not equipped with the LCD projector, air conditioner or fan.	The classroom environment is fine, but not every classroom is equipped with the LCD projector.																										

Reviewer's comments (130921_a)	Changes made				Page (see highlights)
	Campus facility	The campus has provided the students with a laboratory, libraries and wireless internet connection. However, practicum activities are rarely done in the laboratory, literature on Biology contents is still lacking. The internet connection is good around the rectorate building, faculty and library, but is weak if accessed from the classrooms.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The wi-fi signal is weak if accessed from the classrooms. The laboratory is not equipped with adequate practicum tools and materials. The libraries contain a limited number of books on biology.	The campus has provided the students with a laboratory, libraries and wireless internet connection. The laboratory is equipped with adequate practicum tools and materials. The department libraries, faculty libraries and central library contain an ample supply of books on biology number. The internet connection is good around campus.	
	Student's cognitive ability	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1) and understanding (C2), The students' critical thinking skills have not developed well and are in the low category.	In average, the students have medium cognitive ability. The students' ability to ask and argue is at the level of memorizing (C1), understanding (C2), and analyzing (C3). The students' critical thinking skills have not developed well and are in the low category.	
	Student's learning motivation	The students have poor learning motivation. They get easily bored because learning is dominated by lectures.	The students have poor learning motivation. They are unable to maintain their attention to every learning activity in the classroom.	The students have poor learning motivation. They need to experience learning that can integrate Islamic values and biology contents.	
	Student's self-efficacy	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom. Mostly, they are not certain about their own ideas and thinking process, so they cannot engage actively in the learning process.	The students have low self-efficacy. They lack confidence in asking, answering questions, discussing, and collaborating with other students in the classroom.	

Reviewer's comments (130921_a)	Changes made				Page (see highlights)
	Student's character values	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries and learning environment.	The students have poor character. They feel indifferent towards the campus facility, laboratory, libraries, learning environment and self development.	The students have poor character. The students' concern about the campus facility, laboratory, libraries, learning environment needs to be improved.	
	Student's active participation in learning	The students cannot engage actively in the learning process; learning activities are mostly dominated by the high achievers.	The students cannot engage actively in the learning process; learning activities are mostly dominated by particular groups of students. Less than 10% of the students are confident in asking and answering questions.	Not all of the students can engage actively in the learning process; learning activities are mostly dominated by the high achievers.	
	Student's interest	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology.	The students have low interest in learning biology. They are only attracted to particular themes. As a result, the students cannot optimize their performance in the standard of competence and basic competence set in the curriculum.	The students have low interest in learning biology. They lack of interest in analytic, conceptual and abstract concepts of biology. The students are in favor of investigative learning.	
	Student's responses towards Biology learning at the campus	The students have negative responses and perceptions on biology learning at the campus. They think that biology is dull, non-contextual, difficult to understand and requires memorization.	The students have negative responses towards biology learning at the campus. Stimulation needs to be provided so that the students can feel more comfortable and relaxed in understanding concepts in biology.	The students' positive responses towards biology learning at the campus need to be improved. The students sometimes face difficulty concentrating on the lessons.	
	Challenges faced by students in learning Biology	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge. New learning	It is difficult for the students to develop self-efficacy, character and learning motivation. Biology learning has not integrated Islamic values so that the students can only partially obtain the knowledge.	

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
	<p style="text-align: center;">models should be developed, such as the integration of active learning or contextual learning and Islamic values.</p> <hr/> <p>Notes: Campus A: IAIN Ternate, North Maluku, Indonesia Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia</p>	

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings Phase-3: Realization/Construction</p> <p>[MOU10]: Implementation</p>	<p>Thank you for pointing this out. Kami have revised the section according to the reviewer's suggestion.</p> <p>Corrections made by the author: Phase-3: Implementation/Realization/Construction</p>	<p>It can be seen on page 10</p>
<p>Findings <i>There are five learning phases in RQANI: Reading, Questioning, Answering, Elaboration, Integration. Lecturer's activities and student's activities in RQANI are presented in Table 2.</i></p> <p>[MOU11]: How do you integrate the activities with biology? Explain practically concept of RQANI in biology class.</p>	<p>Thank you for the suggestion. We have provided an additional explanation of how we integrate biological activity into the RQANI syntax. Revisions are marked in red.</p> <p>Corrections made by the author: <i>Biology instruction began by providing opportunities for pupils to read previously released material, in this case on the digestive system of food. Following that, each student was instructed to create a question and record it on the Student Worksheet (LKM). The results of their efforts were subsequently extended by students through interaction and discussion with their groupmates. Students studied the food digestive system materials and used an application already installed on their mobile phones to search up relevant holy verses from the Koran and Al'Hadith. They then recorded the interpretations of the Quran and Hadith on the Student Worksheet (LKM) and continued discussions about the concept of food intake in Islam, food metabolism in the body, body detoxification through fasting, various causes of digestive disorders, preventative measures for disease/digestive disorders, as well as health connections with tawakal and qonaah (gratitude).</i></p>	<p>It can be seen on page 11</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>[MOU13]: <i>How do you integrate the activities with biology?</i></p>	<p>Thank you very much for this insightful suggestion. We have added an explanation of how we integrated biology instructional activities into the social system of RQANI. Revisions are marked in red.</p> <p>Corrections made by the author: The integration of the RQANI model in biology learning in this study established multidirectional interactions between lecturers, students, intragroups and intergroups. Lecturers facilitated discussion by establishing a congenial and dynamic environment for the students, particularly during the elaboration and integration stages of RQANI. The topic was primarily about how to express thankfulness to Allah SWT for the privilege of enjoying a healthy body that is properly kept and cared for. Maintaining a healthy physique through the consumption of halal and thoyyib foods and beverages is a requirement for all Muslims.</p>	<p>It can be seen on page 12</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>[MOU14]: <i>How do you integrate the activities with biology?</i></p>	<p>Thank you very much for this insightful suggestion. We have added an explanation of how we integrated biology instructional activities into the reaction principles of RQANI. Revisions are marked in red.</p> <p>Corrections made by the author: The RQANI learning model provides opportunities for students to be actively involved in learning. The lecturer will allow the students to develop knowledge, construct understanding, elaborate on existing knowledge and understanding, and integrate that knowledge and understanding of the Islamic from the Al-Quran and Al-Hadith. The lecturer should facilitate and provide scaffolding if students experience difficulties in learning. The lecturer also have to provide feedback on comments, arguments, questions, answers, conclusions, ideas produced by the students in the classroom. If there is a misconception, the lecturer is obliged to provide clarification of the concept and additional explanation which is supported by strong and logical arguments and relevant references. The two-way interaction between the lecturer and students is expected to increase student's activity and learning autonomy so that they are able to overcome learning problems that have been identified in the previous stage, namely in the initial investigation phase. The following is an example of a lecturer's response to the arguments given by students in the integration phase.</p> <p><i>“The halal status of a food item is the most critical factor that Muslims must consider, particularly when it comes to food selection. The food must then be healthy (thayyib) and non-toxic to the body. It is expressly stated in the Qur'an that it is permissible to eat the fruits of the slaughter of the People of the Book, Q.S. Al-Ma'idah verse 5 states that the food (slaughter) of those who were given the Book is permissible for you, and your food is permissible for them as well.”</i></p>	<p>It can be seen on page 12</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>[MOU15]: <i>How do you integrate the activities with biology?</i></p>	<p>Thank you very much for this insightful suggestion. We have added an explanation of how we integrated biology instructional activities into the support system of RQANI. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The support system referred to in this study is additional requirements to implement the RQANI model, which includes learning tools and learning resources. Physical requirements can be in the form of Learning Implementation Plan (RPS), Lecture Program Unit (SAP), Student Activity Sheet (LKM), lecture dictates and supporting Information and Communication Technology (ICT) media. Non-physical requirements can be in the form of student psychological condition before conducting learning, lecturer's ability to manage learning in RQANI, good communication between the lecturer and students, and conducive learning atmosphere. Biology learning was facilitated in this study using cartoons and instructional films pertaining to the digestive system of food. Then, pupils were instructed to download the Al-Quran and its translation application to their cellphones. Additionally, the students were provided with Student WorkSheets (LKM) and texts pertaining to the food digestive system.</p>	<p>It can be seen on pages 12</p>
<p>Findings</p> <p><i>RPS, SAP, LKM</i></p> <p>[MOU16]: Use common words</p>	<p>Thank you for pointing this out. We use the terms Learning Implementation Plan (RPS), Lecture Program Unit (SAP), Student Worksheet (LKM). Revisions are marked in red</p> <p>Corrections made by the author:</p> <p>Physical requirements can be in the form of Learning Implementation Plan (RPS), Lecture Program Unit (SAP), Student Activity Sheet (LKM), lecture dictates and supporting Information and Communication Technology (ICT) media.</p>	<p>It can be seen on page 12</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings <i>The instructional impacts of Biology Learning using RQANI are:</i></p> <p>[MOU17]: How come? You need to elaborate the practical steps of biology learning using RQANI, so there will be causality.</p>	<p>Thank you very much for this insightful suggestion. We have done the revision based on the reviewer's suggestion. Revisions are marked in red.</p> <p>Corrections made by the author: The RQANI model was used to ensure that the learning objectives specified in the Learning Implementation Plan (RPS) and Lecture Program Unit (SAP) for the food digestive system material were met. The phases of RQANI learning have been shown to boost student engagement in biology instruction. This can be seen in the activity observation sheets, particularly in the increase in the number of students who ask and answer questions and make arguments about the digestive system's material. The third and fourth phases of RQANI have been shown to significantly improve students' elaboration and integration abilities in relation to the content being studied while maintaining Islamic beliefs. This is quantified using the student activity observation sheets and the student response questionnaire sheets during biology instruction utilizing the RQANI model. Following the RQANI learning process, a visible and quantifiable educational benefit was also observed in terms of enhancing student self-efficacy and character. The increase in scores following the application of the RQANI model demonstrates this.</p>	<p>It can be seen on page 12-13</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)																
<p>Findings</p> <p><i>Students from PT-A</i></p> <p>[MOU18]: Use common words</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C in Table 3. Students' Character Scores after the Implementation of RQANI.</p> <p>Corrections made by the author:</p> <p>Table 3 Students' Character Scores after the Implementation of RQANI</p> <table border="1" data-bbox="815 507 1776 628"> <thead> <tr> <th></th> <th>Pretest</th> <th>Post-Test</th> <th>Change (%)</th> </tr> </thead> <tbody> <tr> <td>Students from campus A</td> <td>46.75</td> <td>78.75</td> <td>72.60</td> </tr> <tr> <td>Students from campus B</td> <td>44.41</td> <td>73.69</td> <td>68.74</td> </tr> <tr> <td>Students from campus C</td> <td>41.08</td> <td>77.24</td> <td>89.73</td> </tr> </tbody> </table> <p>Notes: Campus A: IAIN Ternate, North Maluku, Indonesia Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia</p>		Pretest	Post-Test	Change (%)	Students from campus A	46.75	78.75	72.60	Students from campus B	44.41	73.69	68.74	Students from campus C	41.08	77.24	89.73	<p>It can be seen on page 14.</p>
	Pretest	Post-Test	Change (%)															
Students from campus A	46.75	78.75	72.60															
Students from campus B	44.41	73.69	68.74															
Students from campus C	41.08	77.24	89.73															
<p>Findings</p> <p><i>Students from PT-A</i></p> <p>[MOU19]: Use common words</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C in Table 4. Students' Self-Efficacy Scores after the Implementation of RQANI.</p> <p>Corrections made by the author:</p> <p>Table 4 Students' Self-Efficacy Scores after the Implementation of RQANI</p> <table border="1" data-bbox="815 1050 1751 1171"> <thead> <tr> <th></th> <th>Pretest</th> <th>Post-Test</th> <th>Change (%)</th> </tr> </thead> <tbody> <tr> <td>Students from campus A</td> <td>47.65</td> <td>75.28</td> <td>60.73</td> </tr> <tr> <td>Students from campus B</td> <td>43.37</td> <td>71.77</td> <td>67.03</td> </tr> <tr> <td>Students from campus C</td> <td>43.63</td> <td>75.78</td> <td>75.60</td> </tr> </tbody> </table> <p>Notes: Campus A: IAIN Ternate, North Maluku, Indonesia Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia</p>		Pretest	Post-Test	Change (%)	Students from campus A	47.65	75.28	60.73	Students from campus B	43.37	71.77	67.03	Students from campus C	43.63	75.78	75.60	<p>It can be seen on page 14.</p>
	Pretest	Post-Test	Change (%)															
Students from campus A	47.65	75.28	60.73															
Students from campus B	43.37	71.77	67.03															
Students from campus C	43.63	75.78	75.60															

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p><i>Effectivevess</i></p> <p>[MOU20]: ?</p>	<p>Thank you for pointing this out. We apologize; we typed it wrong. The word we mean is effectiveness. Revision is marked in red</p> <p>Corrections made by the author:</p> <p>The Validity, Practicality and Effectiveness of RQANI</p>	<p>It can be seen on page 14.</p>
<p>Findings</p> <p><i>The results of the expert validation on the learning model's syntax are summarized in Table 5.</i></p> <p>[MOU21]: <i>Is it expert validation or the result of RQANI? Who is the expert?</i></p>	<p>Thank you for the suggestion. Table 5 that we compiled summarizes the mean score from expert validation. The validation of the RQANI learning model was carried out by three professors from State Islamic Religious Universities (PTKIN) in Indonesia. The lecturers are specialists in the field of biology, education, and learning biology with the integration of Islamic values. The assessments of the three validators are what we averaged. Revisions are highlighted in red.</p> <p>Corrections made by the author:</p> <p>The validation of the RQANI learning model was carried out by three lecturers from the State Islamic Religious Universities (PTKIN) in Indonesia. They are experts in biology, biology education, and the integration of Islamic principles into biology teaching. The average of the three validators' ratings of the model was then determined. The results of the expert validation on the learning model's syntax are summarized in Table 5.</p>	<p>The revisions can be seen on page 14.</p>

Reviewer's comments (130921_a)	Changes made	Page (see highlights)																								
<p>Findings Based on the validation results of the learning syntax presented in Table 5, it can be concluded that the learning model was highly valid and feasible (3.67).</p> <p>[MOU22]: Why valid?</p>	<p>Thank you for pointing this out. We have added a validation score category in the research methods section, to be precise in the data analysis subsection. Additionally, we have included an explanation for why the score is considered valid. This is noted following the presentation of Table 5. The RQANI Syntax Validation Results. Revisions are highlighted in red.</p> <p>Corrections made by the author:</p> <p>According to the validation results for the learning syntax shown in Table 5, the average score for the RQANI model's overall assessment aspect was 3.74. When corrected for the validity category rules established by Nurdin (2017), this value falls within the range of $3.5 \leq M \leq 4$ (very valid). It may be inferred that the RQANI model is highly valid according to the validators, indicating that it is suitable for use in learning.</p>	<p>The revisions can be seen on page 16</p>																								
<p>Findings Students from PT-A</p> <p>[MOU23]: Use common words</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C in Table 7. Recapitulation of Students' Learning Achievement. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Table.7 Recapitulation of Student's Learning Achievement</p> <table border="1" data-bbox="815 986 1751 1161"> <thead> <tr> <th></th> <th>Campus A</th> <th>Campus B</th> <th>Campus C</th> </tr> </thead> <tbody> <tr> <td>Highest score</td> <td>93</td> <td>90</td> <td>98</td> </tr> <tr> <td>Lowest score</td> <td>82</td> <td>80</td> <td>86</td> </tr> <tr> <td>Score range</td> <td>11</td> <td>10</td> <td>12</td> </tr> <tr> <td>Mean score</td> <td>85.25</td> <td>83.19</td> <td>89.22</td> </tr> <tr> <td>Test Completion</td> <td>100</td> <td>100</td> <td>100</td> </tr> </tbody> </table>		Campus A	Campus B	Campus C	Highest score	93	90	98	Lowest score	82	80	86	Score range	11	10	12	Mean score	85.25	83.19	89.22	Test Completion	100	100	100	<p>It can be seen on page 17.</p>
	Campus A	Campus B	Campus C																							
Highest score	93	90	98																							
Lowest score	82	80	86																							
Score range	11	10	12																							
Mean score	85.25	83.19	89.22																							
Test Completion	100	100	100																							

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>PT-A</p> <p>[MOU24]: Use common words</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Notes:</p> <p>Campus A: IAIN Ternate, North Maluku, Indonesia</p> <p>Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia</p> <p>Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia</p>	<p>It can be seen on page 17.</p>

<p>Findings</p> <p><i>Students from PT-A</i></p> <p>[MOU25]: <i>Use common words</i></p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C in Table 8. Summary of Students' Responses towards RQANI. Revisions are highlighted in red.</p> <p>Corrections made by the author:</p> <p>Table 8 Summary of Students' Responses towards RQANI</p> <table border="1"> <thead> <tr> <th rowspan="2">No</th> <th rowspan="2">Statement</th> <th colspan="3">University</th> <th rowspan="2">Mean score</th> <th rowspan="2">Inter-achievement</th> </tr> <tr> <th>Campus A (%)</th> <th>Campus B (%)</th> <th>Campus C (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>For me, learning using RQANI is interesting.</td> <td>94.44</td> <td>94.44</td> <td>97.22</td> <td>95.37</td> <td>Very good</td> </tr> <tr> <td>2</td> <td>For me, learning using RQANI is fun.</td> <td>88.89</td> <td>91.67</td> <td>94.44</td> <td>91.67</td> <td>Very good</td> </tr> <tr> <td>3</td> <td>RQANI helps me follow the lesson well.</td> <td>86.11</td> <td>86.11</td> <td>88.89</td> <td>87.04</td> <td>Very good</td> </tr> <tr> <td>4</td> <td>RQANI helps me improve my learning motivation.</td> <td>88.89</td> <td>88.89</td> <td>91.67</td> <td>89.81</td> <td>Very good</td> </tr> <tr> <td>5</td> <td>RQANI helps me improve my collaboration skills.</td> <td>88.89</td> <td>94.44</td> <td>94.44</td> <td>92.59</td> <td>Very good</td> </tr> <tr> <td>6</td> <td>RQANI helps me improve my learning autonomy.</td> <td>83.33</td> <td>86.11</td> <td>88.89</td> <td>86.11</td> <td>Very good</td> </tr> <tr> <td>7</td> <td>RQANI helps me improve my self-efficacy.</td> <td>94.44</td> <td>94.44</td> <td>97.22</td> <td>95.37</td> <td>Very good</td> </tr> <tr> <td>8</td> <td>RQANI helps me improve my character.</td> <td>97.22</td> <td>94.44</td> <td>97.22</td> <td>96.30</td> <td>Very good</td> </tr> <tr> <td>9</td> <td>RQANI encourages me to be actively involved in learning.</td> <td>88.89</td> <td>88.89</td> <td>88.89</td> <td>88.89</td> <td>Very good</td> </tr> <tr> <td>10</td> <td>RQANI helps me improve my elaboration skills.</td> <td>88.89</td> <td>86.11</td> <td>86.11</td> <td>87.04</td> <td>Very good</td> </tr> <tr> <td>11</td> <td>RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).</td> <td>94.44</td> <td>94.44</td> <td>97.22</td> <td>95.37</td> <td>Very good</td> </tr> <tr> <td>12</td> <td>RQANI helps me improve my reading interest.</td> <td>91.67</td> <td>88.89</td> <td>91.67</td> <td>90.74</td> <td>Very good</td> </tr> <tr> <td>13</td> <td>RQANI helps me boost my confidence in asking questions.</td> <td>91.67</td> <td>91.67</td> <td>88.89</td> <td>90.74</td> <td>Very good</td> </tr> </tbody> </table>	No	Statement	University			Mean score	Inter-achievement	Campus A (%)	Campus B (%)	Campus C (%)	1	For me, learning using RQANI is interesting.	94.44	94.44	97.22	95.37	Very good	2	For me, learning using RQANI is fun.	88.89	91.67	94.44	91.67	Very good	3	RQANI helps me follow the lesson well.	86.11	86.11	88.89	87.04	Very good	4	RQANI helps me improve my learning motivation.	88.89	88.89	91.67	89.81	Very good	5	RQANI helps me improve my collaboration skills.	88.89	94.44	94.44	92.59	Very good	6	RQANI helps me improve my learning autonomy.	83.33	86.11	88.89	86.11	Very good	7	RQANI helps me improve my self-efficacy.	94.44	94.44	97.22	95.37	Very good	8	RQANI helps me improve my character.	97.22	94.44	97.22	96.30	Very good	9	RQANI encourages me to be actively involved in learning.	88.89	88.89	88.89	88.89	Very good	10	RQANI helps me improve my elaboration skills.	88.89	86.11	86.11	87.04	Very good	11	RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).	94.44	94.44	97.22	95.37	Very good	12	RQANI helps me improve my reading interest.	91.67	88.89	91.67	90.74	Very good	13	RQANI helps me boost my confidence in asking questions.	91.67	91.67	88.89	90.74	Very good	<p>It can be seen on pages 17-18.</p>
No	Statement			University					Mean score	Inter-achievement																																																																																													
		Campus A (%)	Campus B (%)	Campus C (%)																																																																																																			
1	For me, learning using RQANI is interesting.	94.44	94.44	97.22	95.37	Very good																																																																																																	
2	For me, learning using RQANI is fun.	88.89	91.67	94.44	91.67	Very good																																																																																																	
3	RQANI helps me follow the lesson well.	86.11	86.11	88.89	87.04	Very good																																																																																																	
4	RQANI helps me improve my learning motivation.	88.89	88.89	91.67	89.81	Very good																																																																																																	
5	RQANI helps me improve my collaboration skills.	88.89	94.44	94.44	92.59	Very good																																																																																																	
6	RQANI helps me improve my learning autonomy.	83.33	86.11	88.89	86.11	Very good																																																																																																	
7	RQANI helps me improve my self-efficacy.	94.44	94.44	97.22	95.37	Very good																																																																																																	
8	RQANI helps me improve my character.	97.22	94.44	97.22	96.30	Very good																																																																																																	
9	RQANI encourages me to be actively involved in learning.	88.89	88.89	88.89	88.89	Very good																																																																																																	
10	RQANI helps me improve my elaboration skills.	88.89	86.11	86.11	87.04	Very good																																																																																																	
11	RQANI helps me improve my ability to integrate biology concepts and Islamic values (the holy verses of the Al-Quran and Al-Hadith).	94.44	94.44	97.22	95.37	Very good																																																																																																	
12	RQANI helps me improve my reading interest.	91.67	88.89	91.67	90.74	Very good																																																																																																	
13	RQANI helps me boost my confidence in asking questions.	91.67	91.67	88.89	90.74	Very good																																																																																																	

Reviewer's comments (130921_a)	Changes made						Page (see highlights)	
	14	RQANI helps me improve my ability to answer questions.	86.11	86.11	91.67	87.96	Very good	
	15	RQANI improves my learning experience.	83.33	86.11	86.11	85.19	Very good	
	16	RQANI helps me realize that I need to study harder.	86.11	91.67	91.67	89.81	Very good	
	17	RQANI adds clarity to the learning material.	86.11	94.44	88.89	89.81	Very good	
	18	RQANI improves my curiosity.	88.89	86.11	88.89	87.96	Very good	
	19	RQANI helps me regulate learning.	86.11	83.33	86.11	85.19	good	
	20	RQANI helps me evaluate learning.	80.56	83.33	83.33	82.41	good	
	21	RQANI improves my critical thinking skills.	83.33	83.33	86.11	84.26	good	
	22	RQANI improves my argumentation and communication skills.	86.11	86.11	88.89	87.04	Very good	
	23	RQANI improves my social skills.	91.67	88.89	86.11	88.89	Very good	
	24	RQANI helps me develop cooperation and collaboration with classmates.	88.89	91.67	91.67	90.74	Very good	
	25	RQANI helps improve my concept mastery.	86.11	88.89	88.89	87.96	Very good	
		Mean score	88.44	89.22	90.44	89.37	Very good	

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>PT-A</p> <p>[MOU26]: Use common words</p>	<p>Thank you for pointing this out. We have changed PT-A to campus A, PT-B to campus B, PT-C to campus C. Revisions are highlighted in red.</p> <p>Corrections made by the author:</p> <p>Notes:</p> <p>Campus A: IAIN Ternate, North Maluku, Indonesia</p> <p>Campus B: STKIP KIE Raha Ternate, North Maluku, Indonesia</p> <p>Campus C: UIN Alauddin Makassar, South Sulawesi, Indonesia</p>	<p>It can be seen on page 18.</p>

<p>Findings</p> <p>[MOU27]: <i>It's still a mystery how you integrate biology into the classroom</i></p>	<p>Thank you very much for this fantastic suggestion. We have described contextually how to integrate biology learning through the RQANI model. We detail this explanation in the paragraph that explains the reading, questioning, answering, elaboration phases of RQANI. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Table 8 shows that the average score of students' responses towards the implementation of RQANI in IAIN Ternate, STKIP KIE Raha Ternate, UIN Alauddin Makassar was 89,37 and categorized very good. Syntax or learning stages are the basic steps that must be taken in implementing a learning model (Fuad et al., 2017; Purwanto et al., 2020).</p> <p>In this study, the reading stage for learning biology was conducted at the beginning of the session with the goal of providing students with an early comprehension of the lecture topic. As a learning resource, the lecturer created and distributed a textbook containing information about the digestive system. This is to ensure that the learning needs identified during the preliminary inquiry stage are met. After using the RQANI learning approach in the classroom, it was seen that students gained confidence in disputing and participating actively in elaboration and integration tasks. At this stage, each student is given the opportunity to read the material before entering the classroom, so the students can build initial knowledge that is useful for asking questions, answering questions, providing arguments and doing a discussion. This stage helps students gain understanding of a text by analyzing and interpreting it so that their learning autonomy can gradually increase. Student's initial knowledge is significantly influenced by experience in reading materials that are going to be studied or discussed in the classroom (Hikmawati & Taufik, 2017). In addition to improving student's cognitive ability, the development of reading interest also leads to the development of positive behavior towards the environment.</p> <p>After instructing students to study the textbook on the digestive system of food, the lecturer instructed them to practice writing questions on the Student Worksheet (LKM). Individual questions are ordered in a methodical manner, beginning with the simplest and progressing to the most complicated. <i>Questioning</i> in RQANI has the potential to stimulate students to formulate quality questions. At this stage, students are accustomed to asking questions that encourage reasoning skills and higher-order thinking skills. All students are required to be able and courageous to ask questions. The questions asked can activate their previous knowledge, focus their learning efforts and help them examine their knowledge. The act of arranging questions will focus students' attention on the learning content, main ideas, and</p>	<p>It can be seen on pages 18-19</p>
--	--	--------------------------------------

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
	<p>help them evaluate whether they have understood the material being studied. Continuous practice can build students' positive self-concept towards their potential. This positive self-concept will help the students to become more independent learners who have high self-efficacy.</p> <p>After compiling the questions, the lecturer allowed students to respond to the prepared questions. If they were having difficulty answering the question, they could consult a nearby friend to discuss possible proper responses. Answering in RQANI stimulates students' ability to answer questions effectively and efficiently. This phase can improve students' self-efficacy or self-confidence in opinions or arguments that are born from their respective learning experiences. They are trained to have the courage to answer questions both from peers and from the lecturer appropriately. This stage can also improve students' learning outcomes. Low academic self-efficacy will appear in situations that suppress students' emotional condition (Sudirman et al., 2020). It is vital to provide suitable learning settings to promote self-efficacy to develop career orientation in students (Kotova et al., 2021; Sides & Cuevas, 2020) and produce more professional competences (Dos Santos, 2020; Dwiretno & Setyarsih, 2018; Setyaningsih & Sunaryo, 2021). Educators are also required to provide learning resources such as student activity sheets to aid promote thinking orientation (Suhirman et al., 2021).</p> <p>The next stage in RQANI learning in biology learning assisted students in associating the concepts of the food digestive system material with occurrences that occur in everyday life. They studied the function of carbs, proteins, lipids, vitamins, minerals, water for daily body activity. They also explained probable ailments or digestive disorders that are typically observed on a regular basis. The students then wrote their conclusion of the activity on the Student Worksheet (LKM). Elaboration in RQANI provides an opportunity for students to work in groups to understand material that has been studied, have dialogue and discuss with their group members about difficult materials and solve everyday problems. This stage also trains students' cooperation and empathy skills so that they can improve their performance. Peer support can increase students' self-confidence and motivation, which in turn can increase self-efficacy. Students who initially have low self-concept and self-efficacy can be motivated through support and assistance provided by more capable/expert peers. Peer support can help these students improve their self-concept and learning patterns for the better. Social control and continuous evaluation also need to be done to continuously</p>	

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
	monitor changes in student behavior towards a positive direction (Sitorus et al., 2019). Collaboration is required in the design of learning to promote student motivation and self-confidence (Anwar et al., 2020).	

<p>Findings</p> <p>[MOU28]: RQANI is a teaching and learning method and is not only a concept. You should explain the method contextually. You have to relate this method to the biology being taught.</p>	<p>Thank you very much for this fantastic suggestion. We have added a contextual explanation of how to integrate biology learning through the RQANI model. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The following stage is the integration of biology studies with the Qur'an and Hadith values. The students in this study discussed the concept of food intake in Islam, the process of food metabolism in the body, body detoxification through fasting, various causes of digestive disorders, preventative measures for disease/digestive disorders, and the relationship between health and tawakal and qonaah (gratitude). These students had been urged to install the Al-Quran application and its translation on their own mobile phones to assist with this stage. The students were then instructed to jot down Qur'anic verses and their associated interpretations on the accompanying Student Worksheet (LKM). This activity was carried out in groups. <i>Integration</i> in RQANI provides an opportunity for students to discuss with their peers about how to integrate biology concepts and the holy verses of the Al-Quran and Al-Hadith. Through the integration of learning with the holy verses of Al-Quran and Al-Hadith, this phase teaches students that every concept in Biology is contextually related to everyday life. The following is an illustration of the integration results obtained by one of the groups in biology education that used the RQANI model.</p> <p><i>“Biology is a branch of science that studies organisms, life and the environment around them. Al-Qur'an and Al-Hadith contain a complete and perfect system that covers all aspects of human life, including scientific activities or scientific investigations. One of the physiology that occurs in the body is the food process. Allah SWT makes it easy for humans to obtain energy intake from food they eat, whereas plants carry out the photosynthesis process. Meanwhile, herbivorous animals obtain energy by consuming plants, carnivorous animals obtain energy by consuming meat and omnivorous animals consume plants and animals to survive. In the Al-Qur'an, humans have been instructed to choose good food (Q.S Al-Baqarah verse 168, Q.S Yunus verse 59, Q.S Luqman verse 20, Q.S Al-Maidah verse 5; H.R Ahmad). The integration of biology learning with Islamic values can increase gratitude for all of Allah's creation. Biology learning is essentially a bridge to religious truth. It supports the understanding of the Al-Quran verses, especially those related to the greatness of Allah SWT that exist in nature and in living creatures, including humans (Ridwan, Adnan, & Bahri, 2018).”</i></p>	<p>It can be seen on pages 20.</p>
--	--	------------------------------------

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
<p>Findings</p> <p>[MOU29]: <i>These should be on theoretical framework/introduction.</i></p>	<p>Thank you for the suggestion. We have moved that part of the introduction. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The results of observations and interviews with Biology students from IAIN Ternate, North Maluku, STKIP KIE Raha Ternate, North Maluku, and UIN Alauddin Makassar in South Sulawesi, Indonesia revealed that Biology classrooms rarely integrated Islamic values effectively. The biological concepts taught in the universities were focused more on the cognitive domain. In addition, the theories were presented through abstract and dense materials that were difficult for the students to understand. The presentation of Biology concepts was not associated with the context of students' daily lives nor integrated with Islamic values. In some cases, the lecturers and the students had difficulty integrating Islamic studies into the science learning process so that it failed to conform to the paradigm of science and revelation in Islam (Priatna, 2019). The first revelation received by the Prophet Muhammad contained the command to master science on the basis of faith (Al-'Alaq, 1-5). This implies that studying science can help us strengthen our confidence in Allah SWT by educating us about the nature of human creation. Science and technology are advancing at a breakneck pace, placing an increasing need on Muslims to continue expanding and deepening knowledge while adhering to Islamic ideals.</p> <p>The role of lecturers in learning is not only to transfer knowledge, but also to integrate moral and spiritual values, build student's personality and character by facilitating, motivating and guiding students through meaningful learning (Kasim & Yusoff, 2014). Furthermore, argues that through a combination of content material, student's academic skills and interactive skills, educators can bring a positive impact to learning and to the development of the students (Kudari, 2016). According to (Hakim, 2012), the integration of Islamic values into the classroom can be done by combining science and Islamic teachings. Learning materials that are integrated with Islamic values will motivate students to change the way they think and behave (Purwati et al., 2018). Research conducted by (Baba et al., 2016) shows that the integration of Islamic values, directly or indirectly, makes the learning process more valuable and meaningful.</p>	<p>It can be seen on pages 3-4.</p>

<p>Conclusion</p> <p>[MOU30]: <i>After doing some revision, you need to fit the conclusion with the brand-new revision.</i></p>	<p>Thank you for the suggestion. We have done some revisions on the conclusion section. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The development of a learning model through the Plomp procedures conducted in this study resulted in a new learning model called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). RQANI consists of five learning phases namely Reading, Questioning, Answering, Elaboration and Integration. The validity of the RQANI prototype was very high with an average value of 3.74. The RQANI learning model was considered fairly practical and effective in improving student's learning outcomes and positive responses. As a result, the RQANI model has satisfied the validity, practicability, and effectiveness criteria for a high-quality learning model.</p> <p>It is hoped that this study can provide a reference for lecturers of biology education and lecturers of other subjects to implement RQANI in the classroom as an effort to improve the quality of the integrated science-Islamic values. The results of this study can also provide insights for teachers in SMP/MTs and SMA /MA about the effectiveness of the RQANI learning model in improving the quality of learning and in creating a learning atmosphere that is more conducive, innovative and integrative.</p> <p>Despite the significance of the findings, we acknowledge a limitation to the study. The tryout conducted at the Test, Evaluation and Revision phase was only limited to four-meeting lessons due to the Covid-19 outbreak. Therefore, future studies may need to involve a quasi experimental design to examine the effect of RQANI on science process skills, critical thinking skills, metacognitive skills, argumentation skills, communication skills and scientific literacy skills of students with different academic abilities, different gender and different ethnic backgrounds.</p> <p>The development of the RQANI model has the potential to significantly improve the quality of science education, particularly in biology, by incorporating Islamic principles. This form of education can assist students in merging the relationship between what they have learned and what they already know from daily experience, as well as their integration with Islamic principles. This can have a good effect on students' character development and self-efficacy, as well as their active participation in school activities. Students who pass on positive beliefs about the ability to investigate, elaborate, integrate, reflect, and condition spiritually can benefit from this. All of these abilities can be developed into life skills for</p>	<p>It can be seen on pages 20-21.</p>
---	--	---------------------------------------

Reviewer's comments (130921_a)	Changes made	Page (see highlights)
	learners as they prepare to tackle the challenges of learning in a globalized, comprehensive digital era.	

RESPONSES TO REVIEWER'S COMMENTS/SUGGESTIONS

Manuscript ID: 130921

Reviewer 130921_c

The following changes have been made on the Manuscript “...” in accordance with reviewers’ comments

Reviewer’s comments (130921_c)	Changes made	Page (see highlights)
<p>Title</p> <p><i>RQANI: A Learning Model that Integrates Science Concepts and Islamic Values</i></p> <p>[MOU1]: Add some sentence “Biology Learning”</p>	<p>Thank you very much for this insightful suggestion. We have done revising the title.</p> <p>Corrections made by the author: <i>RQANI: A Learning Model that Integrates Science Concepts and Islamic Values in Biology Learning.</i></p>	<p>It can be seen on page 1.</p>
<p>Abstract</p> <p><i>Through the Plomp’s development procedure, this study successfully generated a new learning model, called RQANI (Reading, Questioning, Answering and Integration with Islamic Values). Learning in RQANI is conducted in five phases, namely Reading, Questioning, Answering, Elaboration and Integration. The results of the study also proved that RQANI was valid, practical and effective.</i></p> <p>[MOU2]: In the abstract add research objectives, research methods, population and sample, research results, show calculation RQANI was Valid, Practical and Effective</p>	<p>Thank you very much for this fantastic suggestion. We have revised the abstract section by adding research objectives, research methods, population and sample, research results. We also provide an explanation regarding the validity, practicality, and effectiveness measurement of the RQANI model. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>A preliminary study showed that Biology learning in the classroom could not encourage the integration of science concepts and Islamic values. <i>The aims of this study are to (1) develop a new learning model that integrates scientific principles and Islamic values, and (2) characterize the RQANI model’s validity, practicability, and effectiveness. This study belonged to the research and development study. The learning model was developed in four stages, including (1) preliminary investigation, (2) design, (3) realization/implementation, and (4) test, evaluation, and revision. The study population included all biology education students at IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar in Indonesia. The study enrolled 120 fourth semester biology education students from IAIN Ternate, STKIP KIE Raha Ternate, and UIN Alauddin Makassar, Indonesia. The research instruments employed in this study are validation sheets for learning models, observation</i></p>	<p>It can be seen on page 1.</p>

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>sheets for learning implementation, learning achievement tests, and response questionnaires for the learning model. The results of this study include: (1) a new learning model, namely RQANI, that consists of five learning stages (Reading, Questioning, Answering, Elaboration, Integration); (2) The validity of the RQANI prototype was very high with an average value of 3.74. The RQANI learning model was considered fairly practical and effective in improving student learning outcomes and positive responses. Therefore, it can be concluded that RQANI has met the requirements for a valid, practical and effective learning model.</p>	
<p>Introduction</p> <p>[MOU3]: Very poor references, especially related to the development of learning models. Please add more references about previous research from 2018-2021, then add more references about Plomp's and what problem at biology learning which makes it must be integrated Science Concepts and Islamic values</p>	<p>Thank you very much for this fantastic suggestion. We have added some current references from 2018-2021 to the introduction. We also add an explanation regarding the problems behind why there is a need for a learning model that integrates science and Islamic values. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The integration of Islamic values into science learning must be supported by an effective learning approach or model (Anshori, 2021; Lubis, 2015). Scientific truth does not only refer to evidence-based reasons but also results from questions about identity, meaning, purpose and beliefs (Jacobsen & Jacobsen, 2018). The scientific characteristics of biology learning include products, processes, attitudes, technology, and strategic tools to develop various aspects of learning (cognitive, affective, and psychomotor) which are very important in shaping students' character and morals. In achieving its ultimate goals, the Islamic education system integrates and harmonizes the interests of the world and the interests of the hereafter (QS Al-Qashash, 77). Integration is the keyword guaranteeing that there is no separation between religion and science (Mustami et al., 2017). Integrated learning has been proven able to train students' critical thinking skills and build their systematic knowledge (Salam et al., 2020). Effective integrated learning can also improve students' learning skills (Winarso et al., 2020). Research conducted by (Winarso & Wahid, 2020), explains that the development of Al-Quran integrated mathematics learning models and tools is effective in developing the spiritual and religious attitudes of students in schools. Education that is integrated with the Al-Quran and Al-Sunnah can be carried out by educators by implementing models, strategies, approaches and learning methods that</p>	<p>It can be seen on pages 1-3.</p>

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>combine learning materials with the values of the Qur'an and Al-Sunnah (Lubis, 2015; Munifah et al., 2020).</p> <p>Learning that integrates Islamic values is able to develop students' thinking skills holistically (Purwati et al., 2018; Sriatun et al., 2018; Sunhaji, 2018). Islamic values in science have the potential to help students acquire attitudes, develop character, understand their strengths and weaknesses, and recognize the truth in everyday life in society (Listyono et al., 2018). Strengthening values-based teaching is able to gradually build a strong moral foundation that plays an important role in influencing current and future decision-making and attitudes (Sulayman, 2014; Tambak & Sukenti, 2020). Integrated science learning using a guided discovery model and problem-based learning has been proven able to improve students' scientific literacy (Ardianto & Rubini, 2016; Narmaditya et al., 2018). Integrated learning can shape the concept of science teaching and increase collaboration between educators and students (Lang & Olson, 2000; Wei, 2020). According to observations and interviews with science teachers at an Integrated Islamic School, they have encountered problems thus far in creating a learning method that incorporates Islamic values with scientific concepts (Sintia & Violita, 2020). Weak integration of science and religion has been repeatedly identified as a barrier to the advancement of science, technology, and social transformation. The Director General of Islamic Education of Indonesia has instructed the Chancellor of Islamic Higher Education (PTI) to study, develop and organize the integration of religion and science (Ali, 2020). It is vital to incorporate Islamic ideals into educational practices to develop pupils who possess self-control and who embody the spirit of Islam in all parts of life (Demina et al., 2019; Kosasih et al., 2020).</p> <p>The benefits obtained from developing a learning model that integrates science and religion include increasing students' understanding of religion, deepening students' value-based knowledge, increasing the implementation of science practices in daily life, developing students' character (Adegboyega, 2018; Farihah & Septiadi, 2019; Rahardjanto & Susilowati, 2018; Suryaningsih, 2015), developing students' competence, moral values and responsibility (Ranti & Usmeldi, 2019), and providing more meaningful learning experiences (Yusuf et al., 2018). Character building through the integration of science with Islamic values can help students maintain responsibility for learning and develop ethics in the classroom (Berkowitz & Bier, 2005). It has been proven that a new mathematics learning model that incorporates Islamic principles, called the Qur'an-based learning</p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>approach (QBL) makes learning more meaningful and can effectively internalize Islamic values (Suroso et al., 2018). Internalization of Islamic principles in chemistry education might help students to elaborate on concepts, internalize specific Qur'anic verses, and internalize descriptions and the characteristics contained within them. The development of a learning model that incorporates Islamic values and Minangkabau indigenous wisdom using the plomp model design results in a valid and feasible model that contributes to the realization of a comprehensive Islamic education between parents, schools, and the community (Kosim et al., 2020).</p> <p>The principles taught in the Qur'an serve as a reference for producing theory and developing learning (Sholichah, 2018). In fact, it is difficult to implement a teaching and learning process that can instill religious values in students and that can connect science and religion (Badlisyah & Munawwarah, 2018). Learning often runs independently and is not integrated with religious values, because it is often assumed that religion is only limited to religious practices. The non-contextual teaching and learning process will hinder the development of students' ability to think holistically and make it difficult for them to relate the concepts they learn in the classroom to their daily life as a Muslim (Khasanah et al., 2017; Sunhaji, 2018). As a result, students are not given the opportunity to experience learning in real-world contexts. Students at Islamic institutions not only learn how to theoretically prove information about Islamic learning and science, but also how to solve numerous problems involving religious concerns using a scientific method (Priatna, 2019). Integrating Islamic values using a learning model integrated with an e-learning platform can improve students' attitudes and attention to Islamic principles (Syarif, 2020). The Integrative Curriculum (IC) is a proven method for infusing Islamic beliefs into biology education. The Plomp development design was used to create learning materials that incorporate this integrative concept and approach (Ibrahim et al., 2018).</p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
<p>Method</p> <p><i>The current study was designed as a Research and Development (R&D) study. The procedures for developing the prototype were adopted from Plomp (2017),</i></p> <p>[MOU4]: plomp 2007 or 2017?</p>	<p>Thank you for pointing this out. We apologize; we typed it wrong. The revision is marked in red.</p> <p>Corrections made by the author: The product generated in this study is a new learning model called RQANI. The procedures for developing the prototype were adopted from (Plomp, 2007) consisting of: (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision.</p>	<p>It can be seen on page 4.</p>
<p>Method</p> <p>[MOU5]: Please explain every step, from (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation and revision</p>	<p>Thank you for the suggestion, we have added explanations regarding (1) preliminary investigation; (2) design; (3) realization; (4) test, evaluation, and revision. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The procedure for developing the RQA learning model used in this study can be described as follows.</p> <p>1. Preliminary Investigation This phase established the initial circumstances for the curriculum and learning process. In general, this phase focused on doing preliminary research to establish the rationale for developing the RQANI model. This rationale relates to the investigation of learning theories that underpin the formation of and preliminary studies on variables in research. This step strove to ensure that the learning design is consistent with the analysis of biology learning needs, particularly the integration of Islamic values and the notion of biology. The purpose of this preliminary research was to ascertain the initial conditions for (1) biology education students at IAIN Ternate in North Maluku; (2) biology education students at STKIP KIE Raha Ternate in North Maluku; and (3) biology education students at UIN Alauddin Makassar in South Sulawesi.</p> <p>2. Design This phase was dedicated to the development of the RQANI learning model's design and idea. This phase was supposed to result in the following: (1) design of the learning syntax; (2) design of the social system or supportive learning environment; (3) design of the reaction principle; (4) design of the support system; and (5) design of the instructional</p>	<p>It can be seen on page 4-5.</p>

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>impact of learning and accompaniment. This design process was documented in the draft RQANI model book.</p> <p>3. Realization/Implementation/Construction This phase was dedicated to developing the RQANI learning model. This phase involved validating the learning design with experts. The term "experts" refers to lecturers who are specialists in the field of education, particularly in the construction of instructional designs, as well as experts in the field of biological education science studies. Three lecturers served as validators: an expert lecturer in biology, an expert lecturer in education, and an expert lecturer in learning biology while incorporating Islamic principles.</p> <p>4. Test, evaluation, and revision This phase aimed to evaluate the RQANI learning model prototype's effectiveness. The activities included the following: (1) conducting focus group discussions (FGD) about the RQANI learning model prototype; (2) revising the RQANI learning model prototype based on input/suggestions from validators and the results of the FGD discussions; and (3) conducting limited tryouts about the RQANI learning model prototype. The purpose of the tryout was to determine the prototype's effectiveness, particularly in relation to the research variables of character and self-efficacy. The tryout phase was conducted with students of biology education at IAIN Ternate, North Maluku; STKIP KIE Raha Ternate, North Maluku; and UIN Alauddin Makassar, South Sulawesi.</p>	
<p>Method</p> <p>[MOU6]: Plomp's Development of Model Add original references</p>	<p>Thank you for pointing this out. We have revised this. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Plomp's Development of Model (Plomp, 2007)</p>	<p>It can be seen on page 4.</p>

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
<p>Findings</p> <p><i>Based on the validation results of the learning syntax presented in Table 5, it can be concluded that the learning model was highly valid and feasible (3.67).</i></p> <p>[MOU7]: add your reference stating your calculation is valid</p>	<p>Thank you for pointing this out. We have added a validation score category in the research methods section, to be precise in the data analysis subsection. Additionally, we have included an explanation for why the score is considered valid. This is noted following the presentation of Table 5. The RQANI Syntax Validation Results. Revisions are highlighted in red.</p> <p>Corrections made by the author:</p> <p>According to the validation results for the learning syntax shown in Table 5, the average score for the RQANI model's overall assessment aspect was 3.74. When corrected for the validity category rules established by Nurdin (2017), this value falls within the range of $3.5 \leq M \leq 4$ (very valid). It may be inferred that the RQANI model is highly valid according to the validators, indicating that it is suitable for use in learning.</p>	<p>It can be seen on pages 15-16 and 6.</p>
<p>Conclusion</p> <p>[MOU8]: <i>add implications of your research</i></p>	<p>Thank you for pointing this out. We have added the implications of our study in the conclusion section. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>The development of the RQANI model has the potential to significantly improve the quality of science education, particularly in biology, by incorporating Islamic principles. This form of education can assist students in merging the relationship between what they have learned and what they already know from daily experience, as well as their integration with Islamic principles. This can have a good effect on students' character development and self-efficacy, as well as their active participation in school activities. Students who pass on positive beliefs about the ability to investigate, elaborate, integrate, reflect, and condition spiritually can benefit from this. All of these abilities can be developed into life skills for learners as they prepare to tackle the challenges of learning in a globalized, comprehensive digital era.</p>	<p>It can be seen on pages 20-21.</p>

<p>Reference</p> <p>[MOU9]: use mendeley when making a bibliography, add doi or link of article in every article</p>	<p>Thank you for the suggestion. We have used the Mendeley application to write the references, as well as added the articles' DOI according to reviewer's suggestion. Revisions are marked in red.</p> <p>Corrections made by the author:</p> <p>Adegboyega, L. O. (2018). Influence of Achievement Motivation on Nigerian Undergraduates' Attitude towards Examination. <i>International Journal of Instruction</i>, 11(1), 77–88. https://doi.org/10.12973/iji.2018.1116a</p> <p>Ali, N. (2020). Integrating Science and Religion in the Curriculum of Indonesian Islamic Higher Education: A Case Study of UIN Malang. <i>International Journal of Innovation, Creativity and Change</i>, 13(9), 948–960.</p> <p>Anshori, I. (2021). Problem-Based Learning Remodelling Using Islamic Values Integration and Sociological Research in Madrasas. <i>International Journal of Instruction</i>, 14(2), 421–442. https://doi.org/10.29333/iji.2021.14224a</p> <p>Anwar, K., Asari, S., Husniah, R., & Asmara, C. H. (2020). Students' Perceptions of Collaborative Team Teaching and Student Achievement Motivation. <i>International Journal of Instruction</i>, 14(1), 325–344. https://doi.org/10.29333/IJI.2021.14119A</p> <p>Ardianto, D., & Rubini, B. (2016). Comparison of Students' Scientific Literacy in Integrated Science Learning through Model of Guided Discovery and Problem Based Learning. <i>Jurnal Pendidikan IPA Indonesia</i>, 5(1), 31–37. https://doi.org/10.15294/jpii.v5i1.5786</p> <p>Baba, S. Bin, Salleh, M. J., Zayed, T. M., & Harris, R. (2016). A Qur'anic Methodology for Integrating Knowledge and Education: Implications for Malaysia's Islamic Education Strategy. <i>American Journal of Islamic Social Sciences</i>, 32(2), 1–30. https://doi.org/10.35632/ajiss.v32i2.262</p> <p>Badlisyah, T., & Munawwarah, W. (2018). Pengembangan Modul Pembelajaran Kimia Materi Struktur Atom Berbasis Al-Quran Di SMAN 1 Aceh Barat Daya. <i>Lantanida Journal</i>, 5(2), 93–196. https://doi.org/10.22373/lj.v5i2.2835</p> <p>Berkowitz, M. W., & Bier, M. C. (2005). What Works in Character Education: A Research-Driven Guide for Educators. In <i>Washington DC: University of Missouri-St Louis</i>.</p> <p>Demina, D., Effendi, Z. M., Ananda, A., & Damansyah, D. (2019). Application of Integrated Learning Model on Islamic Education in Improving Students Self Control in Madrasah Ibtidaiyah. <i>Advances in Social Science, Education and Humanities Research</i>, 178, 65–70. https://doi.org/10.2991/icoie-18.2019.16</p>	<p>It can be seen on pages 21-26.</p>
--	---	---------------------------------------

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>Dos Santos, L. M. (2020). Self-Efficacy and Career Decision of Pre-Service Secondary School Teachers: A Phenomenological Analysis. <i>International Journal of Instruction</i>, 14(1), 521–536. https://doi.org/10.29333/IJI.2021.14131A</p> <p>Dwiretno, G., & Setyarsih, W. (2018). Pembelajaran Fisika Menggunakan Model Argument Driven Inquiry (ADI) Untuk Melatihkan Kemampuan Argumentasi Ilmiah Peserta Didik. <i>Inovasi Pendidikan Fisika</i>, 7(2), 337–340.</p> <p>Farihah, U., & Septiadi, D. D. (2019). The Development of Natural Science Learning Material Integrated with Islamic Values to Attract Santris' Interest in Learning the Human Digestive System. <i>IOP Conference Series: Earth and Environmental Science</i>, 243(1). https://doi.org/10.1088/1755-1315/243/1/012049</p> <p>Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. (2017). Improving Junior High Schools' Critical Thinking Skills Based on Test Three Different Models of Learning. <i>International Journal of Instruction</i>, 10(1), 101–116. https://doi.org/10.12973/iji.2017.1017a</p> <p>Hakim, L. (2012). Nilai-Nilai Islam, Sikap dan Perilaku Siswa Sekolah Dasar Islam Terpadu Al-Muttaqin Kota Tasikmalaya. <i>Jurnal Pendidikan Agama Islam-Ta'lim</i>, 10(1), 67–77. http://jurnal.upi.edu/file/5_Penanaman_Nilai.pdf%0Ahttps://media.neliti.com/media/publications/108820-ID-penerapan-strategi-pembelajaran-kreatif.pdf</p> <p>Hikmawati, V. Y., & Taufik, L. M. (2017). Urgensi Strategi Membaca pada Pembelajaran Biologi Masa Depan. <i>Bio Educatio</i>, 2(2), 40–48.</p> <p>Ibrahim, Yusoff, N., Awang, M. I., & Marwan. (2018). Learning of Reproduction System with an Integrative Curriculum Approach in Junior High School. <i>Journal of Physics: Conference Series</i>, 1088(012013), 1–7. https://doi.org/10.1088/1742-6596/1088/1/012013</p> <p>Jacobsen, D., & Jacobsen, R. H. (2018). Faith and Learning in a Post-Truth World. <i>Journal of College and Character</i>, 19(2), 93–100. https://doi.org/10.1080/2194587x.2018.1445645</p> <p>Kasim, T. S. A. T., & Yusoff, Y. M. (2014). Active Teaching Methods: Personal Experience of Integrating Spiritual and Moral Values. <i>Religious Education</i>, 109(5), 554–570. https://doi.org/10.1080/00344087.2014.956560</p> <p>Khasanah, N., Sajidan, S., Sutarno, S., & Baskoro, B. (2017). Influence Integrated Science Model and Implamantation Learning with the Unity of Science in Basic Biology</p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>Course to Increase Critical Thinking. <i>International Journal of Science and Applied Science: Conference Series</i>, 1(2), 131–136. https://doi.org/10.20961/ijscascs.v1i2.5136</p> <p>Kosasih, A., Rizal, A. syamsul, & Asyafah, A. (2020). Values' Education Model for Islamic Education Institutions in Indonesia: A Study of Al-Basyariyah Modern Islamic School. <i>Multicultural Education</i>, 6(1), 88–104. https://doi.org/10.5281/zenodo.3827732</p> <p>Kosim, M., Samad, D., Nasution, I., Kustati, M., Rivauzi, A., & Anidar, J. (2020). Cadre Model Inspirative Based on Islamic Parenting and Minangkabau Local Wisdom. <i>Advances in Social Science, Education, and Humanities Research</i>, 458, 354–362. https://doi.org/10.2991/assehr.k.200803.044</p> <p>Kotova, S., Hasanova, I., Sadovnikova, N., Komarov, E., & Wenbin, L. (2021). Self-Efficacy as a Personality Predictor of the Career Orientations of College Students. <i>International Journal of Instruction</i>, 14(4), 1047–1064. https://doi.org/10.29333/iji.2021.14460a</p> <p>Kudari, J. M. (2016). Survey on the Factors Influences the Students' Academic Performance. <i>International Journal of Emerging Research in Management & Technology</i>, 5(6), 2278–9359.</p> <p>Lang, M., & Olson, J. (2000). Integrated Science Teaching as a Challenge for Teachers to Develop New Conceptual Structures. <i>Research in Science Education</i>, 30(2), 213–224. https://doi.org/10.1007/BF02461629</p> <p>Listyono, Supardi, K. I., Hindarto, N., & Ridlo, S. (2018). Methods of Integrating Islamic Values in Teaching Biology for Shaping Attitude and Character. <i>Journal of Physics: Conference Series</i>, 983(1). https://doi.org/10.1088/1742-6596/983/1/012178</p> <p>Lubis, M. A. (2015). Effective Implementation of the Integrated Islamic Education. <i>Global Journal Al-Thaqafah</i>, 5(1), 59–68. https://doi.org/10.7187/GJAT792015.05.01</p> <p>Munifah, K., Hamida, U., Firmansyah, M., Huda, S., Muawanah, A., & Irwandani, R. (2020). Discipline and Student Achievement Based on the Management of Islamic Education Systems. <i>Utopia y Praxis Latinoamericana</i>, 25(6), 388–403. https://doi.org/10.5281/zenodo.3987647</p> <p>Mustami, M. K., Suyuti, M., & Maryam. (2017). Validasi, Kepraktisan, dan Efektivitas Perangkat Pembelajaran Biologi Integrasi Spiritual Islam. In <i>Jurnal Al-Qalam</i> (Vol. 23, Issue 1, pp. 70–77).</p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>Narmaditya, B. S., Wulandari, D., & Sakarji, S. R. B. (2018). Does Problem-Based Learning Improve Critical Thinking Skills? <i>Cakrawala Pendidikan</i>, 37(3), 378–388.</p> <p>Plomp, T. (2007). Educational Design Research: an Introduction. In <i>Netherlands Institute for Curriculum Development: SLO</i>. http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=EJ815766</p> <p>Priatna, T. (2019). The Impact of Integration of Islamic Learning and Science through Virtual Mechatronics Approach to Student Learning Outcomes at UIN Sunan Gunung Djati Bandung, West Java, Indonesia. <i>International Journal of Environmental and Science Education</i>, 14(8), 479–491. http://www.ijese.net/makale_indir/IJESE_2138_article_5d9203622857b.pdf</p> <p>Purwanto, B. E., Jatmiko, A., Pahrudin, A., Munifah, Wardhani, S., Purnama, S., & Joemsittiprasert, W. (2020). The Implementation of Cooperative Learning to Developed Management of Language Learning System. <i>Journal for the Education of Gifted Young Scientists</i>, 8(1), 379–392. https://doi.org/10.17478/jegys.675251</p> <p>Purwati, N., Zubaidah, S., Corebima, A. D., & Mahanal, S. (2018). Increasing Islamic Junior High School Students Learning Outcomes through Integration of Science Learning and Islamic Values. <i>International Journal of Instruction</i>, 11(4), 841–854. https://doi.org/10.12973/iji.2018.11453a</p> <p>Rahardjanto, A., & Susilowati, R. (2018). <i>Study of Learning Strategy Integration of Science and Religion on the Development of Student Character</i>. 231, 645–648. https://doi.org/10.2991/amca-18.2018.178</p> <p>Ranti, S., & Usmeldi. (2019). Development of Integrated Science Student's Worksheet (LKPD) Based on Research-Based Learning Integrated with Religion Value. <i>Journal of Physics: Conference Series</i>, 1185(1). https://doi.org/10.1088/1742-6596/1185/1/012143</p> <p>Salam, M., Jafar, & Prajono, R. (2020). Effectiveness of Integrative Learning Models in Improving Understanding of Mathematical Concepts. <i>Journal for the Education of Gifted Young Scientists</i>, 8(3), 1005–1014. https://doi.org/10.17478/jegys.666875</p> <p>Setyaningsih, S., & Sunaryo, W. (2021). Optimizing Transformational Leadership Strengthening, Self Efficacy, and Job Satisfaction to Increase Teacher Commitment. <i>International Journal of Instruction</i>, 14(4), 427–438. https://doi.org/10.29333/iji.2021.14425a</p> <p>Sholichah, A. S. (2018). Teori-Teori Pendidikan dalam Al-Qur'an. <i>Edukasi Islami : Jurnal</i></p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p><i>Pendidikan Islam</i>, 7(1), 23–46. https://doi.org/10.30868/ei.v7i01.209</p> <p>Sides, J. D., & Cuevas, J. A. (2020). Effect of Goal Setting for Motivation, Self-Efficacy, and Performance in Elementary Mathematics. <i>International Journal of Instruction</i>, 13(4), 1–16. https://doi.org/10.29333/iji.2020.1341a</p> <p>Sintia, N., & Violita. (2020). The Validity of the Development of Integrated Islam and Science Learning Module Completed with a Concept Map for Integrated Islamic Junior High School. <i>International Journals of Sciences and High Technologies</i>, 24(1), 234–239.</p> <p>Sitorus, D. S., Siswandari, & Kristiani. (2019). The Effectiveness of Accounting E-Module Integrated with Character Value to Improve Students' Learning Outcomes and Honesty. <i>Cakrawala Pendidikan</i>, 38(1), 120–129. https://doi.org/10.21831/cp.v38i1.20878</p> <p>Sriatun, Linuwih, S., Sulhadi, & Aninditya. (2018). <i>Development of Physics Learning Tools Contains Integration of Qur'an Values</i>. 247(Iset), 484–488. https://doi.org/10.2991/iset-18.2018.97</p> <p>Sudirman, S. A., Nurmandi, A., & Bashori, K. (2020). English Writing Skills through Perception of Siri' Cultural Values: Optimism, Social Support, and Academic Self-Efficacy. <i>Cakrawala Pendidikan</i>, 39(2), 242–256. https://doi.org/10.21831/cp.v39i2.26118</p> <p>Suhirman, S., Prayogi, S., & Asy'ari, M. (2021). Problem-Based Learning with Character-Emphasis and Naturalist Intelligence: Examining Students Critical Thinking and Curiosity. <i>International Journal of Instruction</i>, 14(2), 217–232. https://doi.org/10.29333/iji.2021.14213a</p> <p>Sulayman, H. I. (2014). Values-Based Curriculum Model: A Practical Application of Integrated 'Maqasid Al-Sharia' for Wholeness Development of Mankind. <i>Procedia - Social and Behavioral Sciences</i>, 123, 477–484. https://doi.org/10.1016/j.sbspro.2014.01.1447</p> <p>Sunhaji. (2018). The Integration of Science-Technology and Living Environment through Islam Religion Education Learning at Adiwiyata-Based Junior High School in Banyumas Regency. <i>Dinamika Ilmu</i>, 18(2), 179–193. https://doi.org/10.21093/di.v18i2.1179</p> <p>Suroso, C. P., Hassan, M. B. A., Bin Mohamed, S., Sulistyanto, D., & Ngatyonono. (2018). Quranic Based Learning Approach to Internalise Islamic Values for Effective</p>	

Reviewer's comments (130921_c)	Changes made	Page (see highlights)
	<p>Mathematic Teaching and Learning: A Review. <i>Opcion</i>, 34(85), 1187–1197.</p> <p>Suryaningsih, Y. (2015). Penerapan Pembelajaran Biologi Berbasis Al-Qur'an Sebagai Metode untuk Pembentukan Karakter Siswa. <i>Jurnal Bio Educatio</i>, 3(1), 22–33. https://doi.org/10.15642/teosofi.2012.2.2.314-330</p> <p>Syarif. (2020). Building Plurality and Unity for Various Religions in the Digital Era: Establishing Islamic Values for Indonesian Students. <i>Journal of Social Studies Education Research</i>, 11(2), 111–119.</p> <p>Tambak, S., & Sukenti, D. (2020). Strengthening Islamic behavior and Islamic psychosocial in Developing Professional Madrasah Teachers. <i>Cakrawala Pendidikan</i>, 39(1), 65–78. https://doi.org/10.21831/cp.v39i1.26001</p> <p>Wei, B. (2020). An Exploratory Study of Teacher Development in the Implementation of Integrated Science Curriculum. <i>Research in Science Education</i>, 50(6), 2189–2206. https://doi.org/10.1007/s11165-018-9768-x</p> <p>Winarno, N., Rusdiana, D., Riandi, R., Susilowati, E., & Afifah, R. M. A. (2020). Implementation of Integrated Science Curriculum: A Critical Review of the Literature. <i>Journal for the Education of Gifted Young Scientists</i>, 8(2), 795–817. https://doi.org/10.17478/jegys.675722</p> <p>Winarso, W., & Wahid, S. (2020). Development of Mathematics Teaching Device Integrated with Quranic Values: Issues, Challenges, and Implementation Model. <i>International Journal of Learning, Teaching and Educational Research</i>, 19(1), 95–117. https://doi.org/10.26803/ijlter.19.1.6</p> <p>Yusuf, I. R., Ukit, & Paujiah, E. (2018). Pengaruh Integrasi Nilai-Nilai Islam Melalui Pendekatan Iman dan Taqwa (Imtaq) pada Hasil Belajar Sistem Reproduksi Manusia di MAN 2 Kota Bandung. <i>Bioilmi: Jurnal Pendidikan</i>, 4(2), 45–52. https://doi.org/10.19109/bioilmi.v4i2.2875</p>	



Astuti Muh. Amin <astuti.amin@gmail.com>

Amendments

2 pesan

iji@ogu.edu.tr <iji@ogu.edu.tr>

8 November 2021 01.27

Kepada: astutiamin@gmail.com, samlan@iain-ternate.ac.id, zulkarnaimumar@gmail.com, romiadiansyah04@gmail.com, astuti.amin@gmail.com

Dear author

We are happy to announce that the IJI is now **Scopus Q1**.

You have amendments from reviewers. Could you please amend **on attached file "Article 130921_for revision"** and send back your revised article and the list of explanations of the revisions done **via e-mail (iji@ogu.edu.tr)** as an attached file as soon as possible?

So far, a lot of articles have been published in the International Journal of Instruction on a wide range of subjects. To promote our international and scientific community, we kindly ask our writers to make references to other articles published in our journal. By doing this, you will help us to improve the IJI and as other writers will possibly reference your article, your article gets citations. Thus, as a final touch, **we kindly ask you to make references to two or more articles from the IJI.**

Sincerely yours,
International Journal of Instruction

International Journal of Instruction<http://www.e-iji.net>

We are happy to announce that the IJI is now Scopus Q1.

-

Bu elektronik posta ve onunla iletilen bütün dosyalar sadece yukarıda isimleri belirtilen kişiler arasında özel haberleşme amacını taşımakta olup gönderici tarafından alınması amaçlanan yetkili gerçek ya da tüzel kişinin kullanımına aittir. Eğer bu elektronik posta size yanlışlıkla ulaşırsa, elektronik postanın içeriğini açıklamaz, kopyalamaz, yönlendirmeniz ve kullanmanız kesinlikle yasaktır. Bu durumda, lütfen mesajı geri gönderiniz ve sisteminizden siliniz. Eskişehir Osmangazi Üniversitesi bu mesajın içerdiği bilgilerin doğruluğu veya eksiksiz olduğu konusunda herhangi bir garanti vermemektedir. Bu nedenle bu bilgilerin ne şekilde olursa olsun içeriğinden, iletilmesinden, alınmasından ve saklanmasından sorumlu değildir. Bu mesajdaki görüşler yalnızca gönderen kişiye aittir ve Eskişehir Osmangazi Üniversitesinin görüşlerini yansıtmayabilir.


This electronic mail and any files transmitted with it are intended for the private use of the people named above. If you are not the intended recipient and received this message in error, forwarding, copying or use of any of the information is strictly prohibited. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal. In this case, please immediately notify the sender and delete it from your system. Eskisehir Osmangazi University does not guarantee the accuracy or completeness of any information included in this message. Therefore, by any means Eskisehir Osmangazi


University is not responsible for the content of the message, and the transmission, reception, storage, and use of the information. The opinions expressed in this message only belong to the sender of it and may not reflect the opinions of Eskisehir Osmangazi University.


6 lampiran


 **IJI Article Evaluation Form 130921c.pdf**
247K

 **IJI Article Evaluation Form 130921a.pdf**
140K

 **Article 130921_c.doc**
304K

 **Article 130921_a.doc**
308K

 **Article 130921_for revision.doc**
300K

 **Changes made on Manuscript.docx**
18K

Astuti Muh. Amin <astuti.amin@gmail.com>

9 November 2021 03.10

Kepada: iji@ogu.edu.tr

Dear Editor in Chief,

Thank you for your email. We are going to revise our article as needed and submit it to IJI promptly.

Regards,
Authors.

[Kutipan teks disembunyikan]

--

Regards,

Astuti Muh. Amin
(to share to be better)



Astuti Muh. Amin <astuti.amin@gmail.com>

Astuti Muh. Amin_ID: 130921

1 pesan

Astuti Muh. Amin <astuti.amin@gmail.com>
Kepada: iji@ogu.edu.tr

30 November 2021 22.48

Dear Editor International Journal of Instruction (IJI)

Thank you for a favorable decision on our manuscript entitled: "**RQANI: A Learning Model that Integrates Science Concepts and Islamic Values** [ID: 130921]" by Astuti Muh. Amin, Samlan Ahmad, Zulkarnaim, Romi Adiansyah.

Herewith, we send you the revised manuscript together with the responses to the reviewers. We believe that the revisions adequately meet the reviewers' concerns. We have also added some references from IJI. We want to extend our sincere thanks to the reviewers for providing critical and useful comments. We look forward to future correspondence with IJI.

We thank you in advance for the time and effort you expend considering our work

Sincerely yours,
Dr. Astuti Muh. Amin

3 lampiran

 **Article 130921_for revision_Astuti Muh.Amin.doc**
465K

 **Changes made on Manuscript-130921a.docx**
69K

 **Changes made on Manuscript-130921c.docx**
59K



Astuti Muh. Amin <astuti.amin@gmail.com>

Re: Astuti Muh. Amin_ID: 130921

1 pesan

International Journal of Instruction <editor.eiji@gmail.com>

4 Desember 2021 01.25

Kepada: "Astuti Muh. Amin" <astuti.amin@gmail.com>, astutiamin@gmail.com, samlan@iain-ternate.ac.id, zulkarnaimumar@gmail.com, romiadiansyah04@gmail.com

Dear author

We received your revised article and sent it to reviewers. Thank you very much for your interest in IJI.

Sincerely yours,
International Journal of Instruction

International Journal of Instruction

<http://www.e-iji.net><http://www.gate-academy.ch>We are happy to announce that the IJI is now **Scopus Q1**.

From: "Astuti Muh. Amin" <astuti.amin@gmail.com>**Sent:** Tuesday, November 30, 2021 6:48:59 PM**Subject:** Astuti Muh. Amin_ID: 130921

Dear Editor International Journal of Instruction (IJI)

Thank you for a favorable decision on our manuscript entitled: "**RQANI: A Learning Model that Integrates Science Concepts and Islamic Values** [ID: 130921]" by Astuti Muh. Amin, Samlan Ahmad, Zulkarnaim, Romi Adiansyah.

Herewith, we send you the revised manuscript together with the responses to the reviewers. We believe that the revisions adequately meet the reviewers' concerns. We have also added some references from IJI. We want to extend our sincere thanks to the reviewers for providing critical and useful comments. We look forward to future correspondence with IJI.

We thank you in advance for the time and effort you expend considering our work

Sincerely yours,
Dr. Astuti Muh. Amin



Astuti Muh. Amin <astuti.amin@gmail.com>

(tanpa subjek)

2 pesan

International Journal of Instruction <editor.eiji@gmail.com>

27 Mei 2022 pukul 05.22

Kepada: astutiamin@gmail.com, samlan@iain-ternate.ac.id, zulkarnaimumar@gmail.com, romiadiansyah04@gmail.com, "Astuti Muh. Amin" <astuti.amin@gmail.com>

Dear author,

We published your article as OnlineFirst. You can see your article on the web <https://www.e-iji.net/volumes/370-onlinefirst>

RQANI: A Learning Model that Integrates Science Concepts and Islamic Values in Biology Learning
Astuti Muh. Amin, Samlan Hi Ahmad, Zulkarnaim, Romi Adiansyah

We will publish as home pages on July 01, 2022.

Note: No changes can be made to the article after 48 hours of publication.

Sincerely yours

International Journal of Instruction

International Journal of Instruction

<http://www.e-iji.net><http://www.gate-academy.ch>

We are happy to announce that the IJI is now **Scopus Q1**.

Astuti Muh. Amin <astuti.amin@gmail.com>

28 Mei 2022 pukul 00.59

Kepada: International Journal of Instruction <editor.eiji@gmail.com>

Dear Editor in Chief

International Journal of Instruction (IJI).

Thank you for your email.

Regards,

First Author

Dr. Astuti Muh. Amin

[Kutipan teks disembunyikan]

--

Regards,

Astuti Muh. Amin*(to share to be better)*