RESEARCH ARTICLE

Developing integrated biology teaching material with Qur'an and Sunnah value

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Abstract: This research aims to produce integrated biology teaching materials with the values of the Al-Qur'an and As-Sunnah that are valid and effective in improving cognitive, psychomotor, and strengthening students' faith and devotion. This development research (R&D) uses the ADDIE model which consists of five stages, i.e. analysis, design, development, implementation, and evaluation. The data collection techniques used were literature studies, observations, interviews, questionnaires, and tests. Data collection instruments used include interview sheets, validation sheets, questionnaire sheets, pre-test and post-test question sheets, observation sheets, and checklists. The teaching materials were validated by three validators (material experts, learning experts, Al-Qur'an/Hadist experts), and practitioners from several biology teachers from different schools. The data was analyzed quantitatively and qualitatively (triangulation). The research results showed that the teaching materials developed met the very valid category based on the assessment of material experts, learning experts, Al-Qur'an/Hadist experts, and practitioners. Moreover, the products received excellent responses from the students. The teaching materials could improve students' cognitive and psychomotor and also increase students' values of faith and piety. Further action will be extended to schools, especially schools with Islamic nuances so that they can be used both as self-taught materials for students and as teaching materials for teachers to use in the learning process.

Keywords: Al-Qur'an and As-Sunnah value; R&D; integrated biology module

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Introduction

Belief in Allah *Subhanahu wa Ta'ala* as the creator of the universe and all life in it cannot be separated from the two sources that guide life on this earth, namely the Al-Qur'an and the Hadist of the Prophet Muhammad *Sallallahu alahi wa Sallam* (Alyona et al., 2016; Tanshzil, 2012). Likewise, the implementation of education should aim to produce human resources as referred to in the creation of humans in Surah al-Baqarah (2): 30, namely as God's representatives on earth, to worship Allah (QS. Adz-Dzariyat (51), 56), also in surah Al-An'am (6), 162 which means "indeed, my prayer, my worship, my life and my death are only for Allah SWT". Apart from that, Allah also says in QS. Al-Mulk, (29), 2 which means "The One who created death and life, so that He may test you, which of you has better deeds." And He is Almighty, Most Forgiving."

Relevant to the goal of human creation, Islamic education aims to create personal servants of Allah who are always devoted to Him, become *rahmatan lil Alamin*, the formation of *al-kamil* humans (complete humans) who have the morals of the Al-Qur'an, humans who are *kaffah* in the dimensions of religion, culture and Science. As well as awareness of the function of humans as servants of Allah (*'abdillah*) and representatives of God on earth. According to Saekan (2017), the aim of Islamic education is to prepare humans to face life in this world and the hereafter, prepare themselves to seek a good life and livelihood, and maintain good morals (noble behavior), fostering demands for the world and the hereafter enthusiasm for knowledge, and prepare yourself to become a professional..

It is in line with the mandate of the Indonesian Constitution to strive for and implement a national education system that increases faith and devotion to God Almighty as well as noble morals to make the

nation's life more intelligent as regulated by law. The implications of this in the National education system aims to develop the potential of students to become human beings who have faith and devotion to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Abdullah, 2014; Shanmugavelu et al., 2020).

However, entering the era of globalization in the 21st century with very rapid advances in information technology, Indonesia is still faced with the challenge of improving the quality of human resources. On the other hand, there has been a lot of moral degradation which is quite worrying, such as drug abuse, promiscuity, and various other deviations. According to the National Child Protection Commission, as many as 21% of teenagers in Indonesia have had abortions. This means that the teenager has also had sexual relations outside of marriage. The results of this study reported that at least almost 93.7% of teenagers had had sex and watched pornographic videos (83%). This shows a threat to spiritual intelligence, which is increasingly being eroded. These problems have an impact on educational outcomes among pupils and students (Adamczyk et al., 2021; Ayu & Kurniawati, 2017; Bista et al., 2021; Hajarizadeh et al., 2023; Karila et al., 2021; Morales et al., 2019). There is a need to form and develop attitudes towards moral values among today's school children (Droessiger & Vdovinskiene, 2020). Based on these facts, it is necessary to make various breakthroughs so that the graduates produced can meet expectations, one of these efforts is through the integration of science with the values of the Al-Qur'an.

Several researchers stated that one effort that can be made is to improve the quality of learning by integrating faith values. It is believed that the proportional integration of science with the values of the Al-Qur'an can improve the quality of human resources produced (Mustafa et al., 2021; Rusydi, 2017; Sulayman, 2014). Apart from that, several researchers also stated the need to strengthen student motivation through authentic learning experiences so as to increase the meaningfulness of learning (Danniels et al., 2020; Greenstein, 2012). More meaningful learning that does not only focus on intelligence and academic achievement but strengthens faith and devotion so that you have a strong Islamic personality and are not easily influenced by behavior, which is not in accordance with Islam, what is clear is that learning has religious and social values and of course at the same time anticipates the problems of value-free science (Abdullah et al., 2015; Mufid, 2014; Mustafa et al., 2021; Sulayman, 2014). Apart from that, it is important to integrate knowledge because the Al-Qur'an contains a wealth of knowledge and is complete with solutions to worldly life. This has been proven in the history of Muslim life (Amda, 2020; Ramadhan et al., 2021).

In biology learning, the potential for integrating life sciences with the values of the Al-Qur'an and Sunnah is very possible. One reason is that biology is a representation that explains the signs of Allah's greatness (qauniyah verse) (Ramadhan et al., 2021). However, in general, many biology teachers still prioritize cognitive achievement targets so that affective aspects, especially in instilling the values of faith and piety and Islamic personality in students, tend to be less than optimal (Andreas et al., 2019). This problem needs to be addressed, one of which is by strengthening the integration of biological sciences with Islam through learning activities (Fahyuni et al., 2020). The results of preliminary research conducted by researchers show that teaching materials that integrate the values of the Al-Qur'an and As-Sunnah are still very limited, in general biology teachers only use textbooks and student worksheets which are still general. The interview results shows that either teachers or students are need and approve of biology books that are integrated with the values of the Al-Qur'an and As-Sunnah.

Based on this background and problems, it is necessary to develop biology teaching materials that are integrated with the values of the Al-Qur'an and As-Sunnah to the stage of effectiveness. The development of teaching materials integrated with Al-Qur'an values in reproductive materials has been reported by several researchers previously (Agusti et al., 2019; Pramesti et al., 2019) but there has been no development of integrated teaching materials with Al-Qur'an and As-Sunnah values in excretory system material. Excretory system material is part of biological material which is also full of the values of the Al-Qur'an and As-Sunnah. The excretory system material examines the structure of the tissues that make up the organs in the excretory system and the excretory process which explains the mechanisms and functional disorders that may occur in the excretory system. The excretory system material needs to be integrated with the values of the Al-Qur'an and As-Sunnah so that students can study excretory science more deeply and meaningfully and gain scientific understanding regarding the Al-Qur'an and Hadist.

Method

This development research uses the ADDIE model (Branch, 2010) and consists of five stages, namely analysis, design, development, implementation, and evaluation. The work procedure can be seen in Figure 1. The first step in the analysis stage is reading the literature, paying particular attention to study findings on phenomena that happen to students, such as repetitive behaviors and learning outcomes. After that, review what the competency requirements that need to be met is. The school survey was also conducted during the analysis stage to gather preliminary data on how the curriculum is being implemented in the classroom. We also interview teachers and students to find out what they need in

terms of biology teaching materials that are based on the teachings of the Al-Qur'an and the As-Sunnah. The curriculum analysis is rerun using the initial data results to identify the core competencies and basic competencies for which teaching materials will be developed. In this instance, it is decided that excrete system materials will be developed, along with indicators, sub-materials, task forms, exercises, and evaluations.

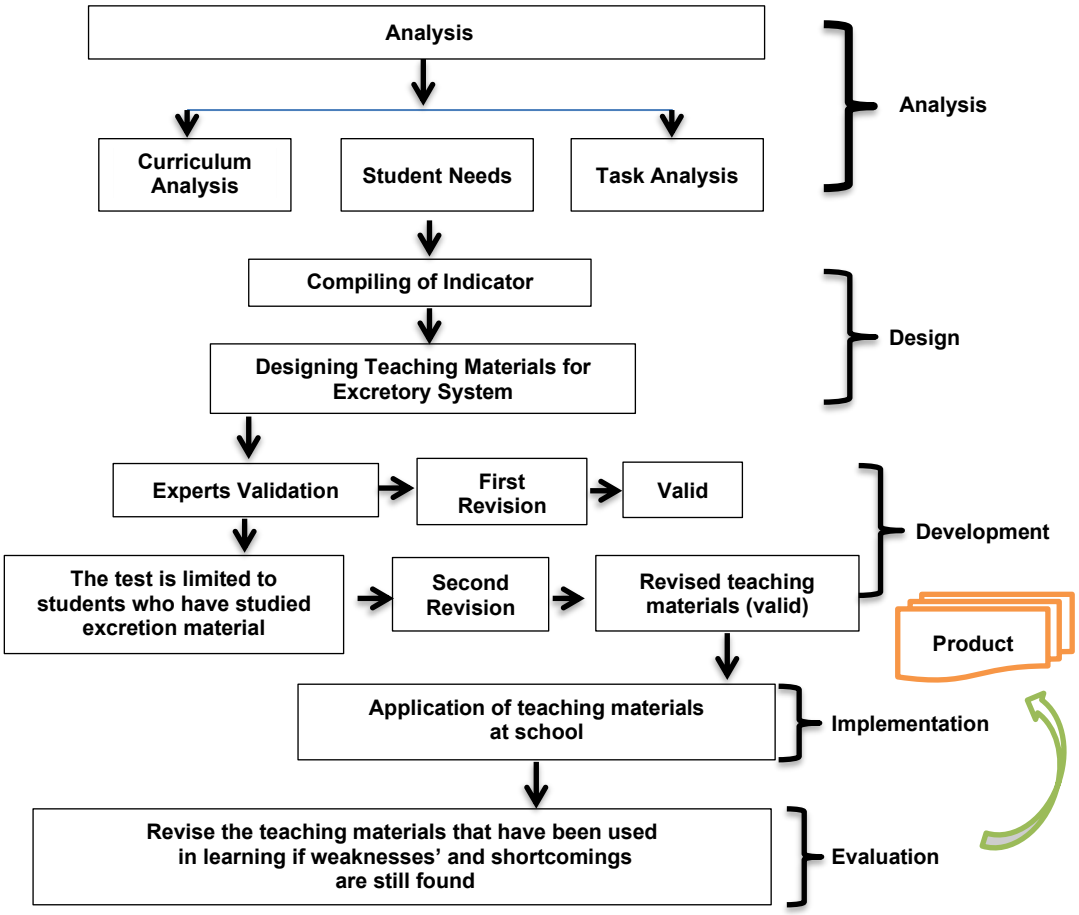

Figure 1. ADDIE Development Model

The initial design of the module by was made by arranging indicators and learning objectives, compiling excretory material, including activities, assignments, exercises and questions that have the potential to be integrated with the values of the Al-Qur'an and As-Sunnah, both related verses from the Al-Qur'an and As-Sunnah, related to manners and health, character, as well as *amtsal-amtsal* or parables, compose the module structure along with interesting features. The module is designed with full color criteria, consisting of foreword, table of contents, concept map, learning objectives, learning materials, summary, competency test, Biology concepts, and quizzes, thinking space, Biology facts, discussions, Islamic treasures, answer keys, words key, glossary and bibliography.

The design results that have been prepared are then developed by referring to related references, namely relevant biology books, Islamic science literature, the Al-Qur'an, and books of hadist and *tafsir*. Module development was carried out with validation from experts, including biology material experts (biology lecturers), learning experts (education experts), Al-Qur'an and Sunnah experts (Islamic lecturers, Al-Qur'an and hadist experts), practitioners including teachers -biology teachers. The teachers involved as practitioners in this research consisted of three biology teachers from Islamic Senior High School 2 Model of Pekanbaru, Al-Azhar Syifa Budi Senior High School of Pekanbaru, and As-Shofa Islamic Senior High School of Pekanbaru. The validation results of the revised module according to recommendations were declared valid and appropriate by a team of experts and a team of teachers, a limited trial was carried out in schools to obtain responses from students, where the module was tested in three schools totaling 60 students.

The implementation stage is carried out after the module developed has been revised and improved until it is declared valid and suitable for testing on students at school. However, it must be completed and accept good responses from the students. The implementation of the teaching materials that have been

developed aims to determine whether the modules used in the learning process are effective or not in terms of cognitive, and psychomotor learning outcomes, faith and piety (*iman dan taqwa*/IMTAQ) scores, learning plan implementation, and student activities. The implementation of the module was carried out on 29 students of Islamic Senior High School Model 2 of Pekanbaru in XI Science Class.

The evaluation stage includes learning outcomes and implementation of learning. The learning outcomes evaluated include cognitive, psychomotor, and IMTAQ, while the implementation of learning includes the implementation of learning plans and student activities in the learning process. Evaluation is carried out to correct and revise all weaknesses found after the module is used by teachers and students, both related to material, activities, assignments, exercises, and questions, as well as related features in the module. At this stage, suggestions and input were also obtained from teachers and students, then improvements were made again so that a product was produced in the form of biology teaching materials that were integrated with the values of the Al-Qur'an and As-Sunnah in the excretory system.

Data collection instruments in this research include literature studies, observation sheets, validation sheets, interview sheets, documentation, questionnaire sheets, pre-test and post-test question sheets, and checklists. Literature studies were carried out by looking for theoretical studies and research results, while interview sheets were used to obtain initial data to analyze student needs and task analysis, questionnaire sheets were used to obtain student responses to limited tests and to determine the implementation of student learning. plans and activities, checklist for taking student activities, and pre-test question sheets aim to determine students' initial abilities and post-test question sheets aim to determine student learning outcomes after the learning process. All supporting instruments in this research include learning plans, students' worksheet, learning media, assessment instruments, as well as pre-test and post-test questions. Questionnaire items that have been validated by the validator before being used are then subjected to validity, reliability, and empirical tests.

An analysis technique uses quantitative and qualitative. Module validity criteria and students' responses were determined from the average score obtained from each validator and student. Inferential statistical analysis was used to determine cognitive and psychomotor learning outcomes and the effectiveness of the products produced. Van's point is based on inferential statistical analysis with the t-test preceded by the prerequisite test, namely the normality test and homogeneity test. The normality test of cognitive data used the Kolmogorov-Smirnov test with = 0.050 and was assisted by the SPSS 20. The pre-test and post-test data were used to find the N-gain score. The following is the formula for processing data on learning outcomes.

Results and Discussion

Biology is a scientific study that dissects the living creatures created by God, from the smallest elements to the largest. This provides a large space for teachers to integrate biology learning with the values of faith and devotion. The complex human body system can work because of the connections between millions of cells, forming a series of tissues and organs with specific functions. This connectivity can occur with none other than Allah's permission. The excretory system, for example, consists of various organs that play an important role in the body, such as the liver, lungs, kidneys, and skin (Figure 2).

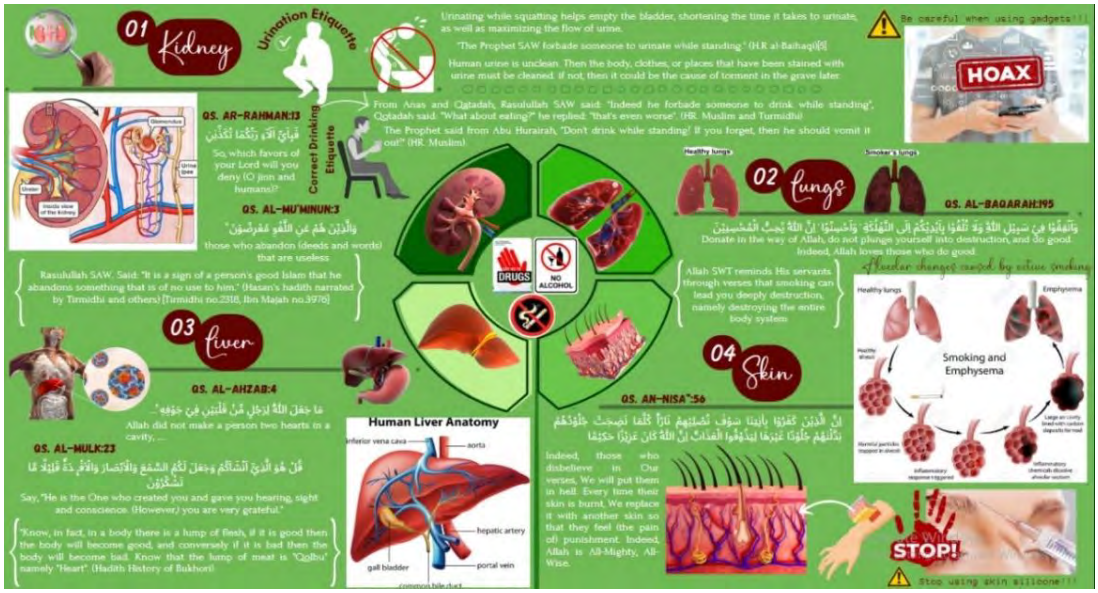

Figure 2. Several excretory system materials that are integrated with Al-Qur'an and As-Sunnah

The relationship between the excretory systems combined with the values of the Al-Qur'an and As-Sunnah, including regarding the organs in the excretory system and the excretion process. Implicitly, Allah has explained how the human body's organs work as in Surah Ar-Rahman verse 13, Al-Mu'minun verse 3, Al-Mulk verse 23, Al-Ahzab verse 4, An-Nisa verse 56, Al-Baqarah verse 195, and An-Nisa verse 56. Next is the hadist of Rasulullah regarding drinking positions, defecation positions, urination positions, and prohibitions on consuming alcohol, drugs, and smoking. The names of Allah (*Asmaul Husna*) are also a representation of how Allah regulates processes in the human body. This shows that Allah is the Most Creator, the Greatest, the Most Knowing, the Most Organizer, and the Most Intelligent, who creates and gives form. This is proof of Allah's love for His servants by providing means of excretion and regulating the process of cleansing the body from dangerous poisons.

The results of expert validation show that the module for integrating biology learning and the values of the Al-Quran and As-Sunnah is classified as valid with a score above 80 (Figure 3). More specifically, when viewed from the seven assessment components, the integration module received a very high score (Figure 4). The results of the learning expert assessment on aspects of presentation, module structure, writing organization, benefits, and language average 95% (very valid), and the results of the Al-Qur'an/hadist expert assessment on the integration aspect average 100% (very valid). Practitioner assessment results on aspects of presentation, suitability of material, integration, and language averaged 97.57% (very valid). Furthermore, the validation results from the content suitability aspect, either the material experts or the practitioner obtained an average result of 100% (very valid). In the presentation aspect, the results of validation by material experts, learning experts, and the teacher team were 99.54 (very valid), integration aspect by Al-Qur'an interpreters and the practitioners were 93.8% (very valid). In terms of module structure, writing organization, and usability, the results of the learning expert's assessment were an average of 100% (very valid). In the linguistic aspect, the results of the assessment by material experts, learning experts, and the teacher team averaged 97.22% (very valid).

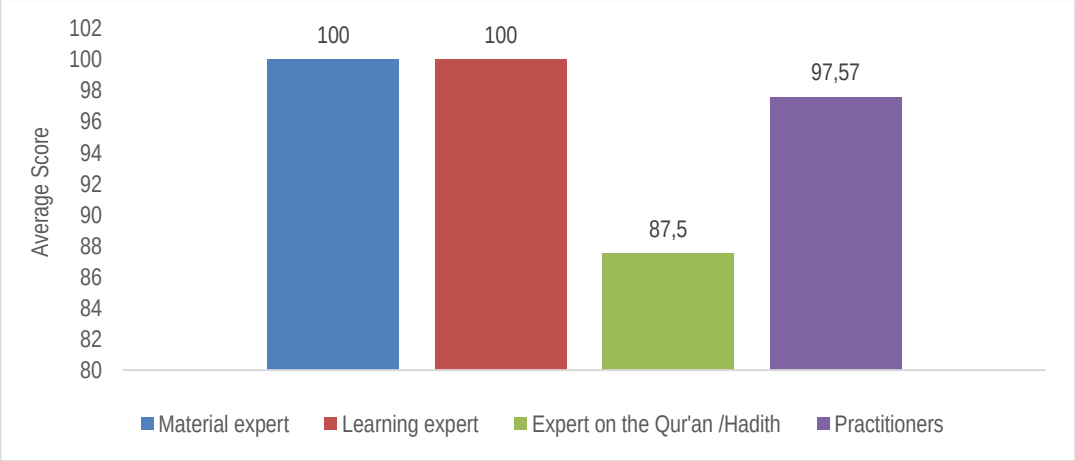

Figure 3. Validation results by the experts

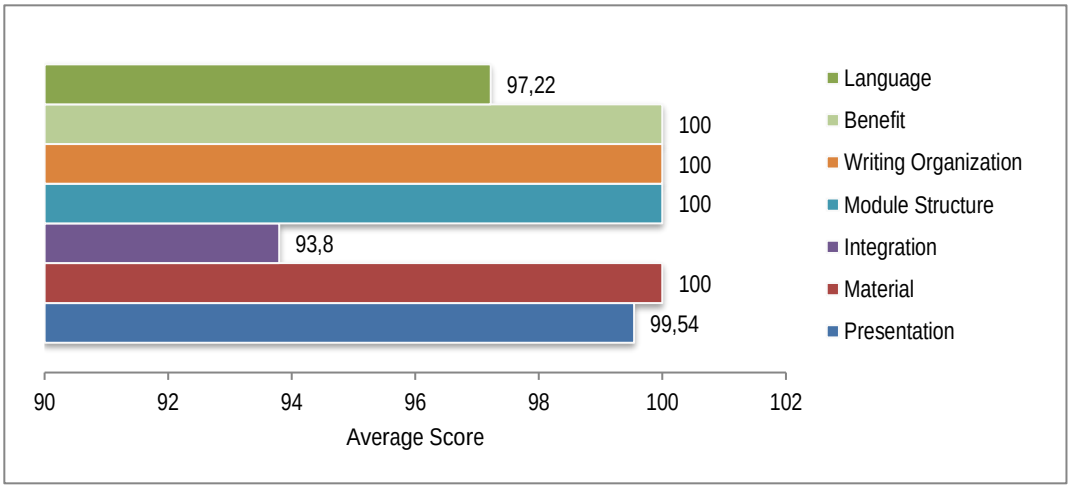

Figure 4. Validated component of module

The results of the expert and practitioner team's assessment of the modules developed were an average of 96.3% (very valid category), this means that the modules developed have met the criteria in the aspects of the suitability of the content, presentation, language, integration, module structure, writing organization and the benefits of the module are following standards (BSNP, 2008). The indication is that all aspects of the content suitability of the module being developed meet the content suitability criteria, where the material is contained in core competencies, basic competencies, and learning objectives, depth of material covers things from simple to complex and is supported by accurate concepts, data, and facts.

Furthermore, the aspects of module presentation, module structure, writing organization, attractive design and appearance, readability and attractive features have been fulfilled. Apart from that, the language aspects used are easy to understand. Nawawi and Wijayanti (2018) was reinforce that the feasibility of a module is determined by several validators, practitioners, students, and teachers. The module has learning objectives, the material encourages active student participation; contains an assessment system, contains all elements of lesson materials and lesson assignments, provides opportunities for differences between individual students; and leads to complete learning goals.

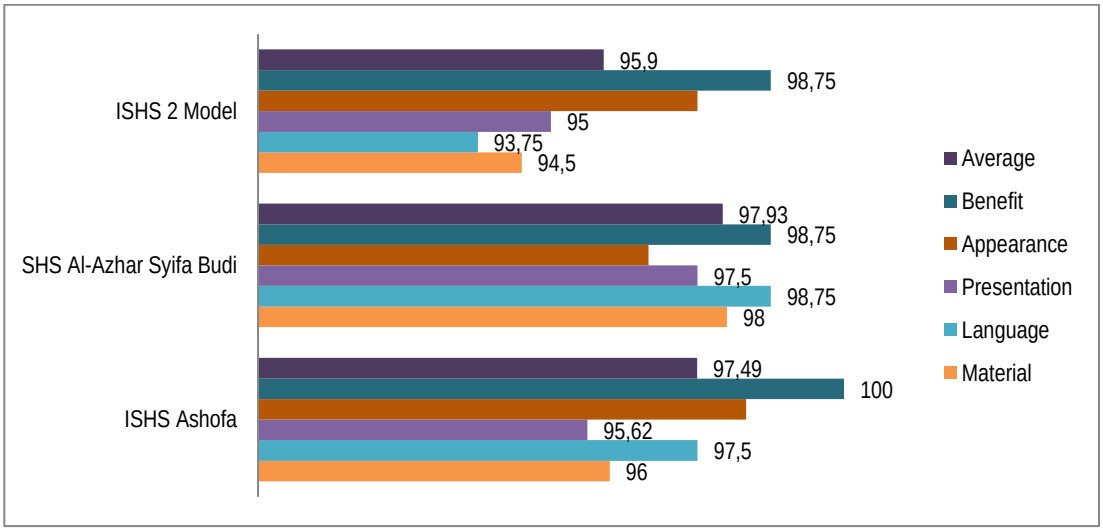

Figure 5. Results of limited trial of the module in three schools

Student responses to the module developed (Figure 5) show the acceptance of this module among students. The average student response score is above 90% (very good). The results of student responses from the three schools on the material aspect averaged 96.16% (very good), language 96.67% (very good), presentation 96.04% (very good), presentation 97.49% (very good), and usefulness 99.16% (very good). Students said that the module was clear and easy to understand because it was written in simple language, and the appearance was attractive because it was equipped with features such as “did you know”, Islamic treasures, contained IMTAQ values, the images were attractive, but some students suggested increasing the image resolution. Qadariah et al (2020) emphasized that a good module has an attractive appearance with a combination of colors, image shapes, and clear titles. The linguistic aspects of the module must use language that is easy to understand and spelled correctly Measurement of learning outcomes also shows relevance to student responses. Figure 5 shows the learning outcomes, including students' cognitive, psychomotor, and IMTAQ scores. The average pre-test score before learning was 61.69% (very poor) which could increase to 89.48% (good) in the post-test measurement. This means that after the learning experience using the integrated learning module, there was an increase of almost 20 points from the pre-test score. Furthermore, cognitive scores and classical completeness of 100% (minimum requirement score 80) are relatively high. The cognitive value is taken from the average quiz score of 30%, the average post-test score is 30%, the average homework score is 20%, and the average student theory worksheet score is 20%. The average increase in learning outcomes (N-gain) was 0.72 (high category).

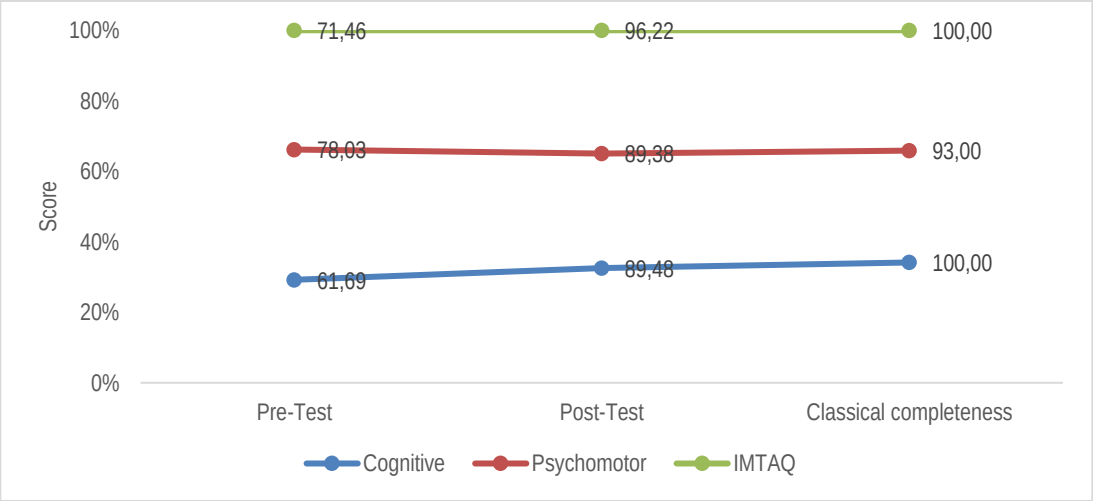

Figure 6. Student learning outcomes

Meanwhile, the students' average psychomotor score was 87.27% (good) with classical completion at 93%. The psychomotor score is obtained from an average portfolio score (practicum report) of 40% and an average performance score of 60% (discussion, presentation, and observation). The average increase in learning outcomes (N-gain) was 0.33 (medium category). Winarti (2017) believes that in science learning, the use of observation-based activities that interact with real objects and materials that are carefully designed must follow students' knowledge in everyday life. The average increase in students' psychomotor scores or N-Gain was 0.33 (medium). On the other hand, there was also an increase in students' IMTAQ scores or N-Gain of 0.84 (high). Increasing learning outcomes by using integrated Al-Quran and Hadist modules in excretory material is strengthened by the results of previous research with different materials which can increase learning motivation and have a positive impact on student learning outcomes, both cognitive, psychomotor, and faith values of student piety (Agusti et al., 2019; Droessiger & Vdovinskiene, 2020).

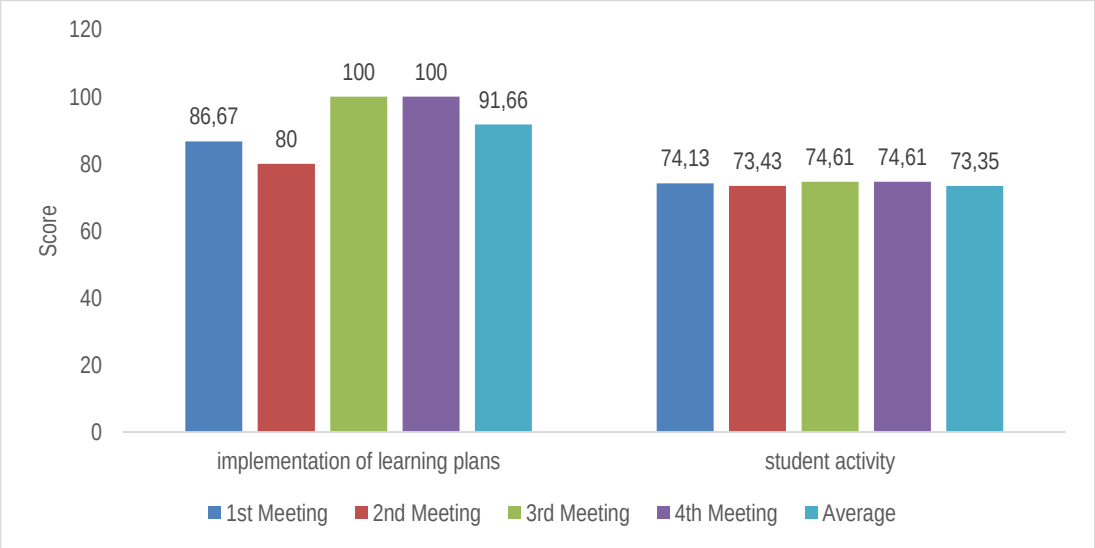

Figure 7. Effectiveness of the integrated module on implementation and student activities

In terms of implementing integrated modules in learning, the research results show that the implementation of lesson plans is 91.66% (very well implemented). Likewise, student activity averaged 73.35% (active category). Based on the criteria for the effectiveness of teaching materials and supported by the implementation of lesson plans and student activities in learning, it can be concluded that biology teaching materials in the form of excretory system material modules that are integrated with the values of the Al-Qur'an and As-Sunnah are effectively used in the learning process to improve students' cognitive and activeness, psychomotor learning outcomes, and students' IMTAQ scores. According to (Pramesti et al., 2019), modules as independent teaching materials play an important role in the learning

process, namely by placing students as learning subjects so that the learning environment created is active learning without depending on the teacher's availability. The module as an evaluation tool can function as a medium for student reflection on the topics they have studied. The next role of the module is as a literacy resource, related to the content of the module which consists of material with a collection of concepts that students can use as a learning resources. Through modules arranged in a certain design, teachers can also improve their students' academic achievement.

Furthermore, the results of the Al-Qur'an Expert assessment on the module integration aspect are in the very valid category, which means the module has met the criteria for integration of elements of Islam and science. The accurate integration of Islamic values that are instilled also makes it easier for students to understand the material combined with the values of the Al-Qur'an, and the suitability of the verses of the Al-Qur'an and Hadist with the knowledge conveyed. Hassan et al (2010); Mustafa et al (2021); and Sulayman (2014) states that in the Al-Qur'an many values can be taken and applied in everyday life. Values must be developed further by referring to the verses of the Al-Qur'an. This is reinforced by Kundariati et al (2022) and Osborne et al (2016) that values education must be implemented completely and comprehensively by incorporating values into the learning process and through an in-depth understanding of the Al-Quran helping someone find scientific evidence in it.

The results of implementing the module in schools show that students' cognitive, psychomotor and IMTAQ learning outcomes are in the very good category. This is reinforced by the implementation of the learning plan carried out by the teacher in six meetings on average which was carried out well, apart from the results of observations of student activities at each meeting which were on average in the active category. Thus, the module developed is categorized as very effective for use in the learning process. Afriana et al (2016) and Anshori (2021) are of the view that scientific signals are keywords to include universal scientific facts originating from verses of the Al-Qur'an. The concept of useful scientific cues can improve science learning outcomes. This is strengthened by the view of (Alyona et al., 2016; Sulayman, 2014) that students need to learn Islamic science from an early age to increase children's intelligence. connecting concepts with verses from the Al-Qur'an as well as a combination of philosophy and integration of spiritual values which can improve core competencies regarding devotion to Allah (Wati et al., 2019). In addition, according to Hassan et al (2010) and Roy et al (2020), integrating spirituality into education is seen as a crucial element that provides significant meaning to the life of the nation. Recognition of the existence of God is highlighted as a catalyst to foster a strong commitment to consistently provide the best for the nation.

Conclusion

Based on the validation results of a team of experts and biology teachers from 3 schools, the biology module on nervous system material shows that the module developed has an average of 96.3% (very valid category). The results of the limited module test at school obtained a student response with an average of 97.1% (very good category). Based on the results of implementing the module, the average cognitive learning outcome was 88% (effective), the average psychomotor learning outcome was 87.27% (effective), and the average IMTAQ score was 96.27 (very effective). The average implementation of the learning program plan (RPP) was 91.6% (very well implemented), and the average student activity was 73.35 (active). Thus, the module developed is effectively used to improve students' cognitive and psychomotor learning outcomes and is very effective in increasing students' IMTAQ scores in the learning process.

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Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author Contributions

S. Robiah: methodology and analysis; **I. Hajar:** review; **S. Ferazona:** editing; and **D. S. Lestari:** processing data.

References

Abdullah, C., Parris, J., Lie, R., Guzdar, A., & Tour, E. (2015). Critical analysis of primary literature in a master's-level class: Effects on self-efficacy and science-process skills. *CBE Life Sciences Education*. https://doi.org/10.1187/cbe.14-10-0180

Abdullah, M. A. (2014). Religion, science and culture: An integrated, interconnected paradigm of science. *Al-Jami'ah*, *52*(1), 175–203. https://doi.org/10.14421/ajis.2014.521.175-203

Adamczyk, A., Liu, Y. H., & Scott, J. (2021). Understanding the role of religion in shaping cross-national and domestic attitudes and interest in abortion, homosexuality, and pornography using traditional and Google search data. *Social Science Research*, *100*(July 2020), 102602. https://doi.org/10.1016/j.ssresearch.2021.102602

Afriana, J., Permanasari, A., & Fitriani, A. (2016). Penerapan project based learning terintegrasi STEM untuk meningkatkan literasi sains siswa ditinjau dari gender. *Jurnal Inovasi Pendidikan IPA*, *2*(2), 202. https://doi.org/10.21831/jipi.v2i2.8561

Agusti, D., Rahmatan, H., & Sulastri. (2019). Development of reproductive system module with Al-Quran/Hadith to improve motivation and student learning outcomes. *Edusains*, *11*(1), 132–140. https://doi.org/10.15408/es.v11i1.10270

Alyona, B., Tursun, G., Akmaral, M., & Saira, S. (2016). Spiritual understanding of human rights in muslim culture (The problem of "ruh" – "spirit"). *Procedia - Social and Behavioral Sciences*, *217*, 712–718. https://doi.org/10.1016/j.sbspro.2016.02.131

Amda, A. D. (2020). Figur intelektual muslim dalam Qur'an: Tafsir tematik terhadap kata ulul albab. *AL QUDS : Jurnal Studi Alquran Dan Hadis*, *4*(1), 145. https://doi.org/10.29240 /alquds.v4i1.1450

Andreas, A., Situmorang, R. P., & Hastuti, S. P. (2019). The development of learning song-integrated module based on flipped learning model to improve self-regulated learning and cognitive learning outcome of junior high school students. *Jurnal Bioedukatika*, *7*(2), 97. https://doi.org/10.26555/bioedukatika.v7i2.12713

Anshori, I. (2021). Problem-based learning remodeling 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

Ayu, S. M., & Kurniawati, T. (2017). Hubungan tingkat pengetahuan remaja putri tentang aborsi di MAN 2 Kediri Jawa Timur. *Unnes Journal of Public Health*, *6*(2), 2–5. https://doi.org/10.15294/ujph.v6i2.13736

Bista, S., Nathan, S., Rawstorne, P., Palmer, K., Ferry, M., Williams, M., & Hayen, A. (2021). Mortality among young people seeking residential treatment for problematic drug and alcohol use: A data linkage study. *Drug and Alcohol Dependence*, *228*, 109030. https://doi.org/10.1016/j.drugalcdep.2021.109030

Branch, R. M. (2010). Instructional design: The ADDIE approach. In *Instructional Design: The ADDIE Approach*. https://doi.org/10.1007/978-0-387-09506-6

Danniels, E., Pyle, A., & DeLuca, C. (2020). The role of technology in supporting classroom assessment in play-based kindergarten. *Teaching and Teacher Education*, *88*, 102966. https://doi.org/10.1016/j.tate.2019.102966

Droessiger, G., & Vdovinskiene, S. (2020). Factors for increasing motivation to theory class attendance among students of technology studies. *Integration of Education*, *24*(1), 50–61. https://doi.org/10.15507/1991-9468.098.024.202001.050-061

Fahyuni, E. F., Wasis, Bandono, A., & Arifin, M. B. U. B. (2020). Integrating islamic values and science for millennial students' learning on using seamless mobile media. *Jurnal Pendidikan IPA Indonesia*, *9*(2), 231–240. https://doi.org/10.15294/jpii.v9i2.23209

Greenstein, L. M. (2012). Assessing 21st Century skills. In *Assessing 21st Century Skills* (Issue September). Corwin Press. https://doi.org/10.17226/13215

Hajarizadeh, B., Kairouz, A., Ottaviano, S., Ireland, J., Willing, A., Cunningham, E., Webb, P., Colledge-Frisby, S., Wheeler, A., Leung, J., Tran, L. T., Price, O., Vickerman, P., Farrell, M., Hickman, M., Dore, G. J., Bergenström, A., Degenhardt, L., & Grebely, J. (2023). Global, regional, and country-level coverage of testing and treatment for HIV and hepatitis C infection among people who inject drugs: a systematic review. *The Lancet Global Health*, *11*(12), e1885–e1898. https://doi.org/10.1016/S2214-109X(23)00461-8

Hassan, A., Suhid, A., Abiddin, N. Z., Ismail, H., & Hussin, H. (2010). The role of Islamic philosophy of

education in aspiring holistic learning. *Procedia - Social and Behavioral Sciences*, *5*(2), 2113–2118. https://doi.org/10.1016/j.sbspro.2010.07.423

Karila, L., Roussot, A., Mariet, A. S., Benyamina, A., Falissard, B., Mikaeloff, Y., & Quantin, C. (2021). Effects of the 2020 health crisis on acute alcohol intoxication: A nationwide retrospective observational study. *Drug and Alcohol Dependence*, *228*, 109062. https://doi.org/10.1016/j.drugalcdep.2021.109062

Kundariati, M., Maghfiroh, L., Indriwati, S. E., Rohman, F., & Priambodo, B. (2022). Revealing the effect of local-based teaching materials toward scientific reasoning, argumentation, and problem-solving in biology classroom. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *8*(3), 287–295. https://doi.org/10.22219/jpbi.v8i3.21973

Morales, K. B., Park, J. N., Glick, J. L., Rouhani, S., Green, T. C., & Sherman, S. G. (2019). Preference for drugs containing fentanyl from a cross-sectional survey of people who use illicit opioids in three United States cities. *Drug and Alcohol Dependence*, *204*(July), 107547. https://doi.org/10.1016/j.drugalcdep.2019.107547

Mufid, F. (2014). Islamic sciences integration. *QIJIS (Qudus International Journal of Islamic Studies)*, *2*(2), 144–160. https://doi.org/10.21043/qijis.v2i2.1565

Mustafa, Z., Baharuddin, A., & Saifuddeen, S. M. (2021). Islam, science and education: Delving into the progress, collaboration and biases. *Journal of Islamic Thought and Civilization*, *11*(2), 44–68. https://doi.org/10.32350/jitc.112.03

Nawawi, S., & Wijayanti, T. F. (2018). Pengembangan asesmen biologi berbasis keterampilan berpikir kritis terintegrasi nilai Islam. *Jurnal Inovasi Pendidikan IPA*, *4*(2), 136–148. https://doi.org/10.21831/jipi.v4i2.21265

Osborne, J. F., Henderson, J. B., MacPherson, A., Szu, E., Wild, A., & Yao, S. Y. (2016). The development and validation of a learning progression for argumentation in science. *Journal of Research in Science Teaching*, *53*(6), 821–846. https://doi.org/10.1002/ tea.21316

Pramesti, B. N., Sajidan, S., Dwiastuti, S., & Setyaningsih, E. (2019). The feasibility of biology module based on Stim-HOTS models. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *5*(1), 101–108. https://doi.org/10.22219/jpbi.v5i1.7385

Qadariah, N., Lestari, S. R., & Rohman, F. (2020). Developing guided inquiry module in animal reproductive system material. *JPBI (Jurnal Pendidikan Biologi Indonesia)*, *6*(2), 305–316. https://doi.org/10.22219/jpbi.v6i2.12207

Ramadhan, A. N., Dwiningrum, S. I. A., & Subhan, B. (2021). Potensi integrasi pembelajaran biologi dengan pembelajaran Quran-Hadis. *AL QUDS : Jurnal Studi Alquran Dan Hadis*, *5*(1), 263. https://doi.org/10.29240/alquds.v5i1.2355

Roy, S., Huq, S., & Rob, A. B. A. (2020). Faith and education in Bangladesh: A review of the contemporary landscape and challenges. *International Journal of Educational Development*, *79*, 102290. https://doi.org/10.1016/j.ijedudev.2020.102290

Rusydi, S. R. (2017). Peran Muhammadiyah (Konsep pendidikan, usaha-usaha di bidang pendidikan, dan tokoh). *TARBAWI : Jurnal Pendidikan Agama Islam*, *1*(2), 139–148. https://doi.org/10.26618/jtw.v1i2.367

Saekan, M. (2017). Islamic education unifying nation. *QIJIS (Qudus International Journal of Islamic Studies)*, *5*(2). https://doi.org/10.21043/qijis.v5i2.2484

Shanmugavelu, G., Parasuraman, B., Ariffin, K., Kannan, B., & Vadivelu, M. (2020). Inquiry Method in the Teaching and Learning Process. *Shanlax International Journal of Education*, *8*(3), 6–9. https://doi.org/10.34293/education.v8i3.2396

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

Tanshzil, S. W. (2012). Model pembinaan pendidikan karakter pada lingkungan pondok pesantren dalam membangun kemandirian dan disiplin santri. *Jurnal Penelitian Pendidikan*, *13*(2), 1–18. http://repository.upi.edu

Wati, F.S, Lathifa, U., & Udaibah, W. (2019). Pengembangan modul kesetimbangan kimia berbasis unity of sciences (UoS) dan multilevel representasi. *Thabiea : Journal of Natural Science Teaching*, *2*(2). https://doi.org/10.21043/thabiea.v2i2.5972

Winarti, W. (2017). Pengembangan perangkat pembelajaran fisika bermuatan integrasi Islam-Sains untuk menanamkan nilai-nilai spiritual siswa madrasah aliyah. *Jurnal Pendidikan Fisika Dan Keilmuan (JPFK)*, *1*(2), 54. https://doi.org/10.25273/jpfk.v1i2.12