Journal of Natural Science and Integration
P-ISSN: 2620-4967|E-ISSN: 2620-5092
Vol. 6, No. 2, October 2023, pp 209-217

Available online at:
http://ejournal.uin-suska.ac.id/index.php/JNSI
DOI: 10.24014/jnsi.v6i2.19392

Development of Inquiry-Based Environmental Knowledge Modules and Islamic Values

Amna Emda[1*], Mukhlisah[2], Misbahul Jannah[3]

[1] Department of Chemistry Education, Universitas Islam Negeri Ar-Raniry, Indonesia
[2] Department of Arabic Education, Universitas Islam Negeri Ar-Raniry, Indonesia
[3] Department of Primary Education, Universitas Islam Negeri Ar-Raniry, Indonesia

**Correspondence Author: amna.emda@ar-raniry.ac.id*

ABSTRACT
This study aims to assess the feasibility of inquiry-based environmental knowledge modules and Islamic values according to expert assessments. This type of research is research and development which refers to the ADDIE model. The research instrument is in the form of validation sheets from 2 media experts, 3 science material experts, and 2 Quran and tafsir material experts with four assessment categories. The data of this research are observation sheets and questionnaires which are analyzed using descriptive analysis. The results showed that the feasibility of inquiry-based environmental knowledge modules and Islamic values assessed by media experts was in the feasible category (79%), science material substance experts were in the feasible category (80%) and the substance of the Qur'an and interpretation material experts were in the feasible category (74%). Thus, it can be concluded that the inquiry-based environmental knowledge module and Islamic values can be used in the learning process.

Keywords: *module, environmental knowledge, inquiry, Islamic values*

INTRODUCTION

The science education curriculum in higher education is developed based on the 2013 curriculum and KKNI which prioritizes knowledge and various skills to be achieved by prospective teachers in Indonesia. One of the subjects contained in the science education curriculum in Indonesian universities is environmental education. Environmental education is learning related to education about the environment, for the environment and through the environment (Kemendikbud, 2020; Safitri et al., 2018; Triska, 2021), which aims to increase knowledge and understanding and form attitudes towards the environment (Ahmad, 2022; Duyen & Loc, 2022; Herman, 2015), so that it can solve problems in everyday life (Kemendikbud, 2016, 2020).

The problem so far is that lecturers do not use inquiry in learning environmental knowledge because (1) lecturers who teach are not their fields, (2) students in teaching practice do not carry out inquiry because they do not have the skills of inquiry (Misbahul J, 2020; Purwani et al., 2018; N. Rustaman, 2008; N. Y. Rustaman, 2007), and (3) lecturers are less creative in implementing inquiry learning (Aini & Dwiningsih, 2014; Astalini et al., 2023; Bögeholz et al., 2014).

Given the importance of inquiry in learning environmental knowledge, lecturers need to be trained to improve their inquiry skills. This is in accordance with several previous studies that learning using inquiry can improve students' science literacy (Afandi et al., 2018; Fitri & Fatisa, 2019; Misbahul J, 2020; Purwani et al., 2018; N. Rustaman, 2008). Apart from inquiry skills, prospective teachers must also have Islamic values. Islamic values are values based on something that comes from revelation from Allah which is integrated in learning (Defianti et al., 2022; Fajar & Habibbulloh, 2021; Fathurrohman, 2020; Husna et al., 2020; Kazwaini et al., 2021; Kimianti & Prasetyo, 2019; Larasati et al., 2020), So much of God's revelation is about the environment, and revealing the secrets of those signals through science literacy.

Islamic literacy skills are very important for students, so the need for the right media that can empower students' science literacy skills. One of the basic ways that can be done is to develop modules based on inquiry and Islamic values to improve student science literacy. Module development has been widely done to improve students' science literacy. However, there are not many modules that integrate Islamic values. The development of science modules conducted by (Kimianti & Prasetyo, 2019) has not integrated Islamic values, while research conducted by (Husna et al., 2020) has not integrated an inquiry model that can encourage students to carry out the process of experimentation and discovery. Therefore, there is a need for preventive measures in developing inquiry-based modules and Islamic values to improve students' scientific literacy.

There is a gap from previous studies, where previous studies students did not carry out both hands-on and minds-on inquiry activities and were not given an intervention. In addition, so far it has also been found that there is no availability of inquiry-based environmental knowledge learning modules and Islamic values at the University or in bookstores as a guide for lecturers in improving the three elements of student science literacy as expected by the science education curriculum in higher education.

From these problems, this research is focused on environmental education to be researched, which is expected to improve students' science literacy. Environmental knowledge is also one of the materials assessed in the PISA assessment. Therefore, research using inquiry-based environmental knowledge modules and Islamic values needs to be carried out to help lecturers improve the three elements of student science literacy. The purpose of this study was to assess the inquiry-based environmental knowledge module and Islamic values to improve students' science literacy.

METHODOLOGY

This research uses the Design Development Research (DDR) approach using the ADDIE instructional design model. The development of the Inquiry-based environmental knowledge module and Islamic value was developed based on the ADDIE model using five phases, namely (1) the analysis phase, (2) the design phase, (3) the development phase, (4) the implementation phase, and (5) the evaluation phase.

The subjects of this study were two media experts, three science experts and two Al-Quran and Tafsir experts. All of these experts are lecturers from three PTKIN Aceh namely, UIN Ar-Raniry, IAIN Zawiyah Cot Kala Langsa, and IAIN Lhokseumawe.

This development research instrument uses a questionnaire. After designing Inquiry-based environmental knowledge module and Islamic value, it was then assessed by experts and lecturer in three PTKIN Aceh. All data obtained from the module assessment were analyzed by using descriptive analysis. The data from the assessment of teaching materials includes data in the form of scores and then converted into four categories, namely very feasible (SL), feasible (L), less

feasible (KL) and not feasible (TL). The scores obtained will also be processed into percentages for feasibility criteria.

RESULT AND DISCUSSION

The assessment of the Environmental Knowledge Module was carried out by 2 media experts, 3 science material experts and 2 Al-Quran and Tafsir experts. Media experts assessed the development of this Environmental Knowledge Module in three points, namely the size of teaching materials, teaching material cover design, and teaching material content design. For science material substance experts assess the development of teaching materials in three aspects, namely aspects of content feasibility, aspects of presentation feasibility and linguistic aspects. and for the assessment of the Qur'anic material substance experts and interpretations assess the development of the Environmental Knowledge Module in aspects of the suitability of environmental knowledge material with Qur'anic verses about the environment, aspects of the suitability of science material with Qur'anic verses on environmental management and aspects of the suitability of science material with Qur'anic verses on environmental problems.

Media Expert Assessment

The assessment by media experts aims to determine the feasibility of the Environmental Knowledge Module that integrates Quranic verses assessed in terms of design by media experts giving an assessment according to the grid of the validator sheet provided. In developing the Environmental Knowledge Module, the developer's ability to design is needed, so that readers are interested in reading the Environmental Knowledge Module.

Aspects that need to be considered are: (1) Color, especially if the color contains meaning, (2) Placement of illustrations, placed as close as possible to the concept described by the illustration, (3) Maps, tables, and graphs must match the text, must be accurate, and simple, and (4) paper and book size (Zulaichah et al., 2021). This assessment was conducted by two lecturers.

The results of the assessment of the Environmental Knowledge Module by media experts as a whole get very feasible criteria (91%) so that teaching materials can be used as teaching materials for students in the learning process and independent learning. In terms of overall aspects, the highest percentage of feasibility is in the cover design aspect of teaching materials getting very feasible criteria (100%). Furthermore, followed by the content design aspect of teaching materials getting very feasible criteria (92%). And finally, the size aspect of teaching materials gets decent criteria (81%) with a lower percentage of feasibility than the cover design and content design aspects of teaching materials. The following are the results of the media expert assessment, which are as follows:

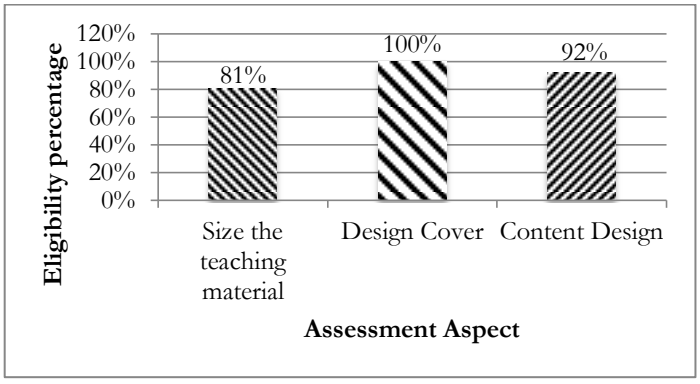

Figure 1. Assessment by media experts

Based on the results of the analysis of the media expert's assessment of the design of the Environmental Knowledge Module that integrates Islamic values in the media aspect, the overall average score is 91% with a very feasible category and can be used with revision. The results of the assessment from the media expert validator on the size aspect of the Environmental Knowledge Module received a feasibility score of 81%. The first aspect is the size aspect of the Environmental Knowledge Module which discusses the suitability of the size of the teaching material and the suitability of the size with the teaching material. In accordance with the indicators of the Environmental Knowledge Module that integrates Islamic values using A4 paper size with a size of 210 × 297 mm. A4 size was chosen so that the text and images of teaching materials can be read well and in accordance with general use. Based on the feasibility sheet of the Environmental Knowledge Module, the size of good teaching materials must be according to standards. Thus, this Environmental Knowledge Module has met the established standards.

The second aspect, namely the cover design of teaching materials (cover) consists of three indicators, namely the size of the teaching material title font is more dominant and proportional than the author's name, the title color contrasts with the background color, and does not use too many letter combinations. The cover design sub-indicator of the Environmental Knowledge Module discusses the illustration of the content of the material in terms of color and image. Graphics in the module has its own value in inviting attention and perception from students. According to (Bornstein et al, 2003; Jannah et al., 2021; Kandarakis et al, 2008; Stacey & William, 2003), the information presented can be well delivered to short-term memory if students give attention and perception, while the absolute requirement for long-term memory is to do repetition and coding. The presentation of graphics in this module helps students to remember the long term so that it leads to meaningful learning (Abu-Ghaneema, 2018; Eutsler et al., 2023; Kostiainen et al., 2018).

The third aspect is the content design of teaching materials consisting of consistent layout elements, based on patterns, separators between paragraphs, spaces between text and illustrations accordingly. The content design aspect of the Environmental Knowledge Module gets an average score of 92%. The content design sub-indicator of the Environmental Knowledge Module discusses illustrations that are good, interesting, innovative, creative and make it easier to understand the material. Based on the explanation from the media expert aspect, the Environmental Knowledge Module that integrates Islamic values is suitable for use as a module / teaching material in the learning process.

Integrating Islamic values into the module encourages students' understanding not only of science literacy knowledge but also instills Islamic values. (Fathurrohman, 2020; Husna et al., 2020; Larasati et al., 2020). The role of the Qur'an in the concept of science-Islam integration is as inspiration, confirmation, and empirical dogma. The role of Islamic values with tadabbur verses of the Qur'an is positioned in the module to trigger scientific activities to take place (Defianti et al., 2022). Based on suggestions for improvement filled in by media experts with the hope that the Environmental Knowledge Module integrating Islamic values, namely changes in writing and spacing to make it easier to read, attractive and not too formal and teaching materials can be used with revisions.

Expert assessment of science material substance that aims to determine the feasibility of science material in the Environmental Knowledge Module that integrates Islamic values that have been developed. The development of the Environmental Knowledge Module is aimed at science students, so the author validates the Environmental Knowledge Module to science teachers who teach science courses at FTK. Expert assessment of science material substance includes three aspects, namely, aspects of content feasibility, aspects of presentation feasibility and linguistic aspects. Expert assessment of the substance of the material was carried out by 3 experts in the field of science. Based on the results of the assessment of the Environmental Knowledge Module

that integrates Islamic values by subject matter experts. The inquiry-based module presented encourages students to carry out the scientific process through the discovery process to build knowledge recollection (Chandramouli et al., 2019; Dewey, 1920; Feldman, 2004; Piipponen, 2023; Takaya, 2008).

Science Material Expert Assessment

The results of the assessment of the Environmental Knowledge Module by science subject matter experts as a whole from the aspects assessed get decent criteria (81%) so that the Environmental Knowledge Module can be used as teaching materials for students in the learning process. Overall, the aspect that gets the highest percentage of feasibility is in the presentation feasibility aspect with very feasible criteria (85%). Then followed by the linguistic aspect with decent criteria (81%). And the last is the feasibility aspect of the content gets decent criteria (77%) with a lower percentage of feasibility than the feasibility aspects of presentation and language.

Based on the answers to the supporting statements filled in by the science material substance experts, that (1) teaching materials can help students in understanding learning materials, (2) the advantages of the Environmental Knowledge Module that integrates Islamic values are that it makes students better understand the link between daily phenomena and is also explained partly in the Qur'an even though it is not clearly and optimally, (3) the shortcomings of the Environmental Knowledge Module are the lack of precise explanation of the integration of verses in environmental knowledge material and layout in the module, and (4) suggestions for the future to deepen the integration method so that the integration of verses becomes more precise. The accuracy in integrating Islamic values with scientific phenomena in everyday life helps students better understand natural phenomena by integrating the Islamic values contained therein (Defianti et al., 2022; Husna et al., 2020).

The percentage of assessment results by science material substance experts on each aspect can be seen in the following graphical image:

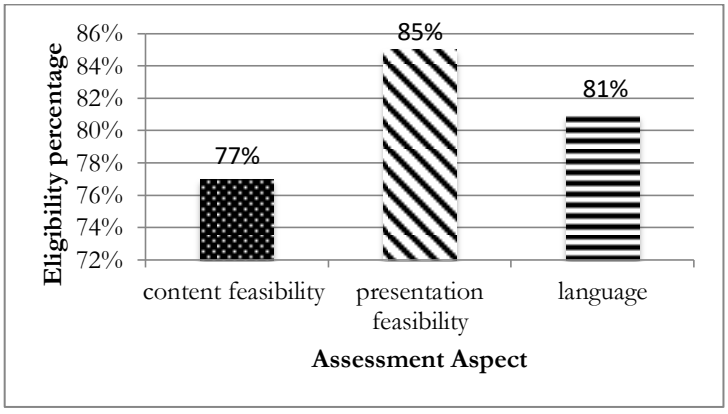

Figure 2. Science Subject Matter Expert Assessment

The results of the analysis of the material expert's assessment of the validity of the Environmental Knowledge Module obtained an average overall score of 81% with a decent category. The material aspect consists of three aspects of assessment. The first aspect is the content feasibility aspect. The results of the assessment of the material expert validator on the content feasibility aspect obtained an overall average score of 77% with a decent category.

The content feasibility aspect consists of sub-indicators, namely the suitability of the material to the indicators, the accuracy of the material, the recency of the material, and encouraging curiosity. Thus, the module is very concerned about the content of the material by adjusting to the development of science and topics or examples of activities that are in

accordance with everyday circumstances. This is in accordance with the characteristics of a good and correct module is a module that is in accordance with the curriculum and in accordance with the characteristics of students (Defianti et al., 2022; Fathurrohman, 2020; Husna et al., 2020; Kimianti & Prasetyo, 2019; Larasati et al., 2020; Jannah et al., 2013). In addition, the sub-indicator of the suitability of the material with the indicator discusses the completeness, flexibility and depth of the material. In the module, the material must be comprehensive, concise and clear. This aspect of content feasibility is the aspect that gets the least percentage results, the shortcomings are in the sub-indicators of the accuracy of concepts and definitions, and the accuracy of images, diagrams and illustrations. The cause is the lack of accuracy of the images and concepts presented as well as images and illustrations that are less clear, in terms of writing formulas there are also sizes that are not the same size.

In the second aspect, namely the presentation feasibility aspect, it gets an average score of 80% according to Table 4.2. The presentation technique sub-indicator discusses the conciseness of the concept and also the involvement of students in the learning process. In planting the concept of knowledge and the involvement of students, this Environmental Knowledge Module is needed in the learning process. The third material aspect is language which gets an average score of 81%. In this Environmental Knowledge Module, it contains all sub-indicators including suitability for module development so that it can help students. The use of vocabulary in teaching materials is very important to note, because good teaching materials are teaching materials assessed in terms of readability both in terms of language difficulty and substance must be in accordance with the level of learning ability. Thus, the Environmental Knowledge Module that integrates Islamic values is suitable for use.

Quran and Tafsir Material Assessment

Expert assessment of the material substance of the Qur'an and tafsir which aims to determine the feasibility of the Qur'anic and tafsir material in the Environmental Knowledge Module developed. The Environmental Knowledge Module that integrates Islamic values is developed and combined with environmental materials which each title has an integration of Quranic verses which aims to make students know the relationship between daily phenomena and Quranic verses. So that the author validates this Environmental Knowledge Module to experts who understand the Qur'an and tafsir.

The results of the assessment of the Environmental Knowledge Module by the Qur'an and interpretation material substance experts as a whole from the aspects assessed get decent criteria (74%) so that teaching materials can be used in the learning process. Overall, the aspect that gets the highest percentage is the environmental aspect with very feasible criteria (88%), followed by the environmental management aspect with feasible criteria (69%) and finally the aspect of environmental problems with feasible criteria (66%) with a lower percentage than the environment and environmental management. Based on and suggestions for improvement filled in by the subject matter experts of the Qur'an and tafsir, namely reading more about the miracles of the Qur'an and using tafsir Al-'Ilmi.

Based on the results of the analysis of the assessment of the Qur'anic and interpretive material regarding the feasibility of the environmental knowledge module in the aspect of the Qur'anic and interpretive material, the average overall score is 74% with a feasible category. The percentage of the results of the assessment by the Qur'an and interpretation material substance experts on each aspect can be seen in the following graphical image:

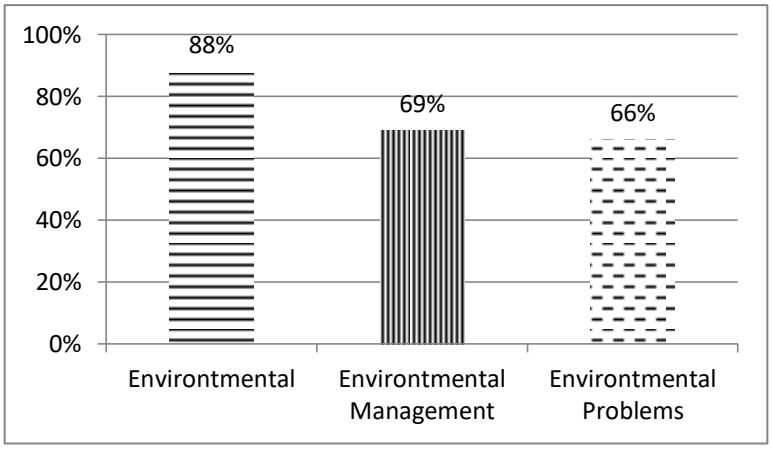

Figure 3. Substance Expert Assessment of the Quran and Interpretation Meters

The development of inquiry-based modules by integrating Islamic values is believed to improve students' science literacy. This is supported by the results of research (Fajar & Habibbulloh, 2021), who said that Inquiry-based learning provides opportunities for students to continue to develop their potential optimally both in terms of cognitive, affective and psychomotor in discovering science concepts.

Limitations in this study, no field trials were carried out either limited or broadly or operational fields to students to assess the practicalization and effectiveness of inquiry-based modules and Islamic values.

CONCLUSION

The feasibility of the inquiry-based environmental knowledge module and Islamic values based on the assessment of media experts obtained 91% feasibility with the Very Feasible category, the assessment of science material substance experts obtained 80% feasibility with the feasible category and the assessment of the Qur'an and interpretation material substance experts obtained 74% feasibility with the feasible category. There is a need for limited scale and broad scale trials involving a larger sample quantity to determine the feasibility level of inquiry-based modules and Islamic values. It is hoped that this module can not only improve students' scientific literacy but also improve students' Islamic literacy.

REFERENCES

Abu-Ghaneema, E. (2018). Meaningful Learning: The Main Constitutive and Consecutive Components and their Presence in Science Teaching. *Yearbook of Pedagogy*, *41*(1), 183–192. https://doi.org/10.2478/rp-2018-0013

Afandi, A., Sajidan, S., Akhyar, M., & Suryani, N. (2018). Pre-Service Science Teachers' Perception About High Order Thinking Skills (HOTS) in the 21st Century. *International Journal of Pedagogy and Teacher Education*, *2*(1), 107. https://doi.org/10.20961/ijpte.v2i1.18254

Ahmadi, Z. S. (2022). Peningkatan Literasi Lingkungan Siswa di Sekolah. Educatoria: Jurnal Ilmiah Ilmu Pendidikan, 2(3), 171-175.

Aini, K., & Dwiningsih, K. (2014). Penerapan Model Pembelajaran Inkuiri Dengan Hands on Minds on Activity Untuk Meningkatkan Hasil Belajar Siswa Pada Materi Pokok Termokimia Implementation Inquiry Learning Model With Hands on Minds on Activity To Improve Student'S Achievments At Thermochem. *UNESA Journal of Chemical Education*, *3*(1), 99–105.

Bögeholz, S., Böhm, M., Eggert, S., & Barkmann, J. (2014). Education for Sustainable

Development in German science education: Past - present - future. *Eurasia Journal of Mathematics, Science and Technology Education*, *10*(4), 231–248. https://doi.org/10.12973/eurasia.2014.1079a

Chandramouli, S. H., Kronenberger, W. G., & Pisoni, D. B. (2019). Verbal learning and memory in early- implanted, prelingually deaf adolescent and adult cochlear implant users. *Journal of Speech, Language, and Hearing Research*, *62*(4), 1033–1050. https://doi.org/10.1044/2018_JSLHR-H-18-0125

Defianti, A., Putri, D. H., Rohayati, S., Herawati, A., & Chen, L. Y. (2022). Development of E-Module Guideline on Basic Physics Practicum for Science Process Skills in a Pandemic Period. *Journal of Natural Science and Integration*, *5*(1), 45. https://doi.org/10.24014/jnsi.v5i1.15595

Dewey, J. (1920). *How We Think* (pp. 1–2236). NEW YORK CHICAGO.

Duyen & Loc. (2022). European Journal of Educational Research. *European Journal of Educational Research*, *11*(1), 1–16.

Eutsler, L., Naik, M., Peecksen, S., & Branton, R. (2023). Impact of inquiry portfolios within a service-learning literacy field experience on preservice teachers' knowledge growth and GPA. *Teaching and Teacher Education*, *124*, 104032. https://doi.org/10.1016/j.tate.2023.104032

Fajar, D. M., & Habibbulloh, M. (2021). Pengembangan Modul IPBA Materi Sistem Bumi-Bulan Berbasis Integrasi Sains-Islam. *Journal of Natural Science and Integration*, *4*(1), 126. https://doi.org/10.24014/jnsi.v4i1.11796

Fathurrohman. (2020). Pengembangan modul fisika dasar I berbasis literasi sains. *Pancasakti Science Education Journal*, *5*(9), 4–11.

Feldman, D. H. (2004). Piaget's stages: The unfinished symphony of cognitive development. *New Ideas in Psychology*, *22*(3 SPEC. ISS.), 175–231. https://doi.org/10.1016/j.newideapsych.2004.11.005

Fitri, I., & Fatisa, Y. (2019). Penerapan Model Pembelajaran Inkuiri Terbimbing Untuk Mendukung Kemampuan Literasi Sains Siswa Pada Materi Sistem Koloid. *Journal of Natural Science and Integration*, *2*(2), 60. https://doi.org/10.24014/jnsi.v2i2.7888

Herman, B. C. (2015). The Influence of Global Warming Science Views and Sociocultural Factors on Willingness to Mitigate Global Warming. *Science Education*, *99*(1), 1–38. https://doi.org/10.1002/sce.21136

Husna, A., Hasan, M., Mustafa, M., Syukri, M., & Yusrizal, Y. (2020). Pengembangan Modul Fisika Berbasis Integrasi Islam-Sains pada Materi Gerak Lurus untuk Meningkatkan Hasil Belajar Peserta Didik. *Jurnal Pendidikan Sains Indonesia*, *8*(1), 55–66. https://doi.org/10.24815/jpsi.v8i1.15539

Jannah, M. (2020). Inkuiri Dalam Pengajaran Dan Pembelajaran Sains. Tarbiyah Wa Ta'lim: Jurnal Penelitian Pendidikan dan Pembelajaran, 95-107.

Jannah, M., Halim, L., Meerah, T. S. M., & Fairuz, M. (2013). Impact of Environmental Education Kit on students' environmental literacy. *Asian Social Science*, *9*(12 SPL ISSUE), 1–12. https://doi.org/10.5539/ass.v9n12p1

Jannah, M., Oviana, W., & Nurhalizha, I. (2021). Pengembangan Modul IPA Berbasis Islamic Science Technology Engineering and Mathematics Pada Materi Hukum Newton. *Edusains*, *13*(1), 83–94. https://doi.org/10.15408/es.v13i1.13805

Kazwaini, K., Nazir, M. ., Promadi, P., & Sari, D. C. (2021). Nilai Keislaman pada Buku Ajar IPA

SMP/MTs untuk Pembentukan Karater Religius Siswa. *Journal of Natural Science and Integration*, *4*(2), 277. https://doi.org/10.24014/jnsi.v4i2.11278

Kemendikbud. (2016). Jendela Pendidikan dan Kebudayaan. *Menteri Pendidikan Dan Kebudayaan*, 1–32.

Kemendikbud, K. P. R. I. (2020). *Kepmendikbud Nomor 754/P/2020 Tentang Indikator Kinerja Utama Perguruan Tinggi Negeri dan Lembaga Layanan Pendidikan Tinggi di Lingkungan Kementerian pendidikan dan Kebudayaan Tahun 2020*. *06 Agustus 2020*.

Kimianti, F., & Prasetyo, Z. K. (2019). Pengembangan E-Modul IPA Berbasis Problem Based Learning Untuk Meningkatkan Literasi Sains Siswa. *Kwangsan: Jurnal Teknologi Pendidikan*, *7*(2), 91. https://doi.org/10.31800/jtp.kw.v7n2.p1--13

Kostiainen, E., Ukskoski, T., Ruohotie-Lyhty, M., Kauppinen, M., Kainulainen, J., & Mäkinen, T. (2018). Meaningful learning in teacher education. *Teaching and Teacher Education*, *71*, 66–77. https://doi.org/10.1016/j.tate.2017.12.009

Kurniawan, D. A., Wirayuda, R. P., Putri, W. A., Rini, E. F. S., Ginting, B., Aktapianti, A., & Ratnawati, T. (2023). Impact of Science Process Skills on Thinking Skills in Rural and Urban Schools. International Journal of Instruction, 16(2).

Larasati, A. D., Lepiyanto, A., Sutanto, A., & Asih, T. (2020). Pengembangan E-Modul Terintegrasi Nilai-Nilai Islam Pada Materi Sistem Respirasi. *Jurnal Penelitian Pendidikan Biologi*, *4*(1), 1–9.

Piipponen, O. (2023). Students' perceptions of meaningful intercultural encounters and long-term learning from a school story exchange. *International Journal of Educational Research*, *119*(February), 102169. https://doi.org/10.1016/j.ijer.2023.102169

Purwani, L. D., Sudargo, F., & Surakusumah, W. (2018, May). Analysis of student's scientific literacy skills through socioscientific issue's test on biodiversity topics. In Journal of physics: conference series (Vol. 1013, No. 1, p. 012019). IOP Publishing

Rustaman, N. (2008). Teaching Science to Develop Scientific Abilities in Science Education. *Proceeding The Second International Seminar on Science Education. "Current Issues on Research and Teaching in Science Education*.

Rustaman, N. Y. (2007). *Belajar IPA Melalui Keterampilan Proses Sains (KPS)*. 23.

Safitri, R. W., Primiani, C. N., & Hartini, H. (2018). Pengembangan media flashcard tematik berbasis permainan tradisional untuk kelas IV sub tema lingkungan tempat tinggalku. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, *8*(1), 1. https://doi.org/10.25273/pe.v8i1.1332

Stacey T. Lutz & William G. Huitt. (2003). *Information Processing and Memory: Theory and Applications*. 1–17.

Takaya, K. (2008). Jerome Bruner's theory of education: From early Bruner to later Bruner. *Interchange*, *39*(1), 1–19. https://doi.org/10.1007/s10780-008-9039-2

Triska, C. (2021). *Analisis Kurikulum Matematika di Finlandia Serta Perbandingannya dengan Kurikulum Matematika di Indonesia*. 1–190.

Zulaichah, S., Sukarmin, S., & Masykuri, M. (2021). Pengembangan Modul IPA Berbasis Inquiry Lesson Pada Materi Usaha Dan Pesawat Sederhana Untuk Meningkatkan Kreativitas Ilmiah Siswa. *Edusains*, *13*(1), 64–72. https://doi.org/10.15408/es.v13i1.17389