CHEMISTRY LEARNING INNOVATION WITH RELIGIOUS CHARACTER INTEGRATED REACTION RATE MODULE FOR CLASS XI STUDENTS OF SENIOR HIGH SCHOOL

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Abstract:
Chemistry learning activities for high school students to make it more attractive can be done with learning media innovations. The appropriate learning media to be applied at this time is blended learning-based media. One of the characteristics that need to be developed in the blended learning model is religious character. The spiritual nature of chemistry lessons can be related to the verses in the Qur'an, one of which is the material on the rate of reaction. This study aimed to determine the module's effectiveness, student responses, and the feasibility of the module for class XI students on the reaction rate material. This research method uses R&D (Research and Development) Borg & Gall. The results showed that the validation test of religious characters' integrated reaction rate module showed a very high value with an average material score of 87.6% and a media score of 89%. In the small-scale trial, the results of student responses to the integrated module with religious character were categorized as very feasible. Based on the discussion results, it can be concluded that the reaction rate module with religious characteristics can be used as an alternative medium for class XI students.

Keywords: module, reaction rate, religious

Abstrak:
Kegiatan pembelajaran kimia untuk siswa SMA agar lebih menarik dapat dilakukan dengan inovasi media pembelajaran. Media pembelajaran yang sesuai untuk bisa diterapkan pada saat ini adalah media berbasis blended learning. Pembentukan karakter yang perlu dikem-bangkan dalam model pembelajaran blended learning salah satunya adalah karakter religius. Karakter religius pada pelajaran kimia dapat dikaitkan dengan ayat yang ada pada Al-Qur'an salah satunya adalah materi laju reaksi. Tujuan penelitian ini adalah untuk mengetahui keefektifan modul, respon siswa, dan kelayakan modul bagi siswa kelas XI pada materi laju reaksi. Metode penelitian ini menggunakan R&D (Research and Development) Borg & Gall. Hasil penelitian menunjukkan bahwa uji validasi modul laju reaksi terintegrasi karakter religius menunjukkan nilai yang sangat tinggi dengan rata-rata skor materi 87,6% dan media 89%. Pada uji coba skala kecil hasil respon tanggapan siswa terhadap modul terintegrasi dengan karakter religius dikategorikan sangat layak. Berdasarkan hasil pembahasan, dapat disimpulkan bahwa modul laju reaksi berkarakter religius dapat digunakan sebagai media alternatif bagi siswa kelas XI.

Kata Kunci: *modul, laju reaksi, religius*

Introduction

The development of technology and information and globalization in the 21st century have attracted the attention of practitioners, educators, and international organizations[1]. Learning activities in the 21st century are an implication of the development of civilization in society from time to time[2]. In the 21st century, teachers and students are expected to be able to adapt to technology and adopt various ICT-based learning models to keep up with the developments of the current digital era[3]. 21st-Century Educational Skills include the 4Cs, namely *Critical Thinking and Problem Solving*, *Creativity*, *Ability to Work Collaboratively*, *Communication Skills*, and one of the efforts so that students can compete in the 21st century is to use a scientific approach[4]. The scientific method is a learning model that uses scientific rules and contains data collection activities through questioning, observation, experimentation, processing information or data, and communicating it[5].

Education is a planned system to create an atmosphere of the learning process so that students can actively increase their potential to possess personality, religion, intelligence, noble character, self-control, and skills needed for society, nation, and state[6]. Education is not only a knowledge transfer activity but also a process of exploring potential and self-improvement to a higher level and guided by teachers so that students will gain knowledge and character[7].

The education that is being carried out at present seems only to discuss the graduation rate so that it does not emphasize the religious aspects of students[8]. The decline in morals can be seen based on the many deviations that have been made by students, such as pornography, brawls, drugs, and others[9]. It is contrary to the culture and religious norms that apply in Indonesia. The progress of science and technology in the era of globalization makes it easier to access information and knowledge. It can cause students to fail to obtain an education if misused.

If fulfilled maximally, three main things in education will form superior human resources, including the quality of learning, curriculum, and learning methods. The learning rate can increase if learning methods and innovations increase student potential and curriculum renewal.

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[3] Helen B Boholano, "Smart Social Networking: 21st Century Teaching and Learning Skills," *Research in Pedagogy* 7, no. 1 (2017): 21–29.

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[8] Susi Susilawati, Devi Aprilianti, and Masduki Asbari, "The Role of Islamic Religious Education in Forming the Religious Character of Students," *Journal of Information Systems and Management (JISMA)* 01, no. 01 (2022): 1–5.

[9] Alfauzan Amin et al., "Analysis of the Relationship of Religious Character , Perseverance and Learning Motivation of Junior High School Students," *Journal of Innovation in Educational and Cultural Research* 3, no. 4 (2022): 536–547.

In Indonesia, the current curriculum is the revised 2013 curriculum. This curriculum consists of social core competencies, knowledge, religious attitudes, and mastery of student skills[10]. The revised 2013 curriculum discusses the science learning process related to student activities, and it is hoped that students can have experience carrying out learning activities[11]. Students' self-development and independence can be the main focus of the revised 2013 curriculum. One of the problems and difficulties in implementing the revised 2013 curriculum is the competence of religious attitudes[12]. This difficulty is because the teacher has not been able to implement religious perspectives and characters in the chemistry learning process. The public responds that the religious aspect of students is obtained from studying spiritual science alone and is not related to general science[13].

The public opinion is incorrect because the existing knowledge comes from Allah SWT through the related verses of the Qur'an. When studied more deeply, the poem contains science related to the universe. This opinion can result in a distance between the two disciplines, namely science (general) and religion. This problem is the background for the emergence of the idea of integrating science. The integration of science is a step of merging or merging the disciplines of religion with science to become a unified science. Combining the two sciences is intended to instill religious character and educate students' intellectuals.

One of the learning strategies is to present teaching materials that contain religious character attitudes[14]. Chemistry teaching materials currently do not connect the science of religion with science, so students have not been able to join the chemistry being studied with the verses in the Qur'an.

Teaching materials can be used as a guide for students to focus on skills and cognitive aspects[15]. The results of the observation stated that students had difficulty learning chemistry because the learning resources used were ordinary textbooks which had not been able to increase student interest in learning, so an alternative learning media was needed, namely modules[16]. The module can be used because it contains chemistry learning material. Students can self-evaluate by

[10] Imam Gunawan, "Indonesian Curriculum 2013: Instructional Management, Obstacles Faced by Teachers in Implementation and the Way Forward," *3rd International Conference on Education and Training* (2017).

[11] Yenita Roza, Gita Satria, and Syarifah Nur Siregar, "The Development of E-Tutorial on Implementation National Curriculum 2013 for Mathematics Teacher," in *Journal of Physics: Conference Series*, 2017.

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[16] Ratna Kumala Dewi and Sri Wardani, "Analysis of Student Difficulties and Learning Outcomes with Guided Inquiry Learning Model," *Social Science, Education and Humanities Research (ASSEHR)* 247, no. 1 (2018): 379–384.

working on the questions contained in the module, and there is an answer key[17]. The advantage of the module is that it allows students to learn independently without a teacher so that each student can understand the material more quickly. Using an integrated chemistry module with verses in the Qur'an affects student achievement.

The results of interviews conducted with chemistry teachers at MAN 4 Jombang obtained information on the learning process at the school using teaching materials in the form of student worksheets (LKS) and textbooks that have not been integrated with religious characters in the Qur'an. Some students are not enthusiastic about learning chemistry because they think it is difficult to understand and learn. The results of interviews conducted with chemistry teachers at MAN 4 Jombang obtained information on the learning process at the school using teaching materials in the form of student worksheets (LKS) and textbooks that have not been integrated with religious characters in the Qur'an. Modules that incorporate religious nature are considered essential to be given to students by the revised 2013 curriculum, which demands spiritual and contextual learning.

The chemistry module developed is the chapter on reaction rates. The chapter on reaction rates is one of the most challenging chemistry topics students can understand. Students' difficulty in the reaction rate material is related to the concept of reaction rate and the factors that influence it[18]. The problem of the material for this student will affect the understanding of the concept of chemistry learning. The chemistry concepts are related to each other; if there is an error, it will affect the following learning. It will lead to low mastery of students in chemistry; it affects student learning outcomes[19]. The reaction rate material needs to be studied more deeply in its implementation in the Qur'an.

Based on the background of the problem, the development of an integrated chemistry learning module with religious characters based on the Qur'an can foster attitudes and religiousness in students. This study aims to develop an integrated chemistry learning module for religious symbols in the material for reaction rates for class XI SMA at MAN 4 Jombang.

Teaching Materials

a. Teaching materials

Teaching materials are all kinds of materials (information, tools, or texts) that are systematically arranged and equipped with competencies that will be given to students and used in the learning process to plan, study, and implement learning[20]. In another sense, teaching materials are a set of learning materials/tools used by teachers and arranged systematically in teaching and learning activities[21].

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[17] Nikmatul Azmi Zakiyah, "Development of E-Module STEM Integrated Ethnoscience to Increase 21st Century Skills," *International Journal of Active Learning* 7, no. 1 (2022): 49–58.

[18] S. Mulyani et al., "Improving Students' Generic Skill in Science through Chemistry Learning Using Ict-Based Media on Reaction Rate and Osmotic Pressure Material," *Jurnal Pendidikan IPA Indonesia* 5, no. 1 (2016).

[19] Sudarmin et al., "Students' Innovative and Creative Thinking Skill Profile in Designing Chemical Batik after Experiencing Ethnoscience Integrated Science Technology Engineering Mathematic Integrated Ethnoscience (Ethno-Stem) Learnings," *Journal of Physics: Conference Series* 1567, no. 2 (2020).

[20] Siti Nurul Izzah et al., "The Development of Science Learning Document Grounded on STEM-Approach Integrated Ethnoscience" 443, no. Iset 2019 (2020): 554–558.

[21] R. K. Dewi, S. Wardani, and N. Wijayati, "Profile of Students Critical Thinking Skills on Redox Concept in SMA Negeri 8 Semarang," *Journal of Physics: Conference Series* 1321, no. 2 (2019).

Teachers and students in learning activities carry out a learning process. Learning activities are not only obtained from the teacher but can be obtained independently by students. Students can accept Learning activities through several teaching materials provided by the school[22]. Teaching materials are things related to data, objects, people, ideas, facts, and others that can lead to a learning process. Examples of teaching materials include modules, books, and other learning media.

Teaching materials are divided into two types, namely printed teaching materials and non-printed teaching materials. It printed teaching materials such as handouts, books, modules, textbooks, and worksheets[23]. The booklet is a type of teaching material containing a summary of material from the literature adapted to the competencies to be developed in students. A module is a teaching material systematically arranged and used for independent learning or getting minimal direction from the teacher. Learning chemistry at school can be improved by applying ICT. ICT-based chemistry learning can be encyclopedia, web, blogs, e-modules, etc[24].

b. Module

Modules are a type of printed teaching material designed so that students can study independently[25]. Students can learn on their own without a direct teacher. Another understanding states that the module is a systematic and conventional teaching material that can be used for independent learning with minimal or no guidance from the teacher[26]. Modules can also be interpreted as teaching materials arranged in a particular form so students can learn or understand independently[27].

The advantage of the chemistry e-module is that it can motivate students to experience an increase because the work on assignments is by the abilities of each student and can directly evaluate students so that teachers will more quickly find out whether students are successful or not in the learning process, can be studied anytime and anywhere[28]. Because it is easy to carry, repairs or revisions are easier to do. The weakness of learning using modules is that it requires expertise in

[22] I. B. Sudria et al., "Do Kolb ' s Learning Styles under Inductive Guided-Inquiry Learning Affect on Learning Outcomes ?," *International Journal of Instruction* 11, no. 2 (2018): 89–102.

[23] M. C. Sukma and M. Ibrahim, "Developing Materials for Active Learning of Guided Inquiry-Integrated Bowling Campus on the Topic of Sense of Hearing and Sonar System of Living Organism," *Jurnal Pendidikan IPA Indonesia* 5, no. 2 (2016): 256–260.

[24] Ratna Kumala Dewi et al., "Demand of ICT-Based Chemistry Learning Media in the Disruptive Era," *International Journal of Evaluation and Research in Education (IJERE)* 8, no. 2 (2019): 265–270.

[25] A. N. Khasanah, S. Sajidan, and S. Widoretno, "Effectiveness of Critical Thinking Indicator-Based Module in Empowering Student's Learning Outcome in Respiratory System Study Material," *Jurnal Pendidikan IPA Indonesia* 6, no. 1 (2017): 187–195.

[26] F. S. Irwansyah et al., "Designing Interactive Electronic Module in Chemistry Lessons," in *Journal of Physics: Conference Series*, vol. 895, 2017.

[27] Hasbi Azis and Yulkifli, "Preliminary Research in the Development of Smartphone-Based E-Module Learning Materials Using the Ethno-STEM Approach in 21st Century Education," *Journal of Physics: Conference Series* 1876, no. 1 (2021): 1–8.

[28] Hasbi Azis, "Effectiveness of E-Module Based on Integrated Project Based Learning Model Ethno-STEM Approach on Smartphones for Student Senior High School Grade XI," *International Journal of Progressive Sciences and Technologies (IJPSAT* 30, no. 1 (2021): 273–279, http://ijpsat.ijsht-journals.org.

compiling modules, requires several learning resources as references, and takes a long time to manufacture.

In the preparation of the chemistry e-module, it must be based on the characteristics of the module, namely by drafting the module, defining and formulating the elements of the module, making instructions for using the module, student activities, student assignment sheets along with answer keys, and a bibliography[29].

The cover on the front of the module reads the title of the integrated reaction rate material with religious/Islamic characters. In contrast, on the back cover of the module, a simple explanation is given about the main focus of the reaction rate module being developed, as shown in Figure 1.

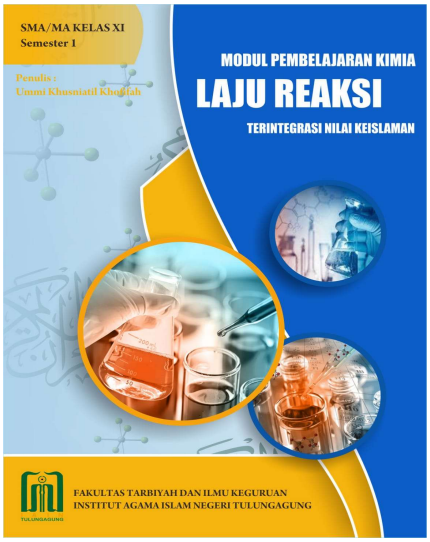

Figure 1. Cover of Integrated Islamic Values Module

c. Integration of Science in the Qur'an

Integration in the sense of language is comprehensive or whole. Meanwhile, etymologically, integration is a renewal so that it can become a unified whole. The integration of Islam and science can be interpreted as an effort to unite or combine religious disciplines with science *to* become a unified whole[30]. The goal of integration is to integrate the two fields in one or more ways. The character and identity of the scientific discipline must be maintained.

Science is the knowledge that is empirical and logical or interpreted as knowledge[31]. Science is everything that has character for a Muslim because, with knowledge, we will be able to build a

[29] Siti Nurshuhada Mohd Hamid et al., "E-Content Module For Chemistry Massive Open Online Course (Mooc): Development And Students' Perceptions," *Journal of Technology and Science Education* 11, no. 1 (2021): 67–92.

[30] Muhammad Munadi, "Integration of Islam and Science: Study of Two Science Pesantrens (Trensain) in Jombang and Sragen," *Jurnal Pendidikan Islam* 5, no. 2 (2016): 287.

[31] Arief Muttaqiin, Murtiani Murtiani, and Yulkifli Yulkifli, "Is Integrated Science Book with Ethno-STEM Approach Needed by Secondary School Students?," *Journal of Physics: Conference Series* 1788, no. 1 (2021).

larger Islamic civilization[32]. Science is also one of worship that can carry out the teachings and commands of Allah SWT. Science can be related to the verses in the Qur'an, As shown in Figure 2. One science and another science are interconnected because it contains the same principle. The Qur'an has five knowledge clusters: social sciences, religious sciences and humanities, mathematics, natural sciences, and professional and applied sciences.

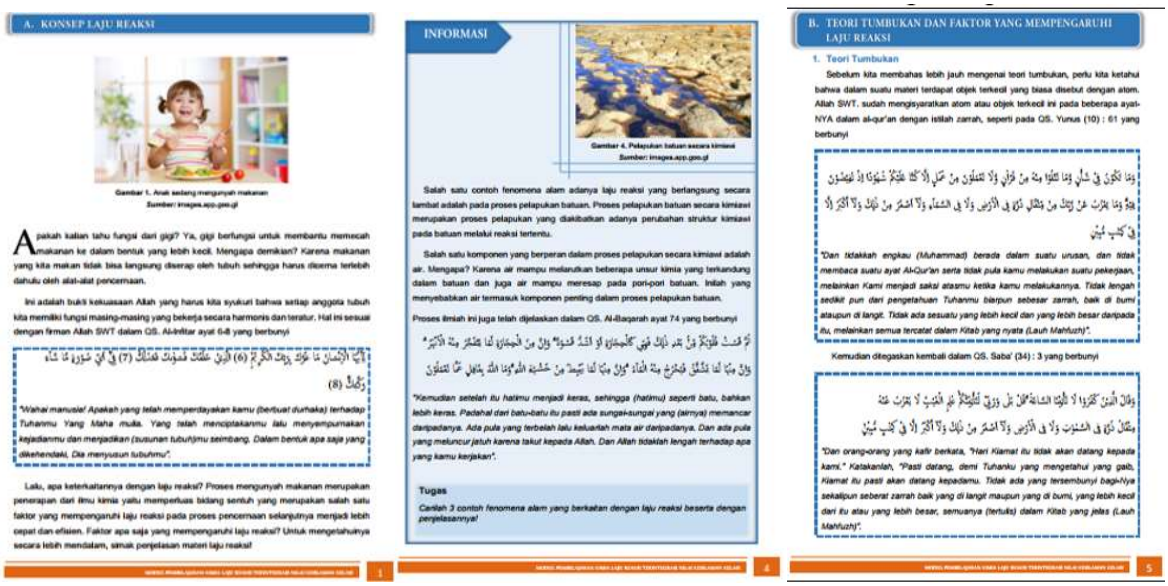

Figure 2. The Integration of Science in the Qur'an on Module

d. Reaction Rate

Reaction rate describes how fast or slows a reaction takes place. The rate has a relationship with the time-lapse. Speed is inversely proportional to time. If the time required is short, it means the speed is significant. Conversely, if the time interval is long, the rate is low.

The reaction rate illustrates how fast a chemical reaction can take place[33]. The rate is related to the time interval (t). The rate of response is inversely proportional to the time interval. If the time is short, the reaction rate will be much greater. On the other hand, if the time interval is longer, the reaction rate will be lower. The reaction rate changes the concentration of the reactants or reaction products per unit of time. The reaction rate is influenced by: a) Concentration, b) Temperature, c) Touch surface area and d) Catalyst[34].

Chemical reactions can take place when molecules, atoms, or ions of reactants collide with each other[35]. This collision occurs when the substances that will react are in direct contact. The

[32] Munadi, "Integration of Islam and Science: Study of Two Science Pesantrens (Trensain) in Jombang and Sragen."

[33] Sudria et al., "Do Kolb ' s Learning Styles under Inductive Guided-Inquiry Learning Affect on Learning Outcomes ?"

[34] Mulyani et al., "Improving Students' Generic Skill in Science through Chemistry Learning Using Ict-Based Media on Reaction Rate and Osmotic Pressure Material."

[35] Ahmad Basheer et al., "The Effectiveness of Teachers' Use of Demonstrations for Enhancing Students' Understanding of and Attitudes to Learning the Oxidation-Reduction Concept," *Eurasia Journal of Mathematics, Science and Technology Education* 13, no. 3 (2017): 555–570.

reaction rate is directly proportional to the concentration of the reactants. The more the surface area of communication between the reacting implications, the more molecules collide and the faster the reaction rate. The rate of the reaction depends on the temperature. This is because when the temperature is raised, the molecules in the reactants will move faster so that their kinetic energy will increase so that the molecules will collide more quickly, so the reaction rate will be faster[36].

Catalysts can speed up the rate of a reaction but do not change the response. According to the collision theory, the trigger plays a role in lowering the activation energy. The catalyst changes the activation energy in a reaction from high to low[37].

Method

The research method is development research or R&D (Research and Development) with the Borg & Gall development model. The Borg & Gall model has ten stages of development[38]. However, this study only reached the sixth stage due to time constraints. Stages Borg & Gall is as follows.

1. Potential and Problems

   Potential and problems obtained from reviewing several research journals and interviews with chemistry teachers at MAN 4 Jombang
2. Information Gathering

   This research is used to design a product to overcome the previously-mentioned problems. This stage is done by looking for various references for materials to compose the material in the module to be developed.
3. Product Design

   Module, which integrates the religious character of the reaction rate material, is used as a development product that has been compiled. The stages of product design include designing media, collecting materials, and developing products based on product development procedures.
4. Design Validation

   Module validated by three validators can be seen as the validity of the developed module.
5. Design Improvements

   Fix product flaws to minimize errors in modules created and developed.
6. Product Trial

[36] Pawel Bernard et al., "Demonstration of the Influence of Specific Surface Area on Reaction Rate in Heterogeneous Catalysis," *Journal of Chemical Education* 98, no. 3 (2021): 935–940.

[37] Samuel J. Hendel and Elizabeth R. Young, "Introduction to Electrochemistry and the Use of Electrochemistry to Synthesize and Evaluate Catalysts for Water Oxidation and Reduction," *Journal of Chemical Education* 93, no. 11 (2016): 1951–1956.

[38] Khasanah, Sajidan, and Widoretno, "Effectiveness of Critical Thinking Indicator-Based Module in Empowering Student's Learning Outcome in Respiratory System Study Material."

It was carried out in a limited group to find out the results of student responses to the developed module.

This research was conducted at MAN 4 Jombang. The subjects of this study were students of class XI MIA 3, XI MIA 4, and XI MIA 5. Data collection techniques used include: First, interviews were conducted with the resource person, a chemistry teacher at MAN 4 Jombang before the research was carried out. It is done to discover the potential and problems that can study more deeply in this study. Before conducting field trials, validation activities are conducted to assess product designs based on the validator's rational thinking. Three validators carried out validation activities, two from the chemistry lecturer at UIN Sayyid Ali Rahmatullah and the other from a chemistry teacher at MAN 4 Jombang. Third, the questionnaire given to the respondents, namely 17 students, was used to determine student responses to the integrated reaction rate module of the developed religious characters.

The data analysis technique used to answer the validation sheet is based on the Likert scale. Score 4 in the outstanding category; a score of 3 suitable types; score two categories less; and a score of 1 type is deficient. Meanwhile, the provision of answer choices set in the student response questionnaire is a score of 4 in the category of strongly agree; a score of 3 types strongly agree; a score of 2 categories disagree; and a score of 1 in the category of strongly disagree. The criteria used as guidelines to determine the validity, student responses, and feasibility of the developed module are shown in Table 1.

Table 1. Student Character Result Criteria

Percentage (%)	Validity	Student Response	Category
< 25%	Very Invalid	Very Not Good	Very Less Worthy
26-50%	Less Valid	Not good	less worthy
51-75%	Valid	Well	Worthy
75-100%	Very Valid	Very good	Very Worthy

Results and Discussion

The steps in making the module are determining the topic or material, looking for references, integrating the material with another verse, compiling the module, validating, and testing the module. When designing the module, keep in mind the language aspect, which is easy to understand, communicative, and by the EYD. Sub-materials integrated with religious characters are found in apperception or giving an initial description of the reaction rate material, collision theory, and examples of reaction rate events in everyday life, shown in Table 2.

Table 2.

Development of Integrated Chemistry Learning Module for Religious Character

No.	Verse Integration on Al Qur'an
1.	A chemical perception of reaction rates regarding how to chew food is an example of a factor affecting the reaction rate, the surface area found in Surah Al-Infitar verses 6-8.
2.	The process of weathering rocks is an example of a slow reaction rate. This concept is used to explain the notion of reaction rate, which is a quantity that indicates how fast or slow a chemical reaction can take place. It is an integration of Surah Al-Infitar verses 6-8
3.	Integration of Surah Yunus verse 61 and Surah Saba verse 3 explains that in material, there are atoms that are never stationary, so collisions between particles are possible.
4.	The articles that make up the atom with their charge are the integration of Surah Al Ikhlas verses 1-2. It makes it possible when atoms collide. A product will form due to breaking the bonds of particles in a reacting substance.

The integration of religious characters is not only in chemistry but also in the evaluation questions contained in the chemical reaction rate learning module.

Table 3.

Integration of Religious Characters in Evaluation Questions

No.	Verse Integration on Al Qur'an	Development of Evaluation Questions
1.	Surah Al Hadid explains iron, one of the metals in chemical elements.	3. Dalam QS Al-Hadid ayat 25 menyatakan bahwa besi memiliki kekuatan yang luar biasa. Namun, besi juga dapat mengalami oksidasi oleh oksigen di udara. Peristiwa ini disebut… A. Pembusukan B. Perkaratan C. Pelarutan D. Pelapukan E. Penguapan
2.	Surah Yasin verse 80 explains the function of fire as a source of heat energy.	11. Dalam QS. Yasin ayat 80, Allah mengisyaratkan manusia agar tidak melupakan api sebagai sumber energi panas. Api memiliki banyak manfaat dalam kehidupan sehari-hari, seperti ketika kita ingin membuat teh manis kita perlu mendidihkan air terlebih dahulu agar gula dan teh dapat larut lebih cepat dalam air. Faktor yang mempengaruhi cepat lambatnya teh dan gula larut dalam air adalah… A. Konsentrasi B. Suhu C. Katalis D. Luas permukaan E. Massa air
3.	Surah Al-Infitar verses 6-8 which I explain the systematic and harmonious function of human organs.	17. Allah SWT menciptakan setiap bagian yang menyusun tubuh manusia dengan fungsinya dengan sangat harmonis. Seperti biokatalisator yang terdapat dalam tubuh yang disebut... A. Enzim B. DNA C. Glikogen D. Lipid E. Asam nukleat

Module Validity Analysis

The activity of assessing product designs made based on the rational thinking of the validator without field trials is a design validation activity. The goal is to obtain input in suggestions for improvement from the validator to improve the module. The validation analysis results on the module integrated with religious characters in the reaction rate material are as follows.

1. Material Validation

Material experts can validate by writing a review on the validation sheet that has been provided consisting of four aspects, namely aspects of language validity, content validity, presentation validity aspects, and scientific aspects in the Qur'an. The assessment of the validation sheet consists of four aspects, namely aspects of presentation validity, content validity, language, and science in the Qur'an. Based on the calculation of each aspect, an average percentage of 87.6% was obtained, including the very valid criteria in terms of the material contained in the developed reaction rate module. The portion of content validity aspect is 83.3%, language validity aspect is 85%, presentation validity aspect is 92.9%, and science validity aspect in Al-Qur'an is 89.3%. In conclusion, valid criteria were obtained to be tested with revisions, meaning that there were several suggestions for improvement from the validator, such as adding an explanation to the reaction rate material, writing EYD that was not quite right, and adding images that supported and explained the material.

2. Media Validation

Media expert validation was carried out by filling out a validation sheet consisting of 2 aspects: the aspect of the validity of the graphics and the part of the validity of the language contained in the 41 questions asked. The calculation includes two aspects, namely aspects of language validity and aspects of graphic validity. The validity of the data on the visual aspect is 90.1%, and the language aspect is 87.9%. Based on calculations on both aspects, the average percentage is 89% and is included in the outstanding category in terms of media in the developed reaction rate module. There are valid criteria to be tested with revisions, which means that there are several suggestions from the validator for improvements, including changing the cover according to the module title, spacing between lines, inaccurate writing such as module pages, and ineffective sentence affirmation integrated paragraphs.

3. Student Response Analysis

The results of student responses were obtained based on the calculation of the questionnaire distributed to students via Google Form. It determines the assessment students give to the module as an alternative learning resource. The analysis of student response questionnaires was carried out using five indicators, namely the use of modules (PGM), module presentation (PYM), interest in modules (MTM), multiple representations (MR), and science in the Qur'an (SDA). The

percentage of module usage indicators is 82.4%, module presentation is 82.1%, interest in modules is 84.6%, multiple representations is 80.2%, and religious character integration is 88.2%. Based on the percentages of these indicators, the average percentage of characters for the chemistry learning module integrated with religious symbols in the reaction rate material is 83.5%, which is very good.

4. Module Feasibility Analysis

This module was analyzed to determine the feasibility of the developed module based on student response analysis and validation sheets. The feasibility test on the module made is based on the student response analysis and validation sheet results. Based on the results of the analysis of student responses, the validation results in terms of material and media are included in the very feasible category, which refers to the assessment criteria for the reaction rate module with a percentage of 87.6% in terms of material and 89% in terms of media and student responses get a share of 83.5% fall into the very decent category. The two analyses conclude that the chemical learning module of the integrated reaction rate material of religious character class XI SMA is very suitable for students at MAN 4 Jombang.

Conclusion

The validity of the integrated chemistry learning module on religious characters in class XI SMA material on reaction rates shows an outstanding category with an average character percentage of 87.6% in terms of material and 89% in terms of media based on the results of validation by three validators.

An excellent response to the module product testing with a character percentage of 83.5% for class XI students at MAN 4 Jombang so that the module can be used as alternative teaching materials for students. The feasibility of the module shows a very feasible category based on the results of student responses and expert validation so that students can use this learning module at MAN 4 Jombang.

It is necessary to develop modules integrated with Islamic values in other chemical materials to improve students' spiritual attitude with new knowledge that the Qur'an is closely related to science, especially chemistry.

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