Development of an e-module in the form of a flipbook on integrated Islamic circulatory system material for grade XI SMA/MA

Pengembangan e-module berbentuk flipbook materi sistem peredaran darah terintegrasi Keislaman kelas XI SMA/MA

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Abstract
Islamic-integrated learning has been carried out in several subjects in Madrasahs, but students still need encouragement to live it. Islamic-integrated teaching materials are required to facilitate solving these problems. This research was conducted because of the need for teaching material to be able to help students in the learning process either independently at home or guided by educators at school, so this study aims to describe the validity and response of educators and students to products in the form of e-modules in the form of flipbook material developed for an integrated Islamic circulatory system. The method used in this research is research and development (R&D) using the ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation). The subjects of this study were expert/expert validators, educators, and students. The data collection technique used was a questionnaire given to experts/experts to find out the validity of the product, and a response questionnaire was given to educators and students to find out the response to the product being developed. The results of this study indicate that the product validity of experts, namely material experts, obtained a percentage of 89.25% with very valid criteria, media experts obtained a percentage of 96.75% with very valid criteria, and interpreters obtained a percentage of 78.62%. The results of the teacher’s response were 92.25% with very good criteria, and student responses received a percentage of 79.75% with good criteria. Based on these results, the e-module in the form of a flipbook on Islamic integrated blood circulation system material can be stated to be very valid and good for use in school learning.

Keywords: development; e-module; flipbook; circulatory system; integrated Islamic

INTRODUCTION

Education is an effort to gain knowledge formally through schools and informally from the environment (Elfachmi, 2016). Education plays an important role in improving and developing the quality of human resources (Wijayanti & Ghofur, 2021). The ability and superiority of human resources are very important as a solution to facing the nation's challenges. Especially in the current era of the Industrial Revolution 4.0, which is marked by the existence of a cyber-physical system supported by advances in technology, databases, knowledge, innovation, and networks that reflect the growth of the creative century. Quality education is needed (Aini & Kurniawan, 2022).

Quality education must at least pay attention to three main aspects: educational, curricular, and learning (Al-Tabany, 2014). These three aspects have a significant influence on the implementation of education. The independent curriculum is the first step of the Ministry of Education and Culture’s policy in improving the national education system (Ariga, 2020). The independent curriculum is expected to contribute to students' development according to their potential and abilities because they get critical, quality, expressive, applicative, varied, and progressive learning (Rahayu et al., 2022). The current problem is the readiness of educators to adapt to an independent curriculum oriented towards students' creative products, one of which is the lack of teaching materials used in the learning process.

Based on the results of field observations and direct interviews with Biology subject educators MA Darul Ulum Palangka Raya, some information data and factual problems were found. First, the teaching materials used by educators in the learning process were printed, such as textbooks and student worksheets (LKS). Second, the teaching materials used in the learning process tend to be monotonous, making some students feel bored and become less active in the learning process. Third, in the learning process, educators verbally convey Islamic values or integrate the Qur'an and hadith with the material being taught. However, they do not yet have teaching materials in which the material is integrated with Islam. This is because there are no indicators related to Islamic integration in the syllabus and lesson plans used so far. Connecting Islamic knowledge in the form of the Qur'an and hadith is necessary for all the material taught in schools.

Teaching materials whose material is integrated with Islam are teaching materials that contain material combined with verses from the Qur'an and hadith. According to Ersa (2021), the integration in question is a blend of learning material with relevant verses of the Koran and hadith and divine values that imply the idea of integrating these values. Faith and holiness in school education appear not as a discourse to achieve academic excellence but as a necessity to be implemented as guidelines in education. Learning by using the values of the Koran is expected to be more real and meaningful as a form of reinforcement. According to Safitri et al. (2020), Islamic values in Madrasahs have been integrated into several Islamic Religious Education subjects, but students still need encouragement to live up to these Islamic values.

Fourth, educators say that students still experience difficulties in some biology subject matter, especially in the circulatory system material. This material is considered difficult because it is abstract for students, so they have difficulty understanding concepts, especially in the anatomy and mechanism of the circulatory system.

This was reinforced by the existence of a needs analysis questionnaire that had been distributed to 30 students majoring in Science at MA Darul Ulum Palangka Raya. The results of the needs analysis questionnaire obtained that as many as 80% stated that they did not understand the material being taught using previous teaching materials. 73% of students indicated that they liked non-printed teaching materials. 56% of students stated that the teaching materials used by educators were mediocre, and 46% said that it was difficult to understand. As many as 90% of students indicated that teaching materials were needed in which the material was integrated with Islam. In addition, as many as 70% of students noted that the circulatory system material is one of the materials that is difficult to understand. This is partly due to the limited teaching materials that make it difficult for students to understand the material.

Based on the data and problems above, this illustrates a need for innovation in teaching materials that students can use independently in non-printed or electronic form and are interesting and easy to understand. One of the teaching materials that can be developed is an e-module in the form of a flipbook. According to Amanullah (2020), learning using flipbooks will make the learning process more varied and interesting from a visual and audio-visual perspective. So that with this variation, the learning process will
become more communicative, interactive, support, and attract students' understanding of the material that has been delivered.

This research on developing an e-module in the form of an integrated Islamic flipbook is similar to previous research by Larasati et al. (2020) entitled "Development of an Integrated E-Module of Islamic Values in Respiratory System Material," the purpose of which is to develop and see the validity of teaching materials in the form of e-modules that integrate Islamic values. Research by Rifa'i (2022) entitled "Development of Mobile Learning E-Books on Islamic Integrated Human Circulatory System Material for Grade VIII Students of SMP/MTs" aims to describe the results of the validity and response of the mobile learning e-book on system material Islamically integrated human blood circulation for class VIII students of SMP/MTs. Research by Putri et al. (2022) entitled "Development of Flip Pdf Professional Electronic Module Learning Media (E-Module) on Material of the Human Circulatory System for Class XI SMA" aims to produce valid and practical electronic module (e-module) learning media. As well as the research conducted by Ersa (2021) entitled "Development of an Integrated Biology E-Module of Al-Qur'an Values in the Material of the Human Circulatory System for Class XI Students of SMA/MA Pekanbaru City," which aims to develop a biology e-module integrated enrichment of Al-Qur'an values on the subject matter of the human circulatory system for class XI high school students.

The development of an e-module in the form of a flipbook on integrated Islamic circulatory system material for class XI SMA/MA is expected to provide convenience to students in understanding and studying the material being taught either with the guidance of educators or studying independently on circulatory system material which is abstract and can be used as a reference for educational teaching materials in the learning process.

The developed e-module is also equipped with Islamic integration to add insight and understanding of students in science related to or combined with the Al-Qur'an and hadith. According to Aminatun (2023), teaching materials in e-modules combined with Islamic values are rare; so far, they are still limited to general knowledge. Islamic integrated learning is combined with Islamic matters relating to moral and behavioral achievements that aim to develop the full potential of each student, not only intellectually intelligent but also emotionally and spiritually intelligent.

The circulatory system material was chosen because, based on the needs analysis results, it was found that as many as 70% of students did not understand the material, and it was also one of the most difficult materials to understand. The circulatory system is included in knowledge whose characteristics are procedural, conceptual, and abstract because information cannot be perceived or described in real terms. Conceptually, this means understanding how certain discussion topics are structured and arranged to relate to a more structured form. At the same time, procedural understanding refers to how to carry out a task and is associated with a series that must be followed and followed.

The process of learning biology on the circulatory system material is very complex. Students tend to experience difficulties in understanding how the organs in the body work together in the blood circulation process, which are interconnected (Khairaty et al., 2018). This is due to the inability of students to describe and analyze material on the circulatory system, which involves oxygen, the function of the lungs, blood vessels, and circulation. The circulatory system material is related to abstract concepts, or the quantity is not directly observed and is quite difficult to understand. This can be the cause of students experiencing difficulties in understanding circulatory system material (Musliadi, 2017).

The purpose of this study was to determine the validity and response to the developed e-module, based on expert validation, as well as the response of educators and students to the e-module in the form of flipbook material on the Islamic integrated circulatory system for class XI SMA/MA. With the development of the e-module, it is hoped that it can become a reference or teaching medium for educators in the learning process and make it easier for students to understand the material, especially in abstract circulatory system material. In addition, with the existence of Islamic integration, it is hoped that this e-module can indirectly shape students' akhlakul karimah and religious attitudes.

RESEARCH METHOD
This study uses Research and Development (R&D) research and development using the ADDIE Model development design, which consists of five stages, namely (1) analysis by conducting needs analysis and
curriculum analysis; (2) design by designing materials, designs and instruments to be used in research; (3) development, by developing products and validating them by six validators namely material, media and interpretation experts; (4) implementation, by testing the product on a small scale test; and (5) evaluation, by evaluating the use of the e-module. Development research was carried out at MA Darul Ulum Palangka Raya. This development research lasted for two months, from February to April. The subjects in this study were six expert/expert validators, namely two material validators, two media validators, two interpretation validators, and one biology subject educator at MA Darul Ulum Palangka Raya. The subjects of this research trial were ten students of class XI IPA MA Darul Ulum Palangka Raya.

Product validity data was collected through an instrument sheet in the form of a validation questionnaire for material experts, media experts, and interpreters consisting of 4 alternative assessment scores, namely 4 (very valid), 3 (valid), 2 (valid enough), and 1 (less valid). Product response data were collected through instrument sheets in the form of questionnaires on the responses of educators and students to the products developed, which consisted of 4 alternative assessment scores, namely 4 (very good), 3 (good), 2 (good enough), and 1 (not good). The data that has been collected is then processed using percentages based on Formula 1.

\[
\text{Percentage} = \frac{\text{Overall average}}{\text{Maximum score}} \times 100\% \quad \text{Formula 1}
\]

The percentage results obtained will be interpreted as a statement following the assessment criteria to determine the validity of the e-module being developed. The assessment criteria can be seen in Table 1. At the same time, the percentage results obtained from the teacher and student response questionnaires were determined based on the response assessment criteria in the form of statements regarding the developed e-module, which can be seen in Table 2.

### Table 1 Product Validity Assessment Criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Percentage (%)</th>
<th>Score Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>25.00% - 43.75%</td>
<td>Less Valid</td>
</tr>
<tr>
<td>2.</td>
<td>43.76% - 62.50%</td>
<td>Valid Enough</td>
</tr>
<tr>
<td>3.</td>
<td>62.51% - 81.25%</td>
<td>Valid</td>
</tr>
<tr>
<td>4.</td>
<td>81.26%-100.00%</td>
<td>Very Valid</td>
</tr>
</tbody>
</table>

(Source: Jaiz et al., 2022)

### Table 2 Criteria for Educator and Student Response Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Percentage (%)</th>
<th>Score Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>25.00% - 43.75%</td>
<td>Not Good</td>
</tr>
<tr>
<td>2.</td>
<td>43.76% - 62.50%</td>
<td>Good Enough</td>
</tr>
<tr>
<td>3.</td>
<td>62.51% - 81.25%</td>
<td>Good</td>
</tr>
<tr>
<td>4.</td>
<td>81.26%-100.00%</td>
<td>Very Good</td>
</tr>
</tbody>
</table>

(Source: Jaiz et al., 2022)

**RESULTS AND DISCUSSION**

The results of the research on developing an e-module in the form of a flipbook on Islamic integrated circulatory system material for class XI SMA/MA have obtained data with two valid and good indicators. Description of the results will be presented successively according to the development design steps.

1. **Product Validity**

   The validity of the product in the form of an e-module is seen from the results of the validation of the material expert, media expert validation, and interpretation expert validation.

   a. **Material Expert Validation**

   The results of this material expert validation were obtained from a questionnaire filled in by two validators who had an understanding and knowledge of circulatory system material. Validation was carried out in two stages, which obtained several improvements and were revised according to input, recommendations, and suggestions from the validator.
Table 3 Average Material Expert Validation Results Phase I and Phase II

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Phase I Validator</th>
<th>Phase II Validator</th>
<th>Total</th>
<th>Average</th>
<th>Percentage</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitability of the material with basic competence (KD)</td>
<td>8</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>43</td>
<td>3.58</td>
</tr>
<tr>
<td>Material accuracy</td>
<td>9</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>43</td>
<td>3.58</td>
</tr>
<tr>
<td>Material update</td>
<td>8</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>42</td>
<td>3.5</td>
</tr>
<tr>
<td>Linguistic aspect</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>47</td>
<td>3.92</td>
</tr>
<tr>
<td>Presentation aspect</td>
<td>9</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>42</td>
<td>3.5</td>
</tr>
<tr>
<td>Encourage curiosity</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>26</td>
<td>3.25</td>
</tr>
<tr>
<td>Total score</td>
<td>51</td>
<td>65</td>
<td>59</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum score</td>
<td>68</td>
<td>68</td>
<td>68</td>
<td>68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>3.41</td>
<td>3.82</td>
<td>3.47</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>85.25%</td>
<td>93.25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall percentage</td>
<td>89.25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criteria</td>
<td>Very Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows that the results of the material expert’s validation of the product in the form of an e-module that was developed were in stage I and stage II, namely 85.25% with the criteria of "very valid" and 93.25% with the criteria of "very valid" so that an average of the average percentage of 89.25% with the criteria of "very valid."

In line with research conducted earlier by Rahmaniyyah (2022) with the title "Development of E-Modules Based on Scientific Literacy and Islamic Values in Ecosystem Material Class X IPA Level MA," this obtained material expert validation results with an average percentage score of 81% with the criteria very valid. Muszalifa’s research (2023), entitled "Development of Islamic Integrated Chemistry Electronic Modules (E-Modules) in Molecular Form Material for MA/SMA," the results of material validation with an average percentage score of 91.9% with very valid criteria. This is also in line with previous research conducted by Dismarianti et al. (2020) with the title "Development of Electronic Module-Based Biology Learning Media (E-Module) in Material Structure and Function of Class VIII Plants SMP/MTS" obtained material validation results with an average percentage score of 92% with very valid criteria.

The results of the material expert validation in stages I and II obtained percentages based on each aspect, namely aspects of the suitability of the material with basic competencies (KD), accuracy of the material, material updating, language, presentation, and encouraging curiosity. This linguistic aspect obtains a percentage of 97.94% with very decent criteria consisting of 3 assessment indicators. This aspect is the highest aspect of the other six aspects. This is because the sentence structure, spelling, and use of terms that describe a concept are good and correct, following Indonesian grammar rules and enhanced spelling guidelines. According to Daryanto (2013), the linguistic aspects that are said to be good are due to the presentation of the material in the sentences used, which have appropriate sentence structures, are precise and easy to understand.

Meanwhile, encouraging curiosity is the aspect with the lowest percentage of the other six aspects, namely 81.25% with valid criteria. This is because there are deficiencies, namely minimal or lack of descriptions, exercises, assignments, or case examples presented in the e-module to encourage students’ curiosity. According to Sulistiyowati (2012), interest in the learning process can be seen from high curiosity so that the knowledge gained develops and increases in gathering information. However, these deficiencies have been corrected based on comments, suggestions, and input from the material expert validator so that the developed e-module can be used in the learning process.

b. Media Expert Validation

The results of this media expert validation were obtained from a questionnaire filled out by two validators who had an understanding and knowledge of the field of instructional media. Validation was carried out in two stages, which obtained several improvements and were revised according to input, recommendations, and suggestions from the validator.
Table 4 Average Results of Media Expert Validation Phase I and Phase II

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Total</th>
<th>Average</th>
<th>Percentage</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Validator</td>
<td>Validator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-module size</td>
<td>8</td>
<td>8</td>
<td>32</td>
<td>4</td>
<td>100%</td>
<td>Very Valid</td>
</tr>
<tr>
<td>E-module cover design</td>
<td>27</td>
<td>24</td>
<td>107</td>
<td>3.82</td>
<td>95.56%</td>
<td>Very Valid</td>
</tr>
<tr>
<td>E-module content design</td>
<td>66</td>
<td>62</td>
<td>264</td>
<td>3.88</td>
<td>97.06%</td>
<td>Very Valid</td>
</tr>
<tr>
<td>Total score</td>
<td>101</td>
<td>94</td>
<td>104</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum score</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>3.88</td>
<td>3.61</td>
<td>4</td>
<td>4</td>
<td>3.74</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows the media validation experts results for products in stage I is 93.5% with the criteria of "very valid" and stage II is 100% with the criteria of "very valid," so that an average percentage of 96.75% with the criteria of "very valid." In line with previous research conducted by Rohmah (2022) with the title "Development of E-Modules Based on Scientific Literacy and Islamic Values in Ecosystem Material Class X IPA Level MA," this obtained media validation results with an average percentage score of 95% with very valid criteria. This is also in line with previous research conducted by Dismarianti et al. (2020) with the title "Development of Electronic Module-Based Biology Learning Media (E-Module) on the Material of Structure and Function of Plants Class VIII SMP/MTS" obtained media validation results with an average percentage score of 99% with very valid criteria. This is also in line with previous research conducted by Prastowo (2015) with the title "Development of Islamic Integrated Chemistry Electronic Modules (E-Modules) in Molecular Form Material for MA/SMA," the results of media validation of the product in the form of an e-module developed obtained a percentage score of 86.8% with very valid criteria.

The results of media expert validation in stages I and II obtained percentages based on each aspect according to the BNSP standard (2014). Three aspects were assessed: e-module size, e-module cover design, and e-module content design. This aspect of the size of the e-module obtains a percentage of 100% with very valid criteria consisting of 2 assessment indicators. This aspect is the highest aspect of the other three aspects. This e-module content design aspect obtained a percentage of 97.06% with very valid criteria consisting of 17 assessment indicators.

Meanwhile, the cover aspect of the e-module (cover) has the lowest percentage of the other three aspects, namely 95.56%, with very valid criteria consisting of 7 assessment indicators. This result is because there are still deficiencies in several ways. However, these deficiencies have been corrected based on comments, suggestions, input from the interpreter validator so that the e-module that has been developed can be used in the learning process. Budiono & Susanto (2006) stated that modules with less varied design activities confuse students. Therefore, so they are not boring, modules must be packed with interesting activities. According to Prastowo (2015), it is necessary to pay attention to the design format to obtain a good module design. The intended design format includes writing style, layout, and design characteristics tailored to the reader's needs. Prastowo (2015) also stated that a good module design is a design that makes it easier for students to understand the contents of the module, for example, by varying the physical appearance with illustrations, attractive but legible font types, and systematic module arrangements while taking into account consistency.

c. Interpretation (Tafsir) Expert Validation

The results of the validation of this interpreter were obtained from a questionnaire that had been filled in by two validators who had understanding and knowledge in the field of interpretation. Validation was carried out in two stages, which obtained several improvements and were revised according to input, recommendations, and suggestions from the validator.
Table 5 Average Results of Interpretation Expert Validation Phase I and Phase II

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Total</th>
<th>Average</th>
<th>Percentage</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The suitability of the material with the argument (dalil)</td>
<td>4 6 8 8</td>
<td>5 5 7 8</td>
<td>26 41 12 12</td>
<td>3.25 3.42</td>
<td>81.25% 85.5%</td>
<td>Valid Very Valid</td>
</tr>
<tr>
<td>Conformity of integration with the argument (dalil)</td>
<td>5 5 7 8</td>
<td>5 5 7 8</td>
<td>25 40 12 12</td>
<td>3.12 3.42</td>
<td>78% 85.5%</td>
<td>Valid Valid</td>
</tr>
<tr>
<td>Accuracy of writing verses or hadith</td>
<td>8 9 12 12</td>
<td>5 5 6 6</td>
<td>41 21 6 6</td>
<td>4.2 2.62</td>
<td>65.62% 65.62%</td>
<td>Valid Valid</td>
</tr>
<tr>
<td>The accuracy of writing the interpretation of the verse</td>
<td>4 5 6 6</td>
<td>4 5 6 6</td>
<td>21 41 6 6</td>
<td>2.62 2.62</td>
<td>65.62% 65.62%</td>
<td>Valid Valid</td>
</tr>
<tr>
<td>Consistency of letters in verses</td>
<td>4 6 8 8</td>
<td>4 6 8 8</td>
<td>26 41 12 12</td>
<td>3.25 3.25</td>
<td>81.25% 81.25%</td>
<td>Valid Valid</td>
</tr>
<tr>
<td>The benefits of the argument (dalil)</td>
<td>2 3 4 3</td>
<td>2 3 4 3</td>
<td>12 7 4 4</td>
<td>3 3</td>
<td>75% 75%</td>
<td>Valid Valid</td>
</tr>
<tr>
<td>Total score</td>
<td>27 34 45 45</td>
<td>48 48 48 48</td>
<td></td>
<td>2.83 3.75</td>
<td>93.75%</td>
<td></td>
</tr>
<tr>
<td>Maximum score</td>
<td>48 48 48 48</td>
<td>48 48 48 48</td>
<td></td>
<td>3.75</td>
<td>93.75%</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>2.25 2.83 3.75 3.75</td>
<td></td>
<td></td>
<td>2.62 2.83</td>
<td>93.75%</td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td>63.5%</td>
<td>63.5%</td>
<td></td>
<td>3.75</td>
<td>93.75%</td>
<td></td>
</tr>
<tr>
<td>Overall percentage</td>
<td>78.75%</td>
<td>78.75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criteria</td>
<td>Valid</td>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows that the results of the validation of interpreters for products in the form of e-modules in stage I and stage II are 63.5% with the criteria of "proper" and 93.75% with the criteria of "very valid," so that an average percentage of 78 is obtained .75% with the criteria of "decent." In line with previous research conducted by Rohmah (2022) with the title "In line with previous research conducted by Rohmah (2022) with the title "Problem-Based Learning (PBL)-Based E-Module Development and Integrated Islamic Values in Human Respiratory System Material," this obtained an average percentage score of interpretation expert validation of 76.7% with valid criteria. Research by Julianti (2022) with the title "Development of an Integrated Biology E-Module on Al-Qur’an Values in Biodiversity Material for High School/MA Class X Students in Bengkalis City," the results of validating this interpretation obtained an average score of 100 % with very valid criteria. This is also in line with previous research by Triyeni (2021) with the title "Development of Biology E-Module Integrated Enrichment of Al-Qur’an Values in the Main Material of the Digestive System for Class XI Students in Pekanbaru City High School in the 2019/2020 Academic Year" which obtained the average percentage score on the validation of interpreters is 87.5% with very valid criteria.

The results of the validation of the interpreters in stages I and II obtained percentages based on each aspect, namely the aspect of suitability of the material with the arguments, the usefulness of integration with the arguments, the accuracy of writing the verse or hadith, the accuracy of writing the interpretation of the verse, the consistency of the letters in the verse and the usefulness of the argument. This aspect of the accuracy of writing verses or hadiths obtains a percentage of 85.5% with very appropriate criteria consisting of 3 assessment indicators. This aspect is the highest aspect of the other six aspects. This is because 1) the contents of the verse or hadith listed following the source; 2) font type, size, and spacing in writing Al-Qur’an or hadith verses; 3) the contents of the translation of the verses of the Qur’an or hadith are correct and following the source. Meanwhile, the aspect of the accuracy of writing the interpretation of verses is the aspect with the lowest percentage of the other six aspects, namely 65.62% with proper criteria. This is because there are deficiencies, namely, the contents of the interpretation of the verses of the Qur’an and hadith are still lacking or not following the source. However, these deficiencies have been corrected based on the interpreter validator’s comments, suggestions, and input. According to Wathoni (2018), integrating Islam into the module to be developed is new in research and development because of the urgency of the foundation of divine consciousness that accompanies the study process. The existence of a foundation of divine consciousness makes students who study not only knowledgeable but also become moral and civilized individuals. Apart from that, according to him, the integration of Islam in learning makes it easier for students to acquire the competence of their spiritual attitude.
2. Educator and Student Response
   
a. Educator Response
   The results of the educator's response were obtained from a questionnaire that had been filled out by one biology educator/teacher. This response has received several improvements and has been revised according to educators' input, recommendations, and suggestions.

   Table 6 Data on the Results of Educators' Responses to Products

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Total</th>
<th>Average</th>
<th>Percentage</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>20</td>
<td>4</td>
<td>100%</td>
<td>Very Good</td>
</tr>
<tr>
<td>Material</td>
<td>15</td>
<td>3,75</td>
<td>93,75%</td>
<td>Very Good</td>
</tr>
<tr>
<td>Language</td>
<td>13</td>
<td>3,25</td>
<td>81,25%</td>
<td>Good</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Table 6 shows that the results of educators' responses to products in e-modules obtained a percentage of 92.25% with the "very valid" criteria. This is in line with research conducted by previous researchers by Oktavia (2022) entitled "Development of Web-Based Indonesian E-Modules at SMK Negeri 2 Wajo." The results of educators' responses to products in the form of e-modules that were developed obtained a percentage score of 92.30%, with very practical criteria. Research by Hervi & Ristiono (2021) entitled "Electronic Module (E-Modul) Science with Emotional Spiritual Quotient (ESQ) Nuances on the Material of the Reproductive System in Humans," the results of the educator's response to the product in the form of an e-module that was developed obtained a percentage score of 95, 83% with very practical criteria. Research by Aminatun (2021) entitled "Development of Video-Based Islamic Integrated E-Modules to Improve Students' Mathematical Communication Skills in Class VII MTS Comparative Materials," the results of educators' responses to the product in the form of an e-module developed obtained a percentage score of 85.5% with very practical criteria. Based on these percentages, it can be concluded that the developed e-module does not need further revision and is ready to be tested.

   The results of the respondents obtained percentages based on each aspect, namely aspects of interest, material aspects, and language aspects. This aspect of interest is the highest aspect of the other two aspects. According to Budiono & Susanto (2006), modules with less varied activity designs tend to make students bored. Therefore, so they are not boring, modules must be packed with interesting activities. At the same time, the aspect of language is the aspect with the lowest percentage of the other two aspects. This is because there are deficiencies such as letters, paragraphs, and sentences, and the language is difficult to read and understand. Hence, this makes the material quite difficult to understand. According to Hernawan et al. (2012), the language used in writing e-modules must be good and correct, easy to digest and read, interesting and stimulate curiosity, logical order of presentation, and greetings using your words. However, these deficiencies have been corrected based on comments, suggestions, and input for the perfection of the e-module being developed.

b. Student Response
   The results of student responses were obtained from a questionnaire filled in by ten students. This response received several improvements and was revised according to students' input, recommendations, and suggestions.

   Table 7 shows that the results of students' responses to products in e-modules obtained a percentage of 79.75% with the "decent" criteria. This is in line with research conducted by Muszalifa (2023) entitled "Development of Islamic Integrated Chemistry Electronic Modules (E-Modules) in Molecular Form Material for MA/SMA." The results of educators' responses to products in the form of e-modules developed obtained a percentage score of 90.5% with very good criteria. Research by Ersa (2021) entitled "Development of an Integrated Biology E-Module of Al-Qur'an Values in the Material of the Human Circulatory System for Class XI SMA/MA Pekanbaru City Students," the results of students' responses to the
e-module developed obtained a percentage score of 92.06% with very good criteria. As well as research by Aminatun (2021) entitled "Development of Video-Based Islamic Integrated E-Modules to Improve Students' Mathematical Communication Skills in Class VII MTS Comparative Materials." The results of the educator's response to the product in an e-module developed obtained a percentage score of 74% with practical criteria. Based on these percentages, it can be concluded that overall, the results of the student response questionnaire from small groups met the practical criteria for the developed e-module.

Table 7 Data on Student Response Results to Products

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Total</th>
<th>Average</th>
<th>Percentage</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>162</td>
<td>3.24</td>
<td>81%</td>
<td>Good</td>
</tr>
<tr>
<td>Material</td>
<td>95</td>
<td>3.17</td>
<td>79.25%</td>
<td>Good</td>
</tr>
<tr>
<td>Language</td>
<td>94</td>
<td>3.13</td>
<td>78.25%</td>
<td>Good</td>
</tr>
<tr>
<td>Total</td>
<td>351</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>79.75%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
<td>Good</td>
</tr>
</tbody>
</table>

Student response results were percentages based on each aspect, namely aspects of interest, material aspects, and language aspects. The interest aspect, which consists of 5 assessment indicators, obtains a percentage of 81% with good criteria. The material aspect, which consists of 3 assessment indicators, receives a percentage of 79.25% with good criteria. The language aspect, which consists of 3 assessment indicators, obtains 78.25% with good criteria.

This aspect of interest is the highest aspect of the other two aspects. This is because the appearance of the e-module being developed is interesting and fun and increases the willingness to learn. Some illustrations can provide innovation for learning the material. Language is the aspect with the lowest percentage of the other two aspects. This is because there are deficiencies such as letters, paragraphs, and sentences, and the language is difficult to read and understand. Hence, this makes the material quite difficult to understand. However, these deficiencies have been corrected based on comments, suggestions, and input for the perfection of the e-module being developed. According to Edris (2018), language aspects include 1) using good and correct Indonesian, 2) the language used in the module must be easy to understand, interesting, straightforward, and following students' language abilities, 3) using language that can increase the maturity and development of participants students 4) sentence structure according to students' reasoning abilities.

CONCLUSION

The conclusion drawn from this research is the production of a product in the form of an e-module in the form of a flipbook of integrated Islamic circulatory system material for class XI SMA/MA that is valid and good for use in the learning process. The results of the product validity test in the form of an e-module were carried out by expert validators/experts in material, media, and interpretation. Data validation results based on the average overall aspect score by material experts/experts obtained an average percentage of 89.25% with very valid criteria, media validation received an average percentage of 96.75% with very valid criteria, and expert validation results /expert interpretation obtained an average percentage of 78.62% with proper criteria. The results of the responses of educators and students to the product in the form of an e-module were developed by one educator and ten students. The teacher's response data obtained an average percentage of 92.25% with very good criteria, and student response data received an average percentage of 79.75% with good criteria.

REFERENCES


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