



DEVELOPMENT AND VALIDATION LEARNING MATERIALS OF WAVES CONTAINS HOLY AL-QURAN VALUES

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Abstract

The research aims to develop learning materials. In addition, the research also tested the validation of physics materials learning using holy Al-Quran. The preparation of learning materials contains holy Quran values become very important to use when learning school. Learning materials that have been fitted Al-Quran values can help improve the insights of science as well as add value to the spiritual attitude of learners. Learning materials are also expected to invite learners to more easily understand a material through contemplation. For example, by incorporating the results of the interpretation of some verses of the Qur'an to wave material class 11. Research on learning materials contains holy Al-Quran values using the approach to research and development. Further learning materials are validated by experts in their field to be used as guidelines revision of materials. Expert lecturers and practitioners considered viable materials used as learning materials categorized very well with the value > 3.00 . In addition, the materials also received excellent response 87.5% of the learners.

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INTRODUCTION

The 21st century is the era of globalization or the open era that gave rise to many fundamental changes compared to the previous century. Changes that occur according to Fadel and Triling (2009), among others, in the field of technology, transportation, economics, resource management, as well as changes in the trend of job-based industry that used to be knowledge-based. The changes certainly have an effect on the culture and education so that required a thought which can produce good quality output (Tilaar, 1998) to the current society can live and work in a time of knowledge especially for field Education (Triling and Hood, 1999). Article 1 Act No. 20 Year 2003 of the national education system mention that sense education is planned and conscious effort to bring about an atmosphere of learning and the learning process so that learners actively develop the potential for him to have a religious spiritual strength, self-control, personality, intelligence, morals, as well as the necessary skills themselves, the community, the nation and the State. So in the process of education, at least there should be teachers, students, educational purposes, materials, media education, and evaluation (Twyman and Heward, 2016).

According to Prastowo (2012) materials is one of the ingredients of learning resources that can be used to help the teacher or instructor in carrying out the learning process in the classroom. Another explanation States that the materials can be used to implement the goals of learning standards, students, and teachers (Singer & Tuomi, 1999).

In order for materials which are created according to the needs thus need to understand some of the rules that should be observed in developing learning materials, among other things:

- a) learning materials should be adapted to the conditions of the learner while carrying out the learning process
- b) learning materials are expected to be able to change the behaviour of learners
- c) the development of learning materials tailored to the needs and characteristics of the self
- d) learning materials include objectives specific learning activities
- e) learning materials contains a good learning material in the form of activity or exercise with detailed
- f) learning materials include part of evaluation as a tool to measure the success of the learning learners (Jasmadi & Widodo, 2008).

Ministry of national education year 2008 considers vital to the existence of learning materials for learners because materials related to the availability of materials in accordance with the demands of the curriculum, the characteristics of the target, as well as the demands of the problem

learn. According to Ballstaedt (1994), the print materials arranged in Nice has several advantages, such as print materials easier to use because it can be moved freely, a good learning materials can motivate readers to do activities such as marking, noting, even sketching.

A school requires students to study the Quran to be able to understand the interpretation contained in the Quran can use value-laden materials of the Glorious Quran. So that learners can make the Quran as a foundation in learning and understanding the matter waves.

Learners are able to digest the material by wave analysis of events that exist because the search of knowledge through sight, hearing, and contemplation. Then the students are expected to develop metacognitive knowledge and spiritual attitude competence.

METHODS

This research uses research methods development or Research and Development (R&D) which is a research method to produce a specific product as well as test the effectiveness of products with quantitative analysis. As for the development of the following procedure:

1. Define stage (Definition)
Stage Define aims to establish and define the needs in the learning process.
2. Design stage (Design)
The purpose of this stage is to prepare a prototype learning materials.
3. Develop Stage (Development)
This stage aims to produce learning materials material values-laden waves Alquran revised based on comments, suggestions, and the assessment of expert lecturers, physics teacher, field test, and the operational field test.
- a. Validation by material expert lecturer and physics teacher

- Materials matter waves of Quranic values-laden stage of a Design before use must go through a validation phase which aims to improve initial design (draft I). Validation is performed by expert lecturers material and media. Validation was done by expert lecturer Lecturer postgraduate UNY. Validation technique i.e. by administering the now that after the revised draft II resulted in accordance with comments, suggestions, and judgments given by a validator has been validated by expert lecturers. Further validation by 2 HIGH SCHOOL physics teacher to produce draft III.
- b. Limited field test

Limited field trials carried out by learners a number of 30 persons. The results on this test will be used as input, corrections, and improvements to the learning materials against material values-laden waves Qur'an compiled

on draft III at once knowing the response of students to produce a draft of the IV to be used on trial field operations.

c. Operational field test

This test is carried out using sheets of observation and student response results with question form in a given class.

RESULTS AND DISCUSSION

1. Learning materials

The development of learning materials can help learners explore the material by wave analysis and contemplation towards events because essentially, seek knowledge through sight, hearing, and contemplation.

Materials compiled by entering values in the appropriate verses of the Glorious Quran. Component in the learning materials include: cover, preface, table of contents, usage instructions, concept maps, summary content, an example of a matter, a matter of practice, and answer keys for the teacher.

2. Learning materials validation

After successfully developing learning materials, learning materials validation needs to be done. An early form of learning materials that have been developed are then discussed with the media and material expert lecturers to produce draft materials II. At this stage, that note is the content materials and procedures for writing materials. Observations the contents of learning materials based on material with the appropriate theory concept, whereas the use of the procedures for writing materials tailored to the Permendikbud the number 50 year 2015 by using plain language and easy to understand. Further materials are validated by two physics teachers. As for

suggestions and corrections provided by expert lecturers and physics teachers is:

- a) Some rubric assessment sheet should more clearly so that the validator does not suffer confusion.
- b) Need to examine and correct writing, language, and substance.

Assessment of the draft assessment sheet using products that have been validated. Assessment results data is quantitative data and qualitative data (quality categories).

Table 1. The average results of assessment materials

No	Aspects	Average Score	Category
1	Content eligibility	3.75	Very good
2	Presentation of material	3.50	Very good
3	Language	3.87	Very good
4	Graphics	3.50	Very good
Final average		3.65	Very good

Based on the assessment by the expert lecturers and physics teachers, developed learning materials obtained a final average score 3.65 and included within the category of very good.

In addition to giving a score ratings, expert lecturers and teachers also give final conclusions towards learning materials that is decent is used with the corresponding revision suggestions.

Materials that have been assessed and revised later tested to 30 high school students of Class XI SCIENCE in the classroom. This trial aims to get the data, comments, and suggestions by users of learning materials developed. The data obtained through students response questionnaire toward learning materials.

Table 2. Validity and Reliability Learner Response Questionnaire

No	Infit t	Interpretation	Outfit t	Interpretation	Reliability of estimate
1	-2.0	Fit	-1.4	Escape	0.74 (Reliable)
2	-1.1	Fit	-0.9	Escape	
3	-0.9	Fit	-0.7	Escape	
4	0.7	Fit	0.3	Escape	
5	1.1	Fit	0.7	Escape	
6	1.2	Fit	0.6	Escape	
7	1.2	Fit	0.8	Escape	
8	-0.1	Fit	-0.4	Escape	
9	1.5	Fit	0.7	Escape	
10	0.3	Fit	0.1	Escape	

Validity and reliability details of the statement is analyzed using the program Quest first. Further analyzing the valid data response percentage of learners to know response learners towards learning materials. Students response

category there are 4 kinds that is very good, good, less good, and not good.

Table 3. The Result of Student Response

Response category	The number of students	Percentage (%)
Very good	8	27
Good	19	63
Less good	3	10
Not good	0	0

Based on table 3, learning materials got more good response by learners. These results are supported by the following learners statement:

- 1) The content of learning materials is interesting because it can combine the material physics with verses of the Glorious Quran.
- 2) Learning materials can be an inspiration to improve the spiritual attitude.
- 3) Understanding materials is still a bit difficult because of the unfamiliar with the process of meditating on the events in everyday life and is associated with the verses of the Glorious Quran.

In addition, the advice given by some learners towards learning materials developed are:

- 1) More watches preparation of a sentence on the learning materials so that is easy to understand.
- 2) Need to be added to the appropriate illustrations and pictures so interesting learning materials.
- 3) Add an example of the advantages and disadvantages of the wave.

Response or advice given the learners towards learning materials consulted with supervising lecturer for repair materials that will be used in field trials.

The finished materials revision tested again on a different class. Operational field tests conducted at 32 learners class XI IPA. The results of the student response for learning materials that are valid and reliability from a limited trial results previously obtained through the questionnaire.

The results of the student responses also supported by comments and suggestions written in question form, among others:

1. The material presented in easy to understand materials due to explain physics

concepts according to the events in everyday life..

2. On materials there are examples of reserved along with a way of working on making it easier for learners practise the exercise problem.
3. Should explain the interpretation of the Quran which is connected with the events in detail.

Comments and suggestions the learners on field trials next consulted with the supervising lecturer. Then can be used to improve the final results of the learning materials.

Table 4. The Result of Student Response at Operational field tests

Response category	The number of students	Percentage(%)
Very good	28	87.50
Good	4	12.50
Less good	0	0.00
Not good	0	0.00

The final product in the form of materials that have been developed through the three stages of revision is ready to be used in the learning process. the first revision was carried out on the basis of the inputs provided and then supervising lecturers assessed by expert lecturers and practitioners. The second revision was carried out on the basis of the findings obtained, observation, and learner response. Last revision on the basis of the results of the field trials.

Expert lecturers and practitioners provide a conclusion that learning materials developed feasibility. The statement demonstrated through results that indicate the quality of the materials is very good. The results of the students response in the limited trials showed results similar to the assessment by the expert lecturers and practitioners. 63% of students rate good. The results of the assessments change as field tested. Learners assess learning materials very well a number of 87.50%. The difference in response learners due to limited test time, the product was only rated by expert lecturers and practitioners, while on field trials of the product has responded to complaints by learners to repaired.

CONCLUSION

Based on the results of the discussion above, it can be concluded: based on the results of the assessment conducted by the expert lecturers and practitioners, learning materials deemed worthy to use. The statement supported by the value of the materials > 3.00 enters the category of very good; based on the results of the assessment conducted trials on learners, learning materials deemed worthy because it gets good response by 63% of the learners; the results of the assessment of learners on field trials most large very good category with percentage 87.5%.

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