ISSN: 2502-2318 (Online)
ISSN: 2443-2911 (Print)
Omega : Jurnal Fisika dan Pendidikan Fisika
Vol **6**, No **1** (2020)

Homepage : https://journal.uhamka.ac.id/index.php/omega

Development of Learning Media in the Form of Value-Based Physics Pocket Book

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ABSTRACT

The aim of this study. Developing learning media in the form of value-based physics pocketbooks in business and energy material, and knowing students' responses to the feasibility of learning media in the form of value-based Physics Pocket Books on Energy and Business material for grade X high school. The method used is Research and Development (R&D) concerning the steps of the ADDIE development model. The developed Pocket Book is on business and energy materials. The validation trial was conducted in two stages. The first stage was conducted at SMA Muhammadiyah 4 Jakarta, SMA Muhammadiyah 23 Jakarta, and SMA 51 Jakarta with 45 respondents, and the second stage was conducted at Muhammadiyah 4 Jakarta SMA Muhammadiyah 23 Jakarta SMA and SMAN 51 Jakarta with the number of respondents 254 class X students. The results of the first stage of the assessment are the validation test of media experts 82.6% (very good), the validation test of material experts 70.7% (good), the validation test by Islamic Religious Education teachers 81.3% (Very good), the media feasibility test small group 80.42% (good). The results of the second stage of assessment are the 87.8% media expert feasibility test (Very Good), 73.5% (good) material expert validation test, 84% validation test by Islamic Religious Teachers (very good), and the large group media feasibility test 84% (very good) good). So, thus the interpretation of learning media that has been developed is a very good category and deserves to be used as learning media in the form of Value-based physics Pocket Book.

Keywords: Learning Media, Pocket Book, Values

INTRODUCTION

Education is a major asset in the development of a nation. As stated in the Education System Law number 20 of 2003 namely, conscious and planned efforts to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual strength, control self, personality, intelligence, noble character, and the skills needed by himself and society [1].

Allah SWT in Surah An-Nahl verse 44, that is:

بِٱلۡبَيِّنَٰتِ وَٱلزُّبُرِۗ وَأَنزَلۡنَآ إِلَيۡكَ ٱلذِّكۡرَ لِتُبَيِّنَ لِلنَّاسِ مَا نُزِّلَ إِلَيۡهِمۡ وَلَعَلَّهُمۡ يَتَفَكَّرُونَ

Meaning: "... We send down to you the Qur'an, so that you explain to humanity what has been revealed to them and so that they think".

Likewise in the case of the application of instructional media, educators must pay attention to the development of the religious soul of students, because this factor is precisely the target of learning media. Without paying attention to and understanding the mental development of students or the level of thinking of students, teachers will be difficult to expect to achieve success. As the word of Allah SWT in Surah An-Nahl verse 125 :

ٱدۡعُ إِلَىٰ سَبِيلِ رَبِّكَ بِٱلۡحِكۡمَةِ وَٱلۡمَوۡعِظَةِ ٱلۡحَسَنَةِۖ وَجَٰدِلۡهُم بِٱلَّتِي هِيَ أَحۡسَنُۚ إِنَّ رَبَّكَ هُوَ أَعۡلَمُ بِمَن ضَلَّ عَن سَبِيلِهِۦ وَهُوَ أَعۡلَمُ بِٱلۡمُهۡتَدِينَ

Meaning: "Call on (the people) your Lord's

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Vol **6**, No **1** (2020)

way with wisdom and good lessons and refute them in a good way ..."[2].

In the learning process, there have been several shifts from conventional methods using whiteboards to being an innovative method that uses a variety of sophisticated and modern learning media. The existence of various kinds of learning media is expected to be able to create an effective and efficient learning process so that it can realize the predetermined educational goals. The existence of facilities and infrastructure in each school also greatly affects the achievement of optimal learning, because it supports the ongoing learning process. Learning Media is a means that must be used by educators in the learning process because it will support the regularity of teaching and learning activities.

Based on preliminary studies that have been done 95.5% in the learning process using media, about 4.5% do not use media. in the learning process, Approximately 64.8% use the package of media books, then 34.1% use the media Student Worksheet, and as much as 1.1% use the pocketbook media in the learning process. The response of students with the existence of physics-based Pocket Book media gives responses about 80.7% agree with the existence of learning media in the form of value-based physics pocketbooks, then around 18.2% Strongly agree with the existence of pocketbook media. With the PocketBook media, it was found that 77.3% were motivated by the existence of a physics pocketbook media, 17% were highly motivated by the existence of a physics pocketbook media that could motivate learning interest, and 4.5%. So, based on the results of the preliminary study needed the development of instructional media in the form of Value-based physics Pocket Book.

The selection of learning resources and facilitation of students that are appropriate and appropriate will achieve learning objectives and will impact on the success of an educator in the teaching process, teachers as educators must be careful, creative in selecting and compiling teaching materials that will be provided to students, teaching materials must interesting, and make students motivated to read books and learn of their own volition. Teaching materials or materials that consist of knowledge, skills, and attitudes that learners learn to achieve learning objectives.

Science is a conscious effort to investigate, discover, and remember human understanding from these aspects is limited to produce definitive formulations. Science provides certainty by limiting the scope of his views. Allah has indirectly indicated that the Qur'an is a source of knowledge. Therefore, teaching materials that can provide meaningful learning and provide knowledge, teaching materials in the form of Pocket Book (mini-books) that make alternatives that are used to support fluency and facilitate the learning process in the classroom (formal) and outside the classroom (formal-informal).

PocketBook (mini book) is a print media that is small so that it can be carried everywhere and makes it easy for the carrier because it can be carried everywhere. This Pocket Book contains business material and energy supplemented with the verses of the Holy Qur'an. Designed in such a way with variations of images, letters, colors that make students motivated to read Pocket Book.

The physics Pocket Book Media that was developed was small, that is, the size of A6, which was easy to carry wherever either outside of the classroom (informal) or at school (formal), containing 100 pages containing text, interesting pictures and verses of the Holy Qur'an. on business material and energy. This research is intended to develop a value-based physics Pocket Book media. Thus, the use of instructional media in the form of value-based Pocket Books is expected to help provide a treasure of knowledge, from the background problems above the authors conducted a study entitled "Development of Learning Media in the Form of Value-Based Physics Pocket Books"

Gagne *et al*., states that the media or mediator is regulating effective relations between the two

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ISSN: 2443-2911 (Print)
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main parties in the learning process of students and the content of the lesson [3]. In the opinion of Gagne et al, the media are mediators to regulate the effective relationship between educators and students in conveying learning content.

Duffy and Roehler argued that Learning is an effort that intentionally involves and uses professional knowledge possessed by teachers to achieve curriculum goals [4]. In the opinion of Duffy and Roehler, it can be concluded that learning is an effort that involves educators and students to achieve curriculum goals in the teaching and learning process.

Hamalik said that learning media are tools, methods, and techniques used to make communication and interaction more effective between educators and students in the learning process at school [4]. Based on the opinion of learning media hamalik is a tool, method, and technique for communicating and interacting with educators with students in the learning process at school.

Media is one of the factors that support the success of the learning process at school because it can help the process of delivering information from the teacher to students or vice versa. The creative use of media can facilitate and improve learning efficiency so that learning objectives can be achieved [5].

Arsyad said that learning media can arouse interest in motivation, desires, and stimuli in learning activities, even able to influence psychologically on students, in the process of learning the existence of books is very important [6].

Mutmainah, Daningsih, & Marlina, Pocketbook is one tool that can be used in the learning process [7]. According to the Expert Opinion stated that a pocketbook is a tool in the learning process, a pocketbook can also facilitate the user because it has a small size. understand the core of the learning process

Ami and Susantini said that pocketbooks are small books that are easy to carry and can be put in a pocket [8]. In the opinion of Ami and Susanti, they say that the pocketbook has a small size so that it is easy to carry and can be put in a pocket. According to Setyono et al. A pocketbook is a small book containing information that can be stored in a pocket so that it can make it easier for students to study under any circumstances [9].

Sutrisno states that Physics studies the structure of matter and its interactions to understand natural systems and artificial systems or technology [10]. In Sutrisno's opinion it can be concluded that physics is a subject that studies the structure of matter and interactions to understand nature, and artificial systems, physics is a science that contains the basic laws that are the basis of natural phenomena or phenomena.

Mulyana stated that values are references and beliefs in determining choices. Value is something that is desired so that gave birth to action on someone [11]. According to Mulyana concluded that value is a goal and belief in determining choices. Therefore from our values, we can distinguish between good and bad choices. So that we know the limits of doing action on someone. Daroeso stated that Value contains hope or something that is desired by humans because it is normative value, is a necessity to realize the behavior of human life [12].

Darajat stated that Value is a set of beliefs or feelings that are believed to be an identity that gives a special pattern to the patterns of thought, feelings, relationships, and behavior. Value is a normative pattern, which determines the desired behavior for a system that is related to the surrounding environment without distinguishing the functions of the parts. Values are references and beliefs in determining choices. Values are empirical qualities that cannot be defined but can only be experienced and understood directly. And Value is abstract, ideal, not a concrete thing, not a fact, it is not just a matter of right and wrong that demands empirical evidence, but a matter of appreciation that is

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ISSN: 2443-2911 (Print)
Omega : Jurnal Fisika dan Pendidikan Fisika
Vol **6**, No **1** (2020)
Homepage : https://journal.uhamka.ac.id/index.php/omega

desired liked, and disliked [12].

RESEARCH METHODS

This type of research is research and development (Research and Development). The development model used is the ADDIE model, which stands for Analysis, Design, Development, Implementation, and Evaluation. The target of the use of learning media made for Class X SMA, research conducted at SMA 23 Muhammadiyah Jakarta, SMA 4 Muhammadiyah Jakarta, and SMAN 51 Jakarta, while the focus of the material is Business and Energy. The number of small-scale test respondents was 45 students and large-group tests were 254 students.

The procedure of the research phase is an analysis by gathering information, then analyzing the needs of students. The design phase is to create a value-based Physics PocketBook design, Business and Energy Compilation questions, and judgment on the Value-based Physics Pocket Book. Development Phase is the development of media, validation of material experts (Islamic religious teachers), physics material experts, and media experts. After being validated, a revision of I. The Implementation Stage will be carried out on a small scale field test and a large scale field test. After conducting a product field test in revision II. Evaluation Phase is the final stage of the value-based Physics Pocket Book media.

RESULT AND DISCUSSION

Based on research that has been done, the following results are obtained:

A. First Stage

1. Assessment Results by Media Experts

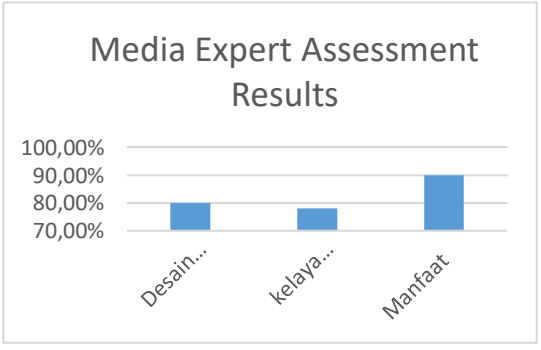

Figure 1. Media Expert Assessment Results

The results of the assessment of each aspect obtained by the percentage of learning design 80% obtained very good criteria, 78% of the feasibility aspects of the criteria obtained good criteria, and 90% of the benefits of the media aspect obtained very good criteria. Based on the average of the three aspects, at the first stage of media expert review was 82.6%

2. Results of Assessment by Material Experts

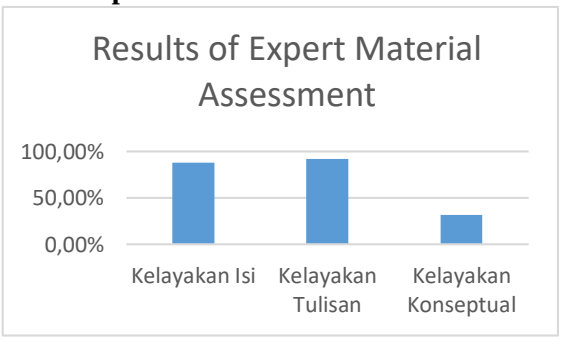

Figure 2. Results of Expert Material Assessment

Based on the diagram above it can be concluded that the assessment is given by the material experts on the content worthiness of 88% with very good criteria, the feasibility of writing obtained 92% with very good criteria, and the suitability of the concept 32% is less feasible. From the three aspects obtained an overall average of 70.7%

3. Hasil Kelayakan Media oleh Guru

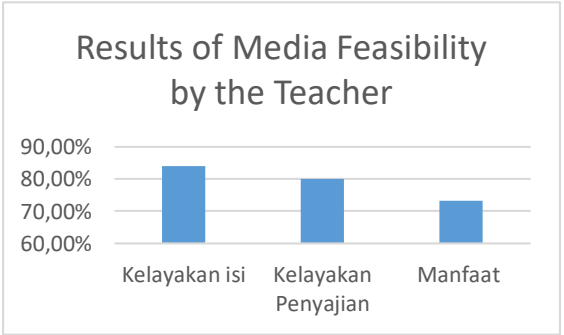

Figure 3. Results of Media Feasibility by the

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Teacher

Based on the diagram above, it can be concluded that the assessment given by material experts from Islamic Religious Education teachers found that the appropriateness of the contents or appropriateness of the verses of the Holy Qur'an obtained 84% percentage obtained very good criteria, the feasibility of presentation in the Pocket Book of physics get 80% with very good criteria, and 73.3% of the benefits of PocketBook media obtained enough criteria. The average obtained from three aspects 81.3%

B. Second Stage

1. Assessment Results by Media Experts

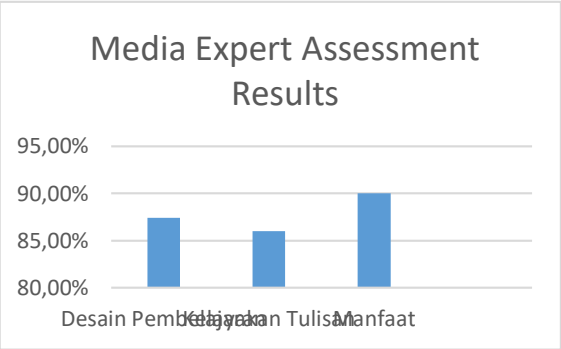

Figure 4. Media Expert Assessment Results

Based on the overall average results of each aspect for learning media in the form of Physics Pocket Book based on the value of the second stage of media expert study was 87.83%.

2. Results of Assessment by Material Experts

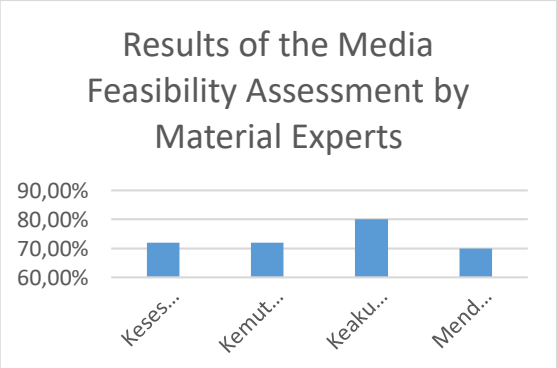

Figure 5. Results of the Media Feasibility Assessment by Material Experts

Based on the overall average results of each aspect for the assessment of PocketBook physics media based on the value of the second stage of material expert studies obtained by 73.5%.

3. Results of media assessment by Islamic Religious Education Teachers

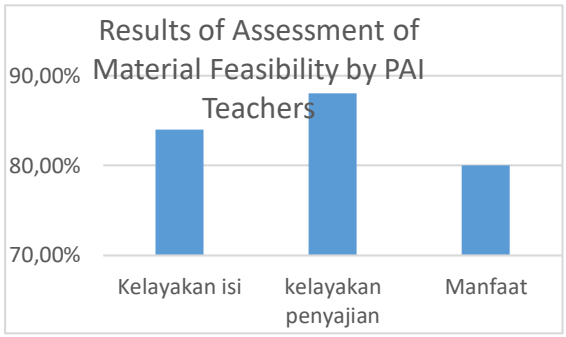

Figure 6. Results of Assessment of Material Feasibility by PAI Teachers

Based on the results of media assessments by Islamic religious education teachers, it was found that the feasibility of the content was 84%, the feasibility of the presentation was 88% and the usefulness was 80%. So it can be concluded that the media is feasible to use.

4. Small-Group Test

The trial was conducted by 45 students in three schools, namely SMAN 51 Jakarta, Muhammadiyah 23 Jakarta High School, and Muhammadiyah 4 Jakarta High School. Each school had 15 students.

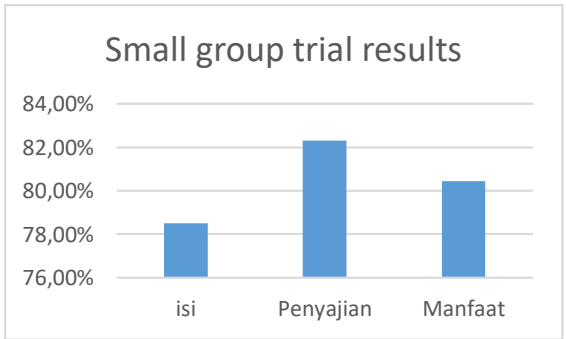

Figure 7. Small group trial results

ISSN: 2502-2318 (Online)
ISSN: 2443-2911 (Print)
Omega : Jurnal Fisika dan Pendidikan Fisika
Vol **6**, No **1** (2020)

Homepage : https://journal.uhamka.ac.id/index.php/omega

Based on the results of small group trials conducted by students obtained an assessment of three aspects illustrated in that the content aspect obtained a percentage of 78% (Good), musty Presentation 82.3% (Very Good), Benefit aspect 80.45% (Good). Based on the overall value of the three aspects obtained at 80.25%.

4. Large Group Test

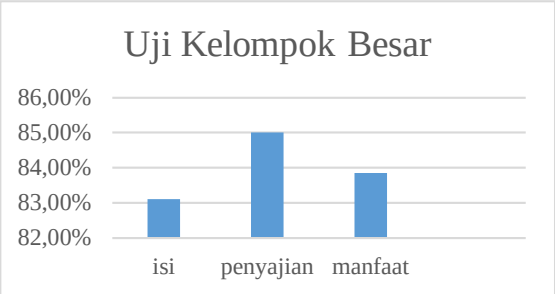

Figure 8. Test results of large groups

Based on the assessment of large group trials in three schools in East Jakarta. Trial of small groups and large groups have three aspects of assessment in the form of content aspects 83.1% obtained very good criteria, 85% presentation aspects obtained very good criteria, and 83.85% media benefits obtained very good criteria. Based on the three aspects obtained a percentage of 84%

ACKNOWLEDGEMENT

Learning media in the form of a Value-based Physics Pocket Book that was developed has very good criteria so that it is feasible and can be used as a learning medium in business and energy discussion for high school grade X.

The development of instructional media in the form of Value-based physics Pocket Book can provide treasures and knowledge regarding business and energy material, complete with verses of the Holy Qur'an. The development of this media can be used as a reference for teaching materials on business materials and energy for class X high school.

Suggestions for future researchers Physics Pocket Book Media needs to add physics and Islamic scientists as a refinement and refinement of Value-based Physics Pocket Book learning media, and Value-based physics PocketBook media are only limited in print media, it is recommended to develop in the form of e-books.

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ISSN: 2502-2318 (Online)
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