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Development of Scientific Based Interactive Learning Media With Lectora Inspire Substance Pressure Material

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Abstract
This research aims to develop scientific-based interactive science learning media with Lectora Inspire material on pressure of substances and its application and determine the perceptions of class VIII students at SMPN 11 Muaro Jambi towards the learning media developed. The test subjects in this research were class VIII students at SMPN 11 Muaro Jambi. The qualitative data analysis technique uses qualitative descriptive methods. The results of the research are in the form of scientific-based interactive science learning media with Lectora Inspire material on pressure of substances and its application for junior high school students. The final media product is in audio visual form in .exe format. This media contains material with text displays, images, animations, simulations and videos. This learning media is scientific-based so that every time the material is delivered it uses scientific learning steps. The advantage of this media is that how to operate this media is quite easy and simple. This media is classified as interactive because there is a reciprocal relationship between the user and the media and can be used offline. Obtaining expert assessments and student perceptions shows that this product is worthy of development.

Keywords: Interactive Learning; Lectora Inspire; Media Science; Scientific

INTRODUCTION

The curriculum is a tool to achieve educational goals, as well as a guideline in the implementation of education. The aim of national education, among other things, is to shape professional character and mental attitudes that are oriented towards a global mindset (Nugraheni, Mulyani, & Ariani, 2013). Therefore, the government always updates the curriculum to optimize the goals of national education. The 2013 curriculum learning applies a scientific approach to all subjects, including Integrated Science. This approach contains a series of data collection activities through observation or experimentation, processing information or data, analyzing, then making conclusions, therefore effective and efficient teaching materials are needed.

The Ministry of Education and Culture (2013) states, "In accordance with graduate competency standards and content standards, one of the learning principles used is the use of information and communication technology to increase the efficiency and effectiveness of learning." To be able to increase the effectiveness and efficiency of learning objectives, one of the efforts made is the use of information and communication technology in the learning media used (Rayandra, 2012).

The use of learning media in the learning process can arouse new desires and interests, generate

motivation and stimulation of learning activities, and even have psychological influences on students (Arsyad, 2011). Therefore, teachers need to prepare learning media that is suitable for use in order to effectively achieve learning objectives in the teaching and learning process (Anggereni & Khairurradzikin, 2016). The material on pressure of substances and its application is one of the science materials which combines the concepts of Biology and Physics, including the concepts of solid pressure, hydrostatic pressure, Pascal's law, Archimedes' law, diffusion, osmosis, blood pressure and capillarity of transport tissue in plants and their application in life. Everyday. This subject is considered difficult because it contains many abstract concepts. According to Sadiman (1986) the use of media in learning can provide an integral experience from a concrete concept to an abstract concept. So that when learning uses media, it will be easier for students to understand the lesson material. Learning media can visualize the phenomena to be observed so that students can be more active because they can communicate in two directions (Warsita, 2010).

At SMPN 11 Muaro Jambi, one of the computer-based learning media that the teacher has used is Microsoft PowerPoint. However, the PowerPoint used by teachers in the teaching process is less interesting and is an ordinary presentation medium, such as only displaying the text of learning material, and there is a lack of teacher variation in processing the content. This research aims to develop scientific-based science learning media using Lectora Inspire software because it is e-learning based software that can be used to develop interactive learning media. Lectora Inspire can be used for learning needs both online and offline and does not require understanding of sophisticated programming languages so it is easy to apply. Lectora Inspire as a learning media has complete features such as combining flash, combining images, inserting audio, recording video, screen capture facilities and actions to make the media interactive. Learning using learning media assisted by Lectora Inspire software is effective because it can improve student learning outcomes (Astutik & Rusimamto, 2016). The use of interactive media can increase students' CBC.

RESEARCH METHODS

In this research, the development research method was used, following cyclical steps in accordance with the development model used. The development model used by researchers is the ADDIE development model. The steps for developing learning media using the ADDIE model according to Branch (2009) are: analysis, design, development, implementation and evaluation.

At the product validation stage, the data obtained is qualitative data in the form of input, responses, criticism and expert advice in improving learning media and quantitative data in the form of scores obtained from material and media expert validation questionnaires. The questionnaire used is a closed questionnaire. According to Sugiyono (2013) closed questionnaires are questions or statements that already have alternative answers chosen by the respondent.

A closed questionnaire was given to the material expert team and the media expert team containing questions regarding the suitability of the learning media. Questionnaire given to material experts and media experts to determine the suitability of the product. Then, after receiving the results and suggestions for improvement from media experts and material experts, revisions were made. After the product has been revised, small group trials can then be carried out to determine student responses to the learning media being developed. The test subjects used consisted of 22 students of SMPN 11 Muaro Jambi Class VIII B.

Quantitative data analysis in quantitative research uses descriptive statistics. Calculation of quantitative data obtained and calculated by carrying out measurement scale tests. Quantitative data analysis was taken from media expert validation questionnaire scores, material expert validation questionnaires and student perception questionnaires obtained which were assessed using a Likert scale.

RESULTS AND DISCUSSION

The results of this development research are in the form of scientific-based interactive science learning media with Lectora Inspire on substance pressure material and its application for junior high school students, validity testing by media experts and material experts on the resulting learning media products and assessment of students' perceptions of the use of science interactive learning media. scientifically based with Lectora Inspire on substance pressure material. The results of the validity of media experts are shown in table 1.

Table 1. Results of Stage 2 Material Validation

No	Statement	Evaluation Validator 1	Evaluation Validator 2	Suggestion
1.	The learning objectives prepared are clear	1	4	Learning objectives must meet the ABCD elements
2.	The material on pressure of substances and its application has been prepared in accordance with the learning objectives	3	4	
3.	The learning media that has been prepared is relevant to the substance pressure material and its applications that students study	2	4	
4.	The content of material on pressure of substances and its application in learning media has correct and appropriate concepts	1	3	
5.	Learning media helps explain the concept of substance pressure material and its application	2	3	Re-understand the concepts of pressure
6.	The material presented is consistent with the syllabus	3	3	
7.	The example questions used are in accordance with the substance pressure material and its application	2	3	Plus providing various examples of questions
8.	The practice questions used are in accordance with the substance pressure material and its application	2	3	Plus providing practice questions
9.	Examples and practice questions in learning media can increase students' understanding of material pressure and its application. The availability of solving sample questions and practicing questions is good	2	3	Plus example questions and exercises for each sub-material
10.	The organization of evaluation questions is systematic	2	3	Giving answers after students answer questions
11.	The variety of practice questions is appropriate and varied	2	3	Give a deadline for work
12.	The suitability of images, animations and videos to explain the material is appropriate	2	3	Not yet varied
13.	The learning objectives prepared are clear	3	3	Consistency in the location of images, animations and text
14.	Organizing (images/animations/videos) is complete systematic	1	3	

15.	Animations, images and videos in learning media are easy to understand	3	3	
16.	The language and spelling used are in accordance with correct Indonesian language rules.	2	3	Double check the spelling of each word
17.	Correct sentence structure and use standard language	3	3	
	Total score	85		
	Average	42,5		
	Category	Good		

The results of the material expert validation are shown in table 2. After revisions were made to the validation stage I and stage II.

Table 2. Results of Stage 3 Material Validation

No	Statement	Validator Assessment		Suggestion
		1	2	
1	The colors used are attractive and appropriate	4		
2	The color consistency matches the appearance	4		
3	The font size is appropriate and easy to read	4		
4	The color consistency and type of letters are appropriate and easy to read	4		
5	There are instructions for use	4		
6	The language used is good and correct	4		
7	The display of images, animations and videos is interesting and is in accordance with the material on substance pressure and its application	3		
8	The quality of the images, animations and videos is clear	4		
9	Learning media can be started easily	4		
10	Teachers and students can operate learning media independently easily	4		
11	The appearance of the buttons on the learning media is correct and easy to use	3		
12	The regularity of the layout between material and other visual elements is correct and appropriate	3		
13	The supporting menu for learning media is complete	4		
14	The steps for scientific learning in learning media are clear	4		
15	There are questions that allow students to study independently	4		
	Total Score		57	
	Average		57	
	Category		Very Good	

After improvements and revisions were made by the researcher based on suggestions from the validator, at stage 3 the validator agreed with the learning material contained in the learning media and stated that this learning media was suitable for testing. Then a small group test was carried out on 22

students. The results of student perceptions are shown in table 3. The following is the revised media display.

Figure 1. Concept map

Figure 2. Observing and asking questions page

The results of the student perception questionnaire after using learning media are shown in table 3.

Table 3. Results of Student Perception Questionnaire

No	Statement	Skor
1.	The objectives of learning in media are clear	75
2.	Instructions for using learning media are clear and can help me use the media	78
3.	The material description is easy to understand	68
4.	The structure of the sentences and the language used are clear and easy to understand	78
5.	The type and size of the letters are clear and easy to read	76
6.	The appearance of the media (images, colors, graphics) is attractive	77
7.	The visual quality (images, animations and videos) in this media is good	75
8.	The usage menu buttons are clear	77
9.	The menu layout and visual elements (images, animations and videos) are orderly	78
10.	This learning media can be used as a learning resource for me	85
11.	The information in the media is clear and easy to understand	69
12.	Providing media gives me the opportunity to learn independently	79
13.	The presentation of substance pressure material and its application in simple and easy to understand media	67
14.	The images and animations are clear and make it easier to understand the substance pressure material and its application	75
15.	The use of videos in the media can make it easier for me to understand substance pressure material and its application	75
16	The stages of the learning process in the media are clear and understandable	73
17.	The examples given can improve my understanding of material pressure and its applications	78
18.	The questions presented vary according to the material	77
19.	Providing questions can help understand the material on pressure and its applications	76
20.	Learning media can help me more easily learn material about pressure and its application	81
	Total score	1517
	Average	68,955
	Category	Good

The product resulting from this research is a scientific-based interactive learning media using Lectora Inspire software. The media that has been developed has several advantages, namely the way to operate this media is sufficient easy and simple because it is equipped with user instructions. This learning media has a scientific basis and is classified as interactive because there is a reciprocal relationship between the user and the media so that teachers can also use it as a teaching material in class. Each sub-material contains a simulation that can train students' thinking skills. With this learning media, teachers can easily explain the material to students and can display pictures, animations, simulations and videos which can help explain the material and attract more students' attention in the learning process. The results of this research are in accordance with several other supporting research results which proves that simulations in learning media are very supportive in the process of understanding the material. This learning media can be quite helpful in the learning process with a percentage of 67%. So it can be concluded that the scientific-based interactive science learning media product with Lectora Inspire material on pressure of substances and its application for junior high school students is valid and suitable for use.

CONCLUSION

Based on this research, a scientific-based interactive science learning media with Lectora Inspire material on pressure of substances and its application for junior high school students was produced that is valid and suitable for use. In the development process, the product is validated by a team of media and material experts using a validation questionnaire. From the results of material and media validation, an average of 64,000 and 57,000 products were categorized as very good, respectively. The average result of student perception data on learning media is 68.955 which is included in the very good category.

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REFERENCES

Arsyad, Azhar.2011. *Media Pembelajaran*. Jakarta: Raja Grafindo Persada.

Branch, Robert. 2009. *Instructional Design : The ADDIE Approach. Springer:* USA.

Kemendikbud, 2013. *Tentang pemanfaatan Teknologi Informasi dan Komunikasi*: Jakarta.

Nugraheni, D., Mulyani, S., & Ariani, S. R. D. (2013). Pengaruh pembelajaran bervisi dan pendekatan SETS terhadap prestasi belajar ditinjau dari kemampuan berfikir kritis siswa kelas X SMAN 2 sukoharjo pada materi minyak bumi tahun ajaran pembelajaran2011/2012. *Jurnal pendidikan kimia (JPK),* 3(2),20-35.

Rayandra, A. (2012). *Kreatif Mengembangkan Media Pembelajaran*. Jakarta: Referensi Jakarta.

Sadimanan, A.S. (1986). *Media Pendidikan, Pengertian, Pengemabngan, Dan Pemanfaatannya*. Jakarta:Rajawali

Samuel A. O., dkk. 2016. *Pembuatan Media Pembelajaran Gaya dan Tekanan Fisika untuk Siswa SMP Berbasis Flash*. Jakarta.

Sugiyono. 2013. *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta.

Warsita, B. 2010. *Teknologi Pembelajaran*. Jakarta: PT Asdi Mahasalya.