



JOURNAL OF SOCIETY INNOVATION AND DEVELOPMENT

The multidisciplinary journal of society for development

JSID

Supported by



JOURNAL OF SOCIETY INNOVATION AND DEVELOPMENT

The multidisciplinary journal of society for development

Journal homepage: <https://journal.institutre.org/index.php/jsid>



Development of Microsoft Powerpoint Learning Media on Chemical Bonding Material

Hamas Abthal^{1*}; Muammar Yulian²; Adean Mayasri³

^{1, 2, 3}Ar-Raniry State Islamic University

Abstract

This Research has been conducted to development of Microsoft Powerpoint media on chemical bonding material. Based on observations and interviews with high school IT students Alfityan Aceh Besar shows the use of instructional media on chemical bonding material is still not applied in learning students that cause difficulty understanding about abstract material. The purpose of this study was to determine the feasibility of learning media developed and determine students' responses to the development of Microsoft Powerpoint media on chemical bonding material. The design of this study is the design of Research and Development (R&D). The subjects of this study were 13 high school IT students Alfityan Aceh Besar. Data collection techniques using validation and questionnaires. Validation and response data were analyzed using quantitative descriptive techniques. The percentage of validation results obtained by the media expert validator was 77.9% and the percentage of material expert validators was 92.2%. So, the Microsoft Powerpoint learning media is categorized as suitable for use in chemical bonding material. The results of student responses to the Microsoft Powerpoint learning media that is 94.9% of students responded with very good criteria for the development of Microsoft Powerpoint media on chemical bonding material.

Keyword: Microsoft Powerpoint; Learning; Media; Student Responses; Eligibility; Chemical

* Corresponding author, email: hamas02029703@gmail.com

Received 24 Juny 2023; Received in revised form 20 July 2023; Accepted 02 January 2024; Available online 12 January 2024

<https://doi.org/10.63924/jsid.v5i2.41>

© The Authors

Published by Journal of Society Innovation and Development. This is an open access article under the CC BY-SA 4.0 license (<https://creativecommons.org/licenses/by-sa/4.0/>).



INTRODUCTION

SMA IT Alfityan is one of the high schools that has implemented the 2013 curriculum since the 2013-2014 school year. Based on the observation of the availability of learning media, this school is quite adequate but the utilization of ICT and media used by chemistry teachers in every lesson is generally still lacking. This means that teachers already have modern technology such as infocus and computers, but there are still those who use classical learning, such as the lecture method. Therefore, modern learning media innovations are needed and are able to make students learn actively and interactively. Judging from the learning process, students at SMA IT Alfityan Aceh Besar have learned to use infocus by using Microsoft Powerpoint as a learning medium in chemistry subjects such as the development of atomic theory and the basic particles that make up the atom. Not all chemistry subject matter has Microsoft Powerpoint learning media such as chemical bonding material. Based on the exposure of the problems above, the researcher aims to develop Microsoft Powerpoint Learning media on chemical bonding material that is feasible to use at SMA IT Alfityan Aceh Besar.

Robert Hanick defines the media as something that carries information between the source (source) and the receiver (receiver) of information. Still in the same angle, Kemp and Dayton argued, the role of media in the communication process as a transfer tool that transmits messages from the sender (sender) to the recipient of messages or information (receiver) (Benni Agus Pribadi, 1996).

Learning media can also be interpreted as anything that can be used to channel messages, stimulate thoughts, feelings, attention, and willingness of students so as to encourage the learning process. Forms of media can be used to enhance the learning experience to be more concrete (Zainal Aqib, 2006).

Learning is a set of actions designed to support the learning process of students by calculating extreme events that play a role in the series of intrem events experienced by students, Winkel defines learning as the arrangement and creation of extreme conditions in such a way. So that it supports the student learning process and does not hinder it (Eveline Siregar and Nara, 2010).

Most elements in nature have a tendency to interact (bind) with other elements. This is done because the element wants to achieve stability. Interactions that occur between elements are caused by ionic bonds, covalent bonds (single, double, and triple), coordination covalent bonds and metal bonds (Khamidinal, 2009).

METHOD

The method used in this research is the research and development method (Research and Development). This Microsoft Powerpoint learning media development model uses research and development steps proposed by Borg and Gall (Emzir, 2011).

Research instruments in the form of questionnaires and validation sheets are used to make measurements with the aim of producing accurate quantitative data, each instrument must have a scale. So, the researcher uses a Likert scale, Likert Scale is used to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena. According to Sugiyono, a research instrument is a measuring instrument used to measure

natural and social phenomena that are observed and specifically these phenomena are referred to as research variables (Sugiyono, 2009).

The data obtained from this research is quantitative descriptive data. Quantitative data obtained from the assessment of Microsoft Powerpoint learning media by experts who show the validity of the learning media produced, student responses that show the interest of Microsoft Powerpoint learning media. Data analysis techniques were carried out using quantitative descriptive analysis techniques. Quantitative data in the form of numbers from calculations or measurements can be processed by summing, comparing with the expected number and obtaining a percentage. With the following formula:

$$\text{Percentage of eligibility (\%)} = \frac{\text{Observed score}}{\text{Applied score}} \times 100 \%$$

Percentage searches are intended to determine the status of something that is percentageized and presented as a percentage anyway.

Table 1. Expert validation eligibility criteria

Percentage	Interpretation
76-100 %	Very feasible
56-75 %	Worth
40-55 %	Simply
0-39 %	Less feasible

(Source: Arikunto, 1993)

The eligibility value for *Microsoft Powerpoint* learning media products on chemical bonding material is set at a minimum eligibility criterion of Good Enough. In the student response questionnaire, the criteria for the level of achievement and quality of feasibility are used as follows.

Table 2: Criteria for Achievement Level and Quality of Feasibility

Percentage	Qualification Criteria	Description
81 - 100%	Very good	Very good, no need to revise

61 - 80%	Good	Feasible does not need to be revised
41 - 60%	Good enough	Not suitable, needs revision
21 - 40%	Less Good	Not feasible, needs revision
<20%	Very Poor	Very inappropriate, needs revision

(Source: Arikunto, 2008)

FINDING AND DISCUSSION

Planning begins with determining the subject matter that follows the K13 curriculum. The subject matter includes (1) Stable Electron Structure (2) Lewis theory of chemical bonds (3) Ion bonds and covalent bonds (4) Polar covalent compounds and nonpolar covalent compounds (5) Molecular shapes (6) Metal Bonds (7) Interactions between particles.

Initial product development of learning media on Chemical Bonding material at SMA IT alfitayan with development through the following steps. (1) Make a media chart (2) Collect supporting materials (3) make a *Story Board* (4) Entering the material into the computer using the *Microsoft Powerpoint* program based on the *Flowchart view* and *story board* and (5) testing the program modularly to ensure that the product is as desired.

The results of the development of learning media for Chemical Bonding material obtained data, namely (1) Material expert review evaluation data consisting of validation results, analysis results and revisions from material experts. (2) Media expert review evaluation data consisting of validation results, analysis results and revision results from media experts. (3) Evaluation data of limited use responses in small groups, namely data on the results of analysis and revision results.

Revision activities are carried out after validation of the resulting product. Based on the evaluation results, revisions were made in accordance with the suggestions given by the validators. The first validator is a validator of chemical bonding material and the second validator is a validator of learning media. Both validators are lecturers at UIN Ar-Raniry from different departments.

a. Material expert validation

Material expert validation was carried out by UIN Ar-Raniry lecturers from the Faculty of Tarbiyah and Keguruan, Department of Information Technology Education totaling 1 person, the number of questions was 16 items and the highest score of each question was 4.

Table 3. Material Expert Validation

No.	Statement	Assessment score
	Material quality aspects	
	Suitability of the material with the basic competencies to be achieved	
1	The suitability of size recording material with the basic competencies to be achieved	3
2	The suitability of the tolerance listing material with	3

	basic competencies that will be achieved	
--	--	--

3	The suitability of symbol recording material with the basic competencies to be achieved	3
4	The suitability of the material or material listing material with the basic competencies to be achieved	4
	II. Relevance of material to objectives	
5	Relavance of size inclusion material to learning objectives.	4
6	Relevance of tolerance inclusion material to learning objectives.	3
7	Relavance of symbol inclusion material to learning objectives.	4
8	Relevance of material inclusion to learning objectives.	4
	III. Relevance of material to student conditions	
9	Relevance of size inclusion material to student conditions	4
10	Relevance of tolerance inclusion material to student conditions	3
11	Relevance of symbol inclusion material to student conditions	4
12	Relevance of material inclusion material to student conditions	4
	IV. Aspects of Material Usefulness	
	I. Facilitate teaching and learning activities	
13	Ease of material to understand	4
14	The material provides additional knowledge for students	4
15	Materials make it easier for students to learn	4
	II. Provide student learning focus	
16	The material presented makes students listen well.	4
Total Score		59

b. Media Expert Validation

Media expert validation was carried out by UIN Ar-Raniry lecturers from the Faculty of Tarbiyah and Keguruan, Department of Information Technology Education totaling 1 person, the number of questions was 26 items and the highest score of each question was 4.

Table 4. Media Expert Validation

No.	Statement	Assessment score
-----	-----------	------------------

	I. Display aspect of Microsoft PowerPoint learning media	
1.	Appropriateness of text font with <i>background</i> color	4

	which is used.	
2.	The harmony of the letter color with the <i>background</i> color used.	4
3.	Appropriateness of <i>font size</i> to the length of the sentence.	3
4.	Clarity of form or type.	4
5.	The accuracy of the font size used in the intro.	3
6.	Appropriateness of <i>the font face</i> used.	3
7.	The correct use of capital letters.	2
8.	The appropriateness of the images displayed.	4
9.	The suitability of the images displayed with the material presented.	4
10.	Images can support the learning process.	4
11.	The suitability of the size of the image used with the size of the media.	3
	II. Aspects of Language Use	
12.	The words and terms used are consistent.	4
13.	Line spacing, paragraphs used in each sentence are consistent.	2
14.	The organization of the sentences in each paragraph.	2
	II. Provide student learning focus	
15.	The font shape and size used in each chapter heading is consistent.	3
16.	The font shape and size used in each chapter are consistent.	3
	III. Layout aspect	
17.	The quality of the color blend on each <i>slide</i> .	4
18.	The quality of the <i>layout</i> of each slide.	2
19.	<i>Button</i> placement accuracy.	2

20.	Consistency of button location.	2
IV. Organizing aspect		
21.	Appropriateness of material placement.	3
22.	Display quality of the material section.	4
23.	Clarity of material display	4
24.	Ease of operation from chapter to sub-chapter.	3
25.	Clarity of display of titles for each chapter and sub-chapter	3
26.	Ease of selecting the study menu	2

c. Student Response Questionnaire

Student responses were carried out by students at Alfityan IT High School totaling 13 people, the number of questions was 9 items and the highest score of each question was 4. The scale used is the Likert scale Strongly Agree (SS), Agree (S), Disagree (TS), Strongly Disagree (STS). Based on these options, students have the right to choose what response is given to *Microsoft Powerpoint* learning media.

Table 5. Processing of Student Response Data

No.	Statement	Number of Student Responses				Total percentage			
		SS	S	TS	STS	SS	S	TS	STS
1	The use of Microsoft Powerpoint media in learning is very interesting.	8	5	0	0	61,5	38,5	0	0
2	I like learning Chemical Bonding material by using Microsoft Powerpoint because there are pictures and images in it. attractive animation.	6	7	0	0	46,2	53,8	0	0

3	Microsoft Powerpoint that is displayed is able to make me understand about learning Chemical Bonds.	7	6	0	0	53,8	46,2	0	0
4	Using Microsoft Powerpoint media really helped me in the learning process and learning became more fun.	8	5	0	0	61,5	38,5	0	0
5	Learning by using media	6	5	2	0	46,2	38,5	15,3	0

	Microsoft Powerpoint does not make me bored in learning.								
6	Material that presented in Microsoft Powerpoint media makes me feel more comfortable easy to solve the problems given by the teacher.	3	10	0	0	23,1	76,9	0	0
7	I feel motivated to learn with there is Microsoft Powerpoint media.	5	6	2	0	38,5	46,2	15,3	0
8	I became more active in the learning process on Chemical Bonding material by using Microsoft media. Powerpoint.	4	7	2	0	30,9	53,8	15,3	0

9	I like learning by using Microsoft Powerpoint media.	7	6	0	0	53,8	46,2	0	0
Number (%)						415,5	438,6	45,9	0
SS Percentage						46,2 %			
Percentage S						48,7 %			
TS Percentage						5,1 %			
Percentage STS						0%			

d. Data Processing

1. Data Processing Material expert validation

Percentage of feasibility (%) = $59 \times 100 \%$

Percentage of feasibility (%) = 92.2%

2. Media Expert Validation Data Processing

Percentage (%) = $81 \times 100 \%$

Percentage (%) = 77.9%

3. Student Response Data Processing

Percentage of Strongly Agree (%) = **411^{5,55}**

Percentage Strongly Agree (%) = 46.2%

Percentage Agree (%) = **438,6**

Percentage Agree (%) = 48.7%

Percentage Disagree (%) = **45,9**

Percentage Disagree (%) = 5.1%

Percentage Disagree (%) = **0**

Percentage Strongly Disagree (%) = 0%

The results of validation data processing obtained percentages from both validators with very feasible criteria.

Table 6: Validation Result Data

No.	Validator	Percentage (%)	Criteria
-----	-----------	----------------	----------

1.	Material Expert	92,2%	Very Feasible
2.	Media Expert	77,9%	Very Feasible

The following is the percentage of each student's response to the media
Microsoft Powerpoint.

Table 7. Data on Student Response Results

Scale Item	Percentage
SS Percentage	46,2%
Percentage S	48,7%
TS Percentage	5,1%
Percentage STS	0%

CONCLUSION

Based on data analysis and research results on the development of Microsoft Powerpoint learning media on chemical bonding material at SMA IT Alfityan Aceh Besar, researchers can conclude that Microsoft Powerpoint learning media on chemical bonding material is declared very feasible to use in learning activities. The percentage of validation results obtained from material expert validators is 92.2% and the percentage of media expert validators is 77.9% with a percentage of 77.9%. very feasible criteria. The results of student responses to the use of Microsoft Powerpoint learning media on chemical bonding material at SMA IT Alfityan Aceh Besar in general can be concluded that 94.9% of students responded with very good criteria to the development of Microsoft Powerpoint learning media on chemical bonding material. For future researchers, it is suggested that they can continue the research that has been done and can also develop Microsoft Powerpoint learning media on other chemical materials as a comparison with the results of this study. It is expected that teachers use Microsoft Powerpoint learning media as an innovation in teaching so that the depiction of abstract material can be more easily explained to students.

BIBLIOGRAPHY

- Agus, Benni Personal. (1996). Educational Media. Jakarta: Open University. Arikunto, Suharsimi. (1993). Research Procedures a Practical Approach. Jakarta: Publisher Rineka Cipta.
- Arikunto, Suharsimi. (2008). Research Procedures a Practical Approach. Jakarta: Rineka Karya Publisher.
- Aqib, Zainal. (2006). Professional Teachers in Learning. Surabaya: Insan Cendekia.

Eveline, Siregar and Nara. (2010). Learning and Learning Theory. Bogor: Galia Indonesia.

Emzir. (2011). Educational Research Methodology. Jakarta: Rajawali Press. Khamidinal. (2009). Chemistry SMA/MA Class X. Jakarta: Center for Bookkeeping.

Sugiyono. (2009). Business Research Methods (Qualitative, Quantitative and Business Research Approaches)

R&D). Bandung: Alfabeta.