Development of Interactive Powerpoint Media in the Educational Technology Course of the Islamic Religious Education Study Program

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Abstract. The main objective of this research is to produce interactive PowerPoint media packaged via CD, with a range from subject competency standards, basic competencies, learning materials to learning evaluations. Research has been carried out using the development research method with several steps taken, namely, literature studies, field studies on the form of the learning process, description and analysis of potential and problem findings, designing and compiling interactive PowerPoint tools, small group trials, product revisions, field trials, product revisions, and mass production. The research results obtained increased student competency after using this interactive PowerPoint media compared to before using the media, the learning material validation results obtained a score of 75%, learning design validation obtained a score of 75%, and learning media obtained validation a score of 75.125%. In the small group trial, the difference/difference in scores between the pretest and posttest was obtained by 18.33%. In the field trials, it was found that the average difference/difference in scores between the pretest and posttest was 1.275. This study concludes that the development of interactive PowerPoint media in educational technology courses can help students improve their competence in educational technology courses. And it is suggested for the users to understand well some of the instructions in using this interactive PowerPoint media, then the learning material and overall appearance can be further refined.

Keywords: Interactive PowerPoint, Educational Technology, Islamic Religious Education

1 Introduction

At Islamic Religious Universities, the Islamic Religious Education Study Program, Educational Technology is one of the courses, the presence of this course is expected to provide insight and understanding of educational technology as a concept, educational technology as theory and educational technology as an application in educational practice . Thus, a teaching staff at a university must be able to create ways for students to learn well, both in terms of their level of effectiveness, both in terms of the efficiency of the time required, and also the good learning outcomes achieved.

To achieve learning goals, of course there are many things that influence it, one of which is no less important in achieving learning goals is the creation of a learning process that is meaningful, effective, efficient and so on.

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Achieving learning objectives with good results is not easy, through this research, it is hoped that the development of interactive learning media will make the learning process easier and be able to obtain learning results in accordance with the learning objectives effectively and efficiently.

Advances in technological products provide potential for all of us to be utilized and exploited, by utilizing technological products they will have added value in the learning process. The ability to utilize technological products is always expected, among technological products in the world of education the emphasis is on the use of multimedia technology products, one of which is interactive technology that is able to meet learning needs. By using interactive educational multimedia, it is also hoped that it will be able to create an effective and efficient learning process in achieving learning goals.

Toni Downes has conducted research on computer use at home in Australia, there is a clear difference that children who are rich in technology in their homes have better skills compared to children who are poor in technology in their homes. [1]

This starts from the existing potential and the problems that must be faced, so one solution needs to be the development of interactive PowerPoint media in educational technology courses. With the development of interactive learning media, it is hoped that it will be able to increase students' understanding of the competencies that must be achieved.

Based on the description above, the author is interested in conducting intensive development research with the title "Development of Interactive PowerPoint Media in Educational Technology Subjects in the Undergraduate Islamic Religious Education Study Program (S1)". By conducting research or testing products developed by students of the Syekh Maulana Qori Bangko Islamic Institute, Merangin Regency, Jambi Province.

1.1 Formulation of the Problem

Based on the background of the problem above, the problem formulation can be put forward as "What kind of interactive PowerPoint media in educational technology courses is able to meet the needs of students in educational technology courses in the Islamic Religious Education Study Program". From this general problem formulation, a specific problem can be formulated, namely:

a. How to develop interactive PowerPoint media in the Educational Technology Course of the Islamic Religious Education Study Program?
b. Is the product developed effective as interactive PowerPoint media in the Educational Technology Course of the Islamic Religious Education Study Program at the Syekh Maulana Qori Bangko Islamic Institute?

1.2 Development Goals

The development of interactive PowerPoint media on educational technology aims to:

a. Knowing the development of interactive PowerPoint media in the Educational Technology Course of the Islamic Religious Education Study Program,
b. To find out the effectiveness of products developed as interactive PowerPoint media in the Educational Technology Course of the Islamic Religious Education Study Program at the Syekh Maulana Qori Bangko Institute of Islamic Religion.

2 Literature Review

2.1 Theoretical basis

In this theoretical basis, we will discuss the philosophical basis, psychological basis, technological basis , and empirical basis.

2.1.1 Interactive PowerPoint Media

The word media comes from Latin and is the plural form of the word medium which literally means intermediary or introduction [2]. The same thing was also stated by Arsyad [3] that the word media comes from the Latin medius which is literally literally means 'middle', 'intermediate' or 'introductory'. In connection with this, as stated by Bovee , quoted by Asyhar [4] that the term intermediary or introduction is used because of its function as an intermediary or deliverer of messages and information from the sender of the message to the recipient .

According to the SMCR model, for effective communication between the source of the message and the recipient of the message, it must be at the same level, if the source and recipient are at the same level, communication will occur or take place correctly.

When communicating (delivering learning messages to students) of course you use media, one of the media that uses information technology to present learning messages is PowerPoint. There are many reasons why you should use PowerPoint in learning, as stated by Jones [5] regarding the main reasons for using PowerPoint, namely:

a. Proper use of PowerPoint can enhance the teaching and learning experience for students,
b. Providing encouragement and support to students by facilitating the arrangement of presentations in a professional manner,
c. With multimedia, presentations can provide different learning styles and be made more stimulating,
d. file format allows distribution and modification for/by students who are unable to attend or who have visual or hearing difficulties,
e. Editing PowerPoint files is very easy at low cost,
f. Handout printing in various formats is facilitated by a number of options for printing the slides ,
g. Additional information can be 'hidden' in the file to answer predicted questions or to provide feedback to students using the file in a distance learning context,
h. Portability of files , especially on compacts disks (CDs) with large capacities, allowing presentations to be given wherever the technology is available or distributed.

2.1.2 Education Technology

The scope of educational technology cannot be separated from the basic concept of educational technology itself, the basic concept of educational technology cannot be separated from the definition of educational technology. In connection with this, the following is the

scope of educational technology based on the 1994 definition of educational technology issued by AECT. Based on this definition, the scope of educational technology has five fields/regions/domains, as described by Seels & Berbara [6] translated by Prawiradilaga , et al below:

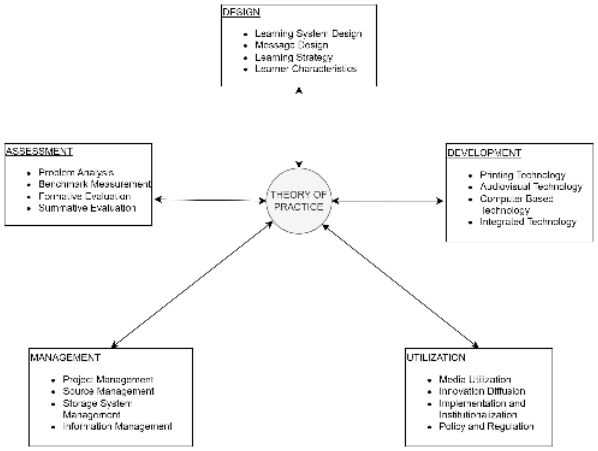

Fig. 1. Friends of Educational Technology 1994

The figure above shows that the scope of educational technology consists of five areas, namely design, development, utilization, management and assessment.

Next, the scope of educational technology is viewed from the definition of educational technology by AECT in 2008. Based on the 2008 definition of educational technology [7], the scope of educational technology can be seen in the following figure.

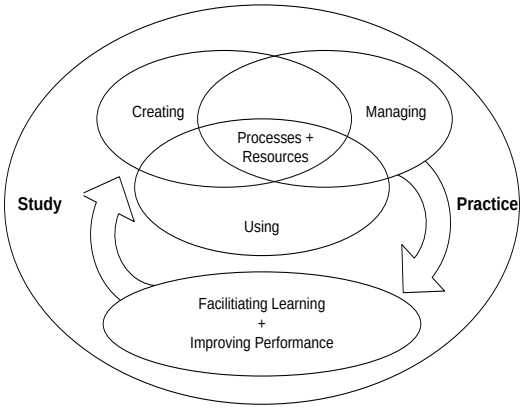

Fig. 2. Friends of Educational Technology 2008

A visual of key elements of the current definition [7]. The picture above provides an understanding that educational technology is a field of science that studies theoretically and ethically , which has the following scope :

a. Facilitate learning (facilitating learning),
b. Improving performance (Improving Performance)
c. Creating (creating)
d. Using (using)
e. Managing _ _

2.2 Development Methods

2.2.1 Development Style

Borg and Gall development model is used , where the steps taken in this research and development are as described by Sugiyono (*Quantitative, Qualitative and R & D Research Methods / Sugiyono | OPAC National Library of the Republic of Indonesia.* , nd) are as follows:

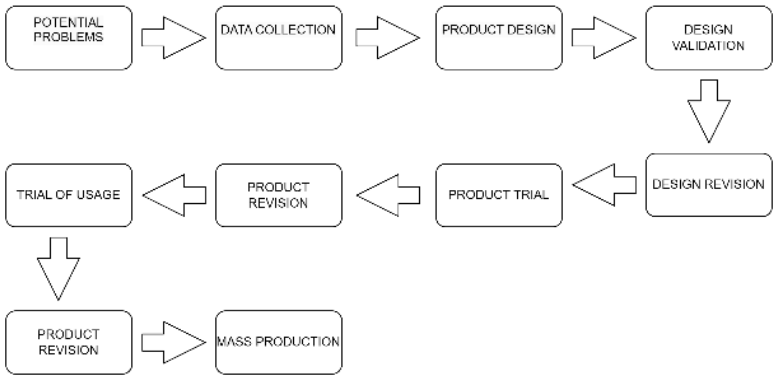

Fig. 3. Development Style

2.2.2 Development Procedure

The research method used is research and development (R &D). With stages adopted from Sugiyono [8].

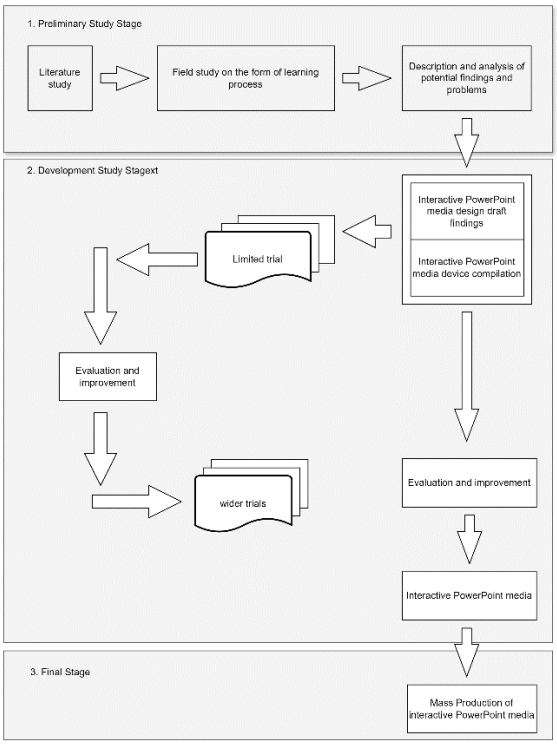

Fig. 4. Development Procedure

3 Results and Discussion

In the results section of this development, the results of trials carried out in small groups and field trials of the development of interactive PowerPoint media in the Educational Technology Course of the Undergraduate Islamic Religious Education Study Program (S1) will be presented which have been validated by design experts, material experts and media expert. Furthermore, from the results of the trial, the data obtained was analyzed to see learning outcomes before and after using the developed PowerPoint media.

Then the results of data collection are also presented in order to obtain comments, suggestions and scores from the media being developed. And at the end of this section, we will explain the revisions made to the suggestions that have been obtained through small group trials and field trials.

3.1 Presentation of Test Results

Table 1. Material Expert Validation Results

No	Rated aspect	Score
1	Conformity of competency standards with course components	3
2	Clarity of basic competencies	3
3	Explanation of learning material supported by audio and visuals	3
4	Suitability of subject matter	3
5	Ease of understanding the material	3
6	Conformity of learning materials with competency standards	3
7	Suitability of learning materials with basic competencies	3
8	Suitability of learning materials to achieve learning objectives	3
9	Depth of learning material to achieve goals	3
10	Suitability of learning materials in providing direction and learning guidance	3
11	Suitability of learning material feedback or effective response	3
12	Suitability of learning evaluation with learning material	3
13	Systematic presentation of learning material	3
14	Systematic learning materials	3
15	Appropriate level of learning difficulty	3
16	Suitability of material to the level of interpersonal intelligence	3
17	Suitability of learning materials to student learning needs	3
18	Accuracy of communication of learning materials	3
19	Accuracy of learning material information	3
20	Accuracy of presentation of learning material	3
Amount		60
Average		3
Percentage		75

The results of material validation show that the learning material in the course for developing interactive PowerPoint media is good enough and can be used for product testing.

Meanwhile, detailed design validation results can be seen in the table below.

Table 2. Design Expert Validation Results

No	Rated aspect	Score
1	Attractive cover design	3
2	Suitability of media design to learning needs	3
3	Suitability of motivational design for learning	3
4	Design ease of use for learning	3
5	Design for easy understanding of learning material	3
6	The accuracy of the design of the sequence of learning events or learning activities	3
7	Design appropriate opportunities for independent learning	3
8	Design for providing guidance and learning direction	3
9	Attractive image design	3
10	Attractive animated design	3
11	Accuracy of color design	3
12	Suitability of music carrying capacity design	3
13	The precision of the design avoids learning boredom	3
14	Accuracy of letter design	3
15	Suitability of image placement design	3
16	Audio design suitability	3

17	Suitability of image and writing design to independent learning needs	3
18	Suitability of design to learning characteristics	3
19	Suitability of learning evaluation design	3
20	Suitability of *layout design* closing *slides*	3
Amount		60
Average		3
Percentage		75

The results of material validation show that the learning material in the course for developing interactive PowerPoint media is good enough and can be used for product testing.

The results of material validation show that the interactive PowerPoint media design developed for the Educational Technology course is quite good based on the score given by the design expert validator .

Next, the results of media validation by media experts can be seen in detail in the following table.

Table 3. Media Expert Validation Results

No	Rated aspect	Score
1	Clarity of instructions for using interactive PowerPoint media	3
2	Text/letter readability	3
3	Image display quality	3
4	Animation presentation	3
5	Image suitability	3
6	Color composition	4
7	Music carrying capacity	3
8	Navigation	3
Amount		25
Average		3,125
Percentage		78,125

This table provides an understanding that the validation of interactive PowerPoint media development in the Educational Technology course is quite good and can be used for product testing.

This interactive PowerPoint media development trial was carried out in 2 stages, namely small group trials and field trials.

A. Small Group Trials

Small group trial of the development of interactive PowerPoint media in the Educational Technology course of the Undergraduate (S1) Islamic Religious Education Study Program, consisting of 3 (three) students of the Syekh Maulana Qori Bangko Institute of Islamic Religion, a trial carried out to obtain students' initial abilities before using the media this PowerPoint lesson. After the pretest is carried out, students are allowed to use this interactive PowerPoint media in the learning process independently, with the hope that there will be a better increase in competency. After using PowerPoint media, students were asked to take a posttest to find out to what extent there had been an increase in learning outcomes that had been made.

B. Field Trials

Field trials were carried out on 10 (ten) students of the Syekh Maulana Qori Bangko Islamic Institute in the context of developing interactive PowerPoint media in the Educational Technology course. In this field trial, it is almost the same as the small group trial, however, in

this field trial the researcher did not conduct in-depth interviews with respondents, whereas in the small group trial, in-depth interviews were conducted about the interactive PowerPoint media that was developed.

After respondents utilized interactive PowerPoint media, a posttest was carried out to measure the extent to which there had been changes or improvements in competence.

3.2 Data Analysis

The data analyzed in this section includes data obtained from expert validation results, data from small group trials and data from field trials, which will be presented in detail below.

A. Expert Validation Results

Based on the validation score obtained for the interactive PowerPoint media development material in this Educational Technology course given by the material expert, none of the aspects assessed received the maximum score, however the percentage score obtained was only 75 or an average score of 3. In connection with the score obtained In this regard, the development of interactive PowerPoint media must be made for overall improvements in each aspect. Vice versa, there was not a single aspect that was judged to be less suitable/not quite appropriate/not easy enough/not clear enough, in fact not a single aspect was judged to be quite suitable/quite precise/quite easy/quite clear. This shows that the material contained in the development of interactive PowerPoint media in the Educational Technology course has led to what was expected.

Then obtaining a design validation score is also the same as material validation, where there is not a single aspect that gets the maximum score. And the score obtained shows a percentage of 75 or an average of 3 which can be understood that the design carried out in the development of interactive PowerPoint media is appropriate/precise/easy/clear.

Meanwhile, the validation results from media experts who gave a percentage score of 78.125 or an average of 3.125 show that the interactive PowerPoint media developed is appropriate/precise/easy/clear compared to what was expected.

The development of interactive PowerPoint media in Educational Technology courses needs to be improved before it is tested, namely by ensuring that the type of letters used must comply with Microsoft Office standards, so that there is no change in the type or size of the letters used. Apart from that, some learning materials in their presentation have been further refined, such as improving competency standards, presenting material on each slide as far as possible supported by explanations in the form of visualizations. Then, to enrich the exercises carried out by users, it is necessary to enrich the exercises in the learning evaluation section so that users can deepen their understanding of the material they are studying.

B. Small Group Trial Results

Before conducting the field trial, a pretest was held for respondents to determine the respondents' abilities in the Educational Technology subject. The results of the pretest can be seen in the following table.

Table 4. Data Recapitulation of Pretest Results from Field Trials

No. Question	FR	TU	OV	LH	IN	IU	ZF	RM	E.F	NH	Average
1	0	0	5	0	5	5	0	5	5	5	3
2	5	5	5	0	5	0	0	0	5	5	3
3	0	5	5	5	5	0	0	0	5	5	3
4	5	0	0	0	0	5	0	0	0	0	1
5	5	0	5	5	5	0	0	0	5	5	3
6	5	0	5	0	5	5	0	0	5	0	2.5
7	5	0	0	5	5	0	5	0	5	5	3
8	5	0	0	5	5	0	0	5	0	0	2
9	5	0	5	0	0	0	0	0	5	0	1.5
10	0	5	5	5	5	5	0	5	5	5	4
11	5	5	5	5	0	0	0	5	0	5	3
12	5	0	0	0	5	0	0	5	5	0	2
13	5	0	0	0	5	0	0	0	5	0	1.5
14	5	5	5	5	5	0	5	5	5	5	4.5
15	5	5	5	0	5	0	0	5	5	0	3
16	0	0	5	0	5	0	5	5	5	0	2.5
17	0	0	5	5	5	5	5	5	5	0	3.5
18	5	5	5	0	5	5	5	5	5	5	4.5
19	5	0	5	0	0	0	0	0	5	5	2
20	5	0	5	0	0	0	0	5	5	5	2.5
Average	3.75	1.75	3.75	2	3.75	1.5	1.25	2.75	4.25	2.75	2.75
Amount	75	35	75	40	75	30	25	55	85	55	55
Percentage	75	35	75	40	75	30	25	55	85	55	55

It can be understood based on the table that there were four respondents who got a percentage score below 50, and there were five respondents who got a percentage score from 50 to 75, and one respondent who got a percentage score of more than 75.

After a pretest was held , respondents were asked to use interactive PowerPoint media developed in the Educational Technology course. By using this interactive PowerPoint media, it is hoped that respondents will be able to learn well and have fun, as well as increasing competency in Educational Technology courses.

The results of small group trials in the form of pretest and posttest provide differences in learning outcomes which can be seen in the following table.

Table 5. Differences in Posttest Scores and Pretest Scores for Small Group Trials

No. Question	Respondents/Scores				Average
	1	2	3	4	
1	0	0	0	0	
2	5	5	0	3.33	
3	5	5	0	3.33	
4	0	0	-5	-1.67	
5	5	5	0	3.33	
6	0	0	5	1.67	
7	5	0	-5	0	
8	0	5	0	1.67	
9	0	0	0	0	
10	0	0	0	0	

11	0	0	5	1.67
12	-5	0	0	-1.67
13	0	0	5	1.67
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	5	1.67
20	5	0	5	3.33
Average	1	1	0.75	0.92
Amount	20	20	15	18.33
Percentage	20	20	15	18.33

This table provides an understanding that there is an increase in differences and/or differences in learning outcomes after using interactive PowerPoint media in Educational Technology courses. With a presentation of a difference of 20% for the first respondent, 20% for the second respondent, and 15% for the third respondent. These results are in accordance with the visual alliteration of the interactive PowerPoint developed as stated by Smaldino (2014: 68) that the input strategy helps students to understand visuals fluently by applying visual analysis, the output strategy helps students to encode.

The results of the small group trial with a comparison between the pretest results and the posttest results show that there has been an increase in student competency by utilizing this interactive PowerPoint media with an increase in the percentage score from 15 to 20. And one more very important thing is that the percentage of score obtained for collecting trial data The small group did not obtain a percentage score below 88, in this regard, according to users of this interactive PowerPoint media, in general the media developed is very suitable/very precise/very easy/very clear.

However, the comments and suggestions provided by small group trial respondents are very important in the development of this media. Among the improvements in the development of this media are the addition of practice questions to the learning evaluation of up to 70 questions, the addition of explanations of material in audio form using special buttons, adjustments to the type and size of the letters because they are still found on slides with small font sizes using Microsoft Office 2007. And improvements to audio that is not clear and/or the volume is inadequate when reading the text on each slide.

C. Field Trial Results

The difference in scores obtained between the pretest and posttest of the field trial with data on a decline in competence in one respondent, and an increase in competence in nine respondents gives confidence that the product being developed is getting better. The number of differences or differences in score results, there were four respondents who had an increase in their total score from 45 to 65, and five respondents had an increase in their score from 10 to 44.

This is in accordance with the function of learning media as part of learning technology which has five potential benefits in solving learning problems stated by Asyhar (2010: 26-27), namely "a) Increasing educational productivity, b) Providing the possibility of more individualized learning, c) Making a more scientific basis for learning, d) Learning becomes more stable, e) The educational process becomes more direct".

Apart from the comments and suggestions regarding data collection, there are several things that need to be improved in the development of interactive PowerPoint media, namely adding more detailed explanations to the learning material in audio form to provide a better understanding of the learning material being studied. Apart from that, there needs to be a back button on the learning material after the user has deepened the material because they answered the learning evaluation questions incorrectly, and finally, there is a need to add a video that also explains the learning material while still paying attention to its suitability

3.3 Product Revision

In this section, revisions to interactive PowerPoint media development products in the Educational Technology course will be presented based on recommendations or suggestions and less than optimal scores provided by material, design and media expert validators , as well as revisions resulting from suggestions by media users or respondents. . Among others are:

a. Adjustment of font type and size in accordance with general Microsoft Office standards,
b. Enrich the practice questions according to the available material, so that more training occurs,
c. Added audio explanation of material,
d. Added back button to confirm learning material,
e. Adding videos as support,
f. Enrich animation to increase the level of attractiveness and appearance.

4 Conclusion

It can be concluded from the research results obtained, namely:

a. How to develop interactive PowerPoint media in the Educational Technology course of the Undergraduate Islamic Religious Education Study Program (S1) using the Borg and Gall development model , where the development steps are: 1) potential problems, 2) data collection, 3) product design , 4) product validation, 5) product revision, 6) product trials in small groups, 7) product trial results revision, 8) field trials 9) field trial product revisions, 10) original production of interactive PowerPoint media that has been developed .
b. Development of interactive PowerPoint media on the eye studying Educational Technology can create more learning effective , because from facet educator will make it easier For convey material learning and sharing student can Study in accordance with respective speed and can repeated as many times as possible arranged yourself . And the results obtained with development of interactive PowerPoint media This happen enhancement competence that can be proven by getting an increased score after use this media , okay evidence in trials group small or trial field.

Acknowledgment. Thank you to all parties who have helped with this development, both validators, respondents and other parties, hopefully the participation provided is useful for everyone

References

[1] S. T. Glavatsky. (1999). *IT for Learning Enhancement*.
[2] A. S. Sadiman, Harjito, A. Haryono, and R. Rahardjo, *Media pendidikan : pengertian, pengembangan, dan pemanfaatannya*. 2018.
[3] A. Arsad, *Media pembelajaran*. 2017.
[4] R. Asyhar. (2011). *Kreatif mengembangkan media pembelajaran*.
[5] A. M. Jones, "The use and abuse of PowerPoint in Teaching and Learning in the Life Sciences: A Personal Overview," *Bioscience Education*, vol. 2, no. 1, pp. 1-13, 2003.
[6] B. B. Seels and R. C. Richey, *Instructional technology: The definition and domains of the field*. Iap, 2012.
[7] A. Januszewski and M. Molenda. (2007). *A Definition with Commentary*.
[8] Sugiyono. (2014). *Metode Penelitian kuantitatif, kualitatif dan R & D*.