

The Development of Multimedia Learning Using Macromedia Flash 8 on PAI Subjects in 8th grades of Junior High School

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Abstrak

Di era 4.0 saat ini. Teknologi dalam dunia pendidikan sudah menjadi hal yang sangat diperlukan. Kebutuhan ini bertujuan untuk meningkatkan hasil belajar siswa agar mampu bersaing di tingkat internasional. Salah satu teknologi dalam dunia pendidikan adalah Macromedia Flash 8. Teknologi ini merupakan teknologi yang sangat berguna dalam pembelajaran. Penelitian ini bertujuan untuk mengetahui validitas, kepraktisan, dan efektivitas teknologi tersebut. Penelitian ini menerapkan model pengembangan Borg and Call yang dimodifikasi oleh Sugiyono. Penelitian menunjukkan bahwa penerapan teknologi tersebut dalam pembelajaran PAI berada pada kategori sangat valid dan valid. Sedangkan kepraktisan berada pada kategori sangat praktis. Sedangkan nilai efektivitas dan efektivitas kegiatan berada pada kategori sangat menarik dan sangat efektif.

Kata kunci: *Pengembangan Multimedia, Macromedia Flash 8, Pendidikan Agama Islam (PAI), Sekolah Menengah Pertama (SMP)*

Abstract

In today's 4.0 era. Technology in education has become very necessary. This need aims to improve student learning outcomes so that they can compete at the international level. One of the technologies in education is Macromedia Flash 8. This technology is a technology that is very useful in learning. This research seeks to determine the validity, practicality, and effectiveness of this technology. This research applies the Borg and Call development model modified by Sugiyono. Research shows that implementing this technology in PAI learning is in the very valid and valid category. Meanwhile, practicality is in the very practical category. Meanwhile, the activity effectiveness and effectiveness values are in the very interesting and very effective categories.

Keywords: *Multimedia Development, Macromedia Flash 8, Islamic Religious Education (PAI), Junior High School (SMP)*

INTRODUCTION

Education alone is insufficient to address a person's demands in the modern era of "4.0." Raising human dignity is the goal of education, and this can only be accomplished through arduous measures. As a result, both individually and collectively, education plays a key role in a nation, particularly Indonesia." Anggoro (2015, p. 122). Islamic Religious Education is one of the disciplines taught in Indonesian schools (PAI). In order for students to practice, comprehend, have faith, as well as apply all forms of piety in everyday life and have good (noble) morals in implementing Islamic teachings, which are derived from the Quran and hadith, PAI aims to prepare them in a planned and conscious way through guidance programs, training, and application of experience" (Aziz, Moh Khasan, Alfian Shafrizal, & Dahwadin & Nugraha, 2019; 2022).

PAI classes are now the primary science that students need to master in the contemporary 4.0 era. This is due to the fact that PAI is essential to society, the country, and the state. This requirement makes sense because religion plays a major role in directing people back to the correct path and preventing them from straying. For instance, religion has the power to improve someone's morality. Muhaimin states that "PAI ideals, goals, and objectives in upholding Islamic values teachings. Because of this, PAI lessons are essential for pupils to learn. But in reality, PAI learning is referred to as conventional learning since it is very verbal and contains dull content (Sibilana, 2016).

Law Number 20 of 2003 states that "educators are expected to abandon conventional educational styles and switch to modern educational styles. The conventional education style described only relies on books and educators. Meanwhile, the modern education style is described as relying on advanced technology and information and having proven quality in learning" (UU Number 20 of 2003).

"The information technology revolution has changed human thought patterns and ways of working, both how to communicate, how to produce products, how to coordinate, how to think schematically, and how to teach and learn" (Fahmi, 2014, p. 167). The shift in technology gave rise to a new branch of science called educational technology, which works in the realm of technology. It is possible to classify educational technology as an applied scientific field with limited research. "Educational technology emerges from the integration of theories and concepts in various interconnected scientific disciplines to be able to solve learning problems that cannot be resolved using previous approaches" (Salamah, 2009, p. 157; Siregar et al, 2020)

The introduction of educational technology has affected the way that PAI lessons are taught and learned. Previously dull lessons became engaging audio-visual lessons with added graphics and sounds (Siregar, et al, 2020). Technology will occasionally continue to advance significantly, especially in the area of learning media. Many new software types that can be utilized in educational media were created as a result of this advancement. Among the programs is Macromedia Flash 8.

Ardiansyah claims that "this product is software that can be used as a tool to obtain dynamic aspects in teaching and learning or in the process of creating interactive cartoon/animation films" (Ardiansyah, 2013: 5). "This technology was initially produced

before 2005, then in 2005 this product continued to develop to the latest technology now, namely Macromedia Flash 8 technology" (Chandra, 2017, p. 1).

Based on observations and interviews at the SMP Pembangunan Laboratorium UNP Padang, "PAI learning material that is difficult for students to master is Al-Quran hadith (tajwid) material. This is because learning Tajwid feels boring. This results in a decrease in student learning outcomes, which can be seen below the KKM" (observation and interview at UNP Padang Laboratory Development Middle School with the 8th grade Islamic Education Teacher, namely Mr. Syahrul, S.H.I. at UNP Padang Laboratory Development Middle School on June 21 2023 at 11.50 - end).

Based on the results of the PH values, it can be concluded that the percentage of students who passed the KKM in class 8 X1 was 40% (8 people) and those who did not pass was 60% (12 people). Meanwhile, the percentage of students who passed the KKM in class 8 X2 was 35% (7 people) and those who did not pass was 65% (13 people). The cause of low student learning outcomes is because the technology and media implemented are still in the form of Microsoft PowerPoint. The latest technology and media such as articulate storyline, digital video (canva), E-Learning Moodle, Macromedia Flash 8, etc. are still minimally used, especially interactive learning media in the form of animation which is created to enable students to use Macromedia Flash 8 so that it is easier to understand Al-Quran Hadith material regarding Tajwid.

We are currently in the fourth industrial revolution in education. Innovation in the educational process to make use of current technologies is the answer to this issue. The program makes use of Macromedia Flash 8. It is envisaged that the availability of animated multimedia learning materials will increase students' enthusiasm for learning and make studying PAI enjoyable.

Based on the description above, the researcher will develop Islamic Education learning multimedia in Al-Quran Hadith (tajwid) material using Macromedia Flash 8 with the title "Development of Learning Multimedia Using Macromedia Flash 8 in Class VIII Islamic Religious Education Subjects in SMP Pembangunan Laboratoirum UNP Padang."

The matter that will be examined in this research is the validity, practicality, and effectiveness of products in the form of learning multimedia using Macromedia Flash 8 in PAI subjects.

According to Arsyad, explaining that the media has the origin of the word in the form of Latin Medius, which was originally interpreted as middle, intermediary, and introduction. Based on this explanation, the media means as a continuation or companion of the message so that feedback occurs in it. Media can also take the form of software and hardware. Gerlach & Ely explained that the definition of a media if interpreted broadly is a person, material, or all events that can form conditions that make students able to gain knowledge, skills, or attitudes (Arsyad, 2016).

Multimedia is one of several types of media applied in learning. Along with the development of computer and digital technology so as to create the latest forms of media, one of which is multimedia. The ability possessed by this media is to make it easier to connect messages, information and knowledge through text, sound, audio, animation, and

hyperlink impressions which are carried out in an integrated way and are often used in independent learning (Surjono, 2017; Nafsi, 2022).

The definition of Flash is one of several pieces of software (software) products that have advantages in creating vector image animations that are needed by developers to this day. Macromedia Flash is a web animation program developed and created by Macromedia Corp. While Macromedia Corp. is a software vendor (software company) that takes part in the field of Web animation (Chandra 2017).

PAI is an education that teaches students so that there is an increase in faith, understanding, appreciation and knowledge of things related to Islam and becoming humans who have devotion to Allah SWT including good (noble) morals in personal life, society, nation, and state (Ermanelis, 2016).

PAI subjects are one of the junior high school subjects that students must be able to complete (Rahayu, 2016). One of the materials in PAI subjects is the Quran Hadith Lesson, namely Tajweed.

According to Sugiyono, the validity test is a step to test the content of the instrument, with the aim of measuring the accuracy of the instrument to be applied in a study (Sugiyono, 2015; Hidayati, 2022). Validity means that the structure of the intervention is based on current information (content validity) and the various components of the intervention are consistently related to each other (construct validity)" (Akker, 1999): 127; Hidayati, 2022). Practicality refers to users (and other experts) who find the intervention attractive and can be used under 'normal' conditions (Akker, 1999: 127; Hidayati, 2022). Effectiveness refers to the fact that the experience and outcome of the intervention correspond to the intended purpose" (Akker, et al, 1999: 10; Hidayati, 2022).

METHOD

The subjects of this research consisted of 1 (one) PAI teacher and 2 (two) classes (control class and trial class) with a total of 40 students SMP Pembangunan Laboratorium UNP Padang. This research uses the Borg and Call development model modified by Sugiyono. This model consists of 7 stages, namely the previous research and data collection stage, planning stage, development stage, validation stage, validation revision stage, field trial stage, and field test revision stage. The details of these stages are as follows:

1. Previous research and data collection

The purpose of this stage is to find out the problem being studied and collect all data related to the problem being studied.

2. Planning

This stage aims to systematically compile all the data that has been collected before entering the development stage. Apart from that, this stage also aims to design the product that will be made, namely multimedia learning or what is known as design/prototype.

3. Development

This stage is the product development or manufacturing stage. This stage takes place from the beginning to the end of product creation.

4. Validation

This stage aims to determine the validity of the product being developed. At this stage, the product is rated by experts who are competent in their field, namely material experts, media experts, and language experts.

5. Revise validation

This stage is the improvement stage of the product that has reached the value at the validation stage. All input provided by the validator will be corrected at this stage.

6. Field trials

This stage is the stage of product implementation in the field. This stage consists of 2 (two), namely the use stage and the trial stage. At the product usage stage, the product is researched in a smaller scope. Meanwhile, at the trial stage, the product is examined in its actual scope (large scope). At this stage, a questionnaire assesses the practicality and effectiveness of the product.

7. Revise field trials

This stage aims to improve all input from the Practicality and Effectiveness questionnaire. But if the transportation is shown to be very practical and very effective then there is no need for revisions/improvements.

RESULTS AND DISCUSSIONS

Results

Based on the syntax of the Borg and Call development model, there are 7 steps. The explanation is as follows:

1. Previous research and data collection

a. Needs analysis

Based on observations and interviews conducted with class VIII PAI teachers at UNP Laboratory Development Middle School, it was found that the origin of students' boredom was when learning PAI subjects on Al-Quran Hadith (Tajwid) material. This boredom occurs due to the lack of implementation of the latest technology implemented by teachers such as Canva, Articulate Storyline 3, and especially Macromedia Flash 8. The technology implemented by PAI teachers still uses PowerPoint technology. This has an impact on the low results of PAI subject scores on Al-Quran Hadith (Tajwid) students who are below the KKM.

b. First data gathering

The information gathered includes the Merdeka curriculum, the school's use of collaborative learning, low student learning outcomes, Microsoft PowerPoint as the media, two (two) materials that are challenging for students to master in PAI learning—one of which is Al-Quran Hadith (Tajwid)—complete school facilities, and a facilitator role for the researcher conducting the research.

2. Planning




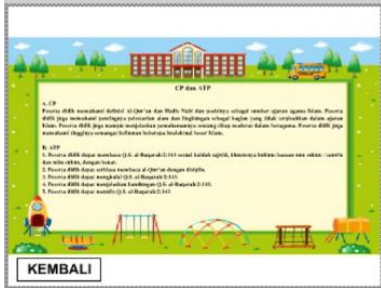
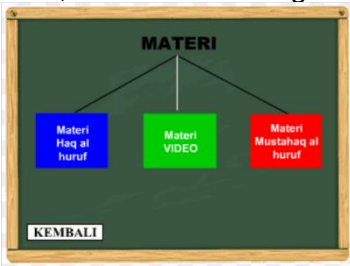

At this stage, what is done is The first stage, collecting all things related to product manufacture such as CP and ATP. Books, journals, and videos related to Islamic Religious Education material on Al-Quran Hadith (Tajwid), Scientific articles discussing Macromedia Flash 8. YouTube channels discussing Macromedia Flash 8. Applications that support product creation, namely Macromedia flash. 8, but does not rule out the

possibility of using other applications (if necessary). The second stage, creating a product design/prototype.

3. Development

At this stage, product creation begins, namely multimedia learning using Macromedia Flash 8 in class VIII PAI subjects in junior high school. The designs created are:

Table 1. Product Development

first, design the loading stage	Second, design the page title
	
Third, the menu design stage	Fourth, the CP and ATP design.
	
Fifth, the material design	Sixth, the profile design
	
Seventh. Stage direction design	



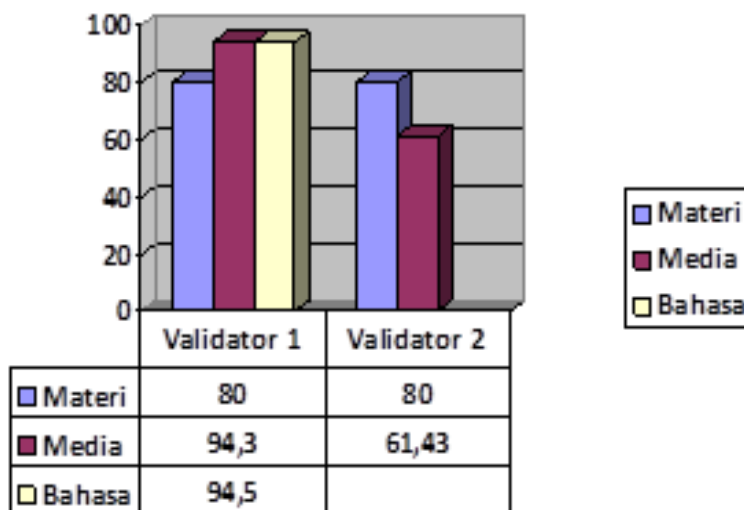
4. Validation

The validation results provided by the product validator can be seen in the following table:

Table 2. Product Validation

Validator	Val. 1	Val. 2	P. 1	P.2
Materi	48	48	80%	80%
Media	66	43	94,3%	61,43%
Bahasa	52	-	94,5%	-








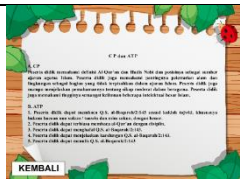
Graphic 1. Product Validation



Based on the validation results obtained, the validation results for material 1 reached 80% (very valid) and the validation for material 2 reached 80% (very valid). Media validation 1 reached 94.3% (very valid) and media validation 2 reached 61.43% (valid). Language 1 validation reached 94.5% (very valid).

5. Revise validation

Table 3. Product Revision

No	Before Revision	After Revision
1		
<p>Information:</p> <p>Based on suggestions from validators to remove the words “back to school”. Then the previous background is changed to the background after revision. After being shown to the validator, the validator approves the background loading.</p>		
2		
<p>Information:</p> <p>Based on the validator's suggestion to stop the display of moving sentences, namely "Learning Multimedia Using Macromedia Flash 8 in Islamic Religious Education Subjects, Al-Quran Hadith (Tajwid) Material for Class VIII Semester 2".</p>		
3		
<p>Information:</p> <p>Based on suggestions from validators to change the appearance of the main background menu on the product. Next, change the layout of the menu from CP and ATP, Material, Profile, and Instructions. Then it becomes Profile, Instructions, CP and ATP, and Materials.</p>		
4		
<p>Information:</p> <p>Based on suggestions from validators to change the background to be more</p>		

attractive and not look like a child. This is because the research objects are junior high school students. Apart from that, it changes the color of the writing to make it readable.

5



Information:

Based on suggestions from validators to add symbols, namely: (previous sign), (next sign), (stop sign), (play sign).

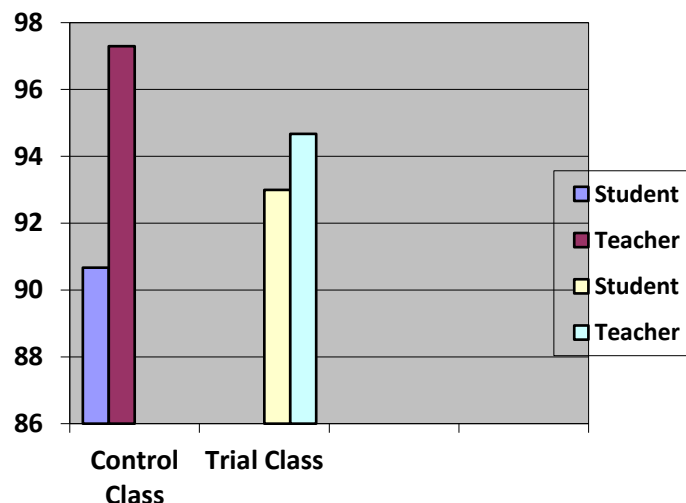
6. Field trials

Practicality results can be seen in the following table:

Table 4. Product Usage and field test

Name Class	Subject	Usage test	Field Test	Category
Control class	Teacher	97.3%	--	Very Practical
	Students	49,75%	--	Very Practical
Trial class	Teacher		94.667%	Very Practical
	Students	50,25%	93%	Very Practical
total number of students		90.667%		Very Practical

Graphic 2. Product Usage and field test



Based on the results of the Practicality of Use Test, the results obtained for teachers were 97.3% (Very Practical) and students 90.667% (Very Practical). Meanwhile, in the Practicality of the Trial Class Field Test, results were obtained for teachers 94.667% (Very Practical) and students 93% (Very Practical). The results of IK effectiveness can be seen in the following table:

Table 5. IK Effectiveness

Test	Students Above KKM	Number of Students	IK	Category
Control Class				
Pre-Test	11	20	55%	Ineffective
Post-Test	15	20	75%	Effective
Trial Class				
Pre-Test	9	20	45%	Ineffective
Post-Test	17	20	85%	Effective

Based on the IK field test of student effectiveness, the results obtained were that in the control class, the results of the pre-test questions were at a percentage of 55% or "Ineffective" and the post-test questions were at a percentage of 75% or "Effective". Meanwhile, in the trial class, the results of the pre-test questions were at a percentage of 45% or "Ineffective" and the post-test questions were at a percentage of 85% or "Effective". The results of Tcount effectiveness can be seen in the following table:

Table 6. Tcount effectiveness

Test	T _{count}	T _{table}	Category
Control Class			
Pre-Test	0,040	1,729	Ineffective
Post-Test	2,702	1,729	Effective
Trial Class			
Pre-Test	0,611	1,729	Ineffective
Post-Test	4,814	1,729	Effective

Based on the field test of Student Effectiveness Count, the results obtained were that in the control class, the results of the pre-test questions were in the percentage of $0.040 < 1.729$ or "Not Effective" and the post-test questions were in the percentage of $2.702 > 1.729$ or "Effective". Meanwhile, in the trial class, the results of the pre-test questions were at a percentage of $0.611 < 1.729$ or "Not Effective" and the post-test questions were at a percentage of $4.814 > 1.729$ or "Effective".

7. Revision of field tests

This product no longer needs to be altered because teachers and students have reported that the data they have provided is extremely practical (teacher), practical (control class), very practical (trial class), and effective (control and trial class).

Discussions

1. Validity Analysis of Multimedia Development Using Macromedia Flash 8

Soenarto Aspects of multimedia quality from aspects/parts of media, material, and language are as follows:

- a) The media display section is first, proportional to the layout (text and image layout). second, determining the decision in the background. Third, the similarity of proportions in color. Fourth, similarity in determining the type of letters. fifth, selecting the font size. Sixth, text readability. Seventh, musical clarity or sound. Eighth, the suitability of the animation to the material. Ninth, the beauty of the button or navigator shape. Tenth, stability (fixed) display buttons (pradana, 2014)
- b) The programming part is first, ease of using the program. Second, ease of selecting program menus. Third, the provisions for the instructions for use are provided. Fourth, freedom in choosing the material you want to study. Fifth, ease of interaction with the program so that feedback occurs. Sixth, convenience when leaving the program. Seventh, ease of understanding usage/navigation structure. Eighth, the speed of the button function (navigation performance) when operated. Ninth, the accuracy of the reaction to the buttons (navigator buttons). Tenth, Ease of rules for running animation (pradana, 2014)
- c) The learning part is first, compatibility of basic competencies with competency standards. However, the independent curriculum uses learning outcomes (CP) and flow of learning objectives (ATP). Second, the similarity of basic competencies with indicators or the independent curriculum is the same as ATP and Modules. Third, the similarity of basic competencies with program material or the independent curriculum is the same as CP, ATP, and Modules. Fourth, clarity of the program title. Fifth, determine the target users who want to run the application. Sixth, clarity of study instructions (use instructions). Seventh, Accuracy of implementing learning strategies (independent learning). Eighth, integration of types of information/data. Ninth, the attractiveness of the material in motivating users. Tenth, level of difficulty of practice/evaluation questions (pradana, 2014)
- d) Content aspects, namely first, harmony of material. Second, the sharpness of the material. Third, the provisions are material. Fourth, organizational structure/sequence of material. Fifth, the example provisions are presented. Sixth, the adequacy of the examples presented. Seventh, clarity of the language applied. Eighth, the suitability of language to target users. Ninth, provisions for information on image illustrations. Tenth, information provisions for animated illustrations (Pradana, 2014).
- e) Conformity to language rules, namely first, grammatical provisions in the product (learning multimedia using Macromedia Flash. Second, spelling accuracy according to EBI (Indonesian Spelling) in the product (Sari, 2023)
- f) Suitability of sentences, namely first, the correctness of the structure and effectiveness of sentences in the product. Second, the effectiveness of the sentences in the product. Third, the sentences in the product are not ambiguous/clear. Fourth, the words used by the product use standard words/terms (Sari, 2023)

- g) Suitability for first-time students, namely, the language used by the product is very communicative. Second, the language used by the product can be understood by students independently. Third, the language used by the product motivates students to learn. Fourth, the language used is simple so that the message conveyed can be easily understood. Fifth, students can manage the messages and information presented on the product (Sari, 2023)

The contents of validation (material, media, and language) refer to the theory created by Soenarto. Based on the results of the researcher's analysis regarding the validation of the five questionnaires (material, media, language). The lowest statement from the validator is regarding the decision to use animation. According to the validator. The animation used and the background used gives the impression of elementary school (SD) students. The input from the validator is revised by the product researcher.

Based on the analysis above, the results obtained show that the product under study can be applied in teaching PAI Al-Quran hadith (tajwid) material in junior high schools, especially class VIII.

2. Analysis of the Practicality of Multimedia Development Using Macromedia Flash 8

Based on answers to teachers' and students' practicality questionnaires in usage tests and field tests. According to Sukardi, the relevance of the questionnaire questions to the existing theories of experts is the criteria for assessing practicality, namely first, ease of use of the media. Second, the use of time in implementation is better short, fast, and precise. Third, the device has its characteristics of interest. Fourth, it is easy to interpret by educators (teachers), experts, and other educators (teachers). Fifth, there is the same equivalence so it can be used as a substitute or variation (Hidayati, 2022).

Based on the reality in the field and expert theory, it can be concluded that the product developed is by existing theory. This can be compared through the results of the questionnaire answers with the theories of experts so that it is found that the product used is very suitable for application in PAI learning Al-Quran hadith (tajwid) material in junior high schools, especially class VIII.

3. Analysis of the Effectiveness of Multimedia Development Using Macromedia Flash 8

Hidayati (2022) explained that product effectiveness can be viewed from the perspective of student learning activities and student learning outcomes. The product effectiveness test through student learning outcomes can be calculated using the IK formula (success index) and the t-test. "This is by what Djamarah and Aswan Zein expressed, saying that if 75% of students take part in the learning or achieve a minimum, optimal or even maximum level of success then it can be said that the learning is effective. "This is why in KKM (75) learning, the academic results achieved by students are used as indicators of success (IK)" (Nafsi, 2022). Meanwhile, students' grades can also be assessed using the t-test (Nuryadi, et al, 2017: 95)

Based on this explanation, it can be concluded that the IK effectiveness test and t-tests can be used as tests in this research. The results of the IK and t-test in this research show the "effective" category so that the product developed in this research can be applied to PAI learning Al-Quran hadith (Tajwid) material in junior high schools, especially class VIII.

CONCLUSIONS

1. Validate the description

There are 5 (five) validators assessed this product, namely 2 material validation people from the Tarbiyah and Teacher Training Department of UIN Imam Bonjol Padang, and 2 media validation people from the Educational Technology Department of Padang State University. 1 validation person from the Indonesian Language Department, Padang State University. Material validator 1 (one) gives a score with a percentage of 80% or Very Valid and material validator 2 (two) 80% or Very Valid. Media validator 1 (one) gave a score with a percentage of 94.3% or Very Valid and media validator 2 (two) 61.43%) or Valid. Language Validator 1 (one) gives a score with a percentage of 94.5% or Very Valid.

2. Description of practicality

There are 2 stages for respondents to fill out the questionnaire, namely the use test stage and the field test stage. Meanwhile, 2 respondents filled out the practicality questionnaire, namely teachers and students. First, the teacher practicality test stage was at a percentage of 97.3% or Very Practical. Meanwhile, students' practicality is at a total percentage of 90.667% or Very Practical. Second, the teacher practicality test stage is at a percentage of 95.3% or Very Practical. Meanwhile, students' practicality is at a total percentage of 93% or Very Practical.

3. Description of Effectiveness

There are 2 types of effectiveness tests. The first is the activity effectiveness test and the second is the value effectiveness test. First, the activity effectiveness test in the trial class gave a percentage of 97.3% (researcher) and 94.667% (teacher). The two IK effectiveness tests in the Control class gave a percentage on the pre-test questions of 55% or Not Effective and the post-test questions gave a percentage of 75% or Effective. Meanwhile, the trial class gave a percentage on Pre-Test questions of 45% or Not Effective and Post-Test questions of 85% or Effective. Meanwhile, the Tcount Effectiveness Test in the control class gave a percentage of pre-test questions of $0.040 < 1.729$ or Not Effective and post-test questions of $2.702 > 1.729$ or Effective. Meanwhile, the trial class gave a percentage of pre-test questions of $0.611 < 1.729$ or not effective and post-test questions of $4.814 > 1.729$. Or Effective.

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