Pembuatan Media Audio Visual Berbasis Animasi pada Materi Pengelasan Sambungan Sudut Posisi Atas Kepala

Fajrator Rozi[a], Mawardi, S.Ag.,M.Pd [b], Baihaqi, M.T[c]

[a,b,c] Universitas Islam Negeri Ar-Raniry Banda Aceh

E-mail: 170211078@student.ar-raniry.ac.id

Abstract

Lack of variation in the delivery of material can be an obstacle in the teaching and learning process, learning that is only guided by the teacher and the material provided at each meeting will greatly influence the success of teaching and learning. Animation-based audio visual media was developed with the assistance of Canva so that it could be implemented in delivering material on welding overhead corner joints at SMK Negeri 1 Pasie Raja. This research aims to produce learning media that can be implemented in material for welding overhead angle joints. This type of research is Research and Development (R&D) and uses the ADDIE development model with stages (Analysis, Design, Development, implementation, evaluation). Validation results from material experts showed that the delivery of material using animation-based audio-visual media with the help of Canva obtained an average score of 88.8% with the criterion "Strongly Agree" and validation results from media experts obtained an average score of 91.1% with the criterion " Strongly agree".

Keywords: Media, Learning, Audio, Visual, Based, Animation

A. Introduction

The increasingly rapid development of technology nowadays can affect various things, one of which is learning and the way material is delivered in the teaching and learning process. With the development of technology in the current era of the industrial revolution, it should be possible to improve the quality of the teaching and learning process in terms of teaching materials and learning media [1]. The development of science and technology today has greatly influenced the world of education, one of which is the learning process. In line with current technological developments, we should be able to use technology to create learning media that can support the learning process.

The use of media in the learning process has an important meaning. Media can explain things that teachers are unable to explain verbally or in writing to students, even the abstractness of material can be made concrete with the presence of media, so that students can more easily digest lesson material than without the help of media [2]. The use of media in the learning process plays a very important role, with the use of media

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in the learning process it can make it easier for teachers to convey material that cannot be explained orally or in writing, with the help of media teachers can provide a description of an event or event in the past in accordance with original help.

Learning media is very helpful in continuing the learning process, the use of learning media can help explain or convey material in a directed manner. Apart from that, learning media can help and make it easier for students to receive the lessons delivered by the teacher. However, not all learning media can be used in the learning process, teachers must choose the right learning media to use in the learning process. One of the learning media that can be used is animation-based audio-visual learning media. This media can attract students' interest and attention, so that students can understand the material well [3].

The use of learning media in delivering material is one way to achieve the desired learning objectives. The use of media in the learning process can not only make it easier for teachers to deliver material but also increase students' interest and willingness to follow and understand the material presented by the teacher, but it does not All learning media can be used to deliver teaching material, teachers must be able to determine and adapt the media used to the material to be delivered to students.

Based on initial observations, information was obtained on the process of delivering the material, especially regarding the material on welding corner joints in the overhead position in class Learning activities are still classified as passive due to the delivery of material which is felt to be less varied and the lack of use of learning media by teachers when delivering teaching materials, especially regarding welding material at overhead angle joints in class XI at SMK Negeri 1 Pasie Raja [4].

From the results of observations made by researchers, it can be concluded that the learning process in class Based on the background of the problem above, the aim of this research is to produce and understand the process of making animation-based audio-visual media on the topic of welding overhead corner joints at SMK Negeri 1 Pasie Raja, and present and implement animation-based audio-visual media on material for welding corner joints in the overhead position at SMK Negeri 1 Pasie Raja.

B. Literature Review

Learning media is anything that can be used to convey messages or information in the teaching and learning process so that it can stimulate students and focus students' attention. Furthermore, animation-based audio visual media is a learning media that is assembled or arranged using an application or web that can depict an incident or event in the past, where the message offered by this media can be in the form of moving images and sound so that it can stimulate the sense of hearing and the sense of sight.

The material for welding corner joints in the overhead position is one of the vocational materials, especially in the field of manual electric arc welding techniques at SMK Negeri 1 Pasie Raja. Welding corner joints studies the procedures for joining two or more metal pieces using electricity as a heat source. The limitations of the problems in this research include: 1) Animation-based Adio Visual Media only contains material, images, sounds and terms in the Material for Welding Corner Joints in Overhead

Position; and 2) This research focuses on the creation and implementation of animation-based audio visual learning media on the subject of welding corner joints in the overhead position.

C. Method

This research uses a type of development research or Research and Development (R & D). Research and Development (R&D) is a research method used to produce certain products and test the effectiveness of the method. In the field of education, research and development or Research and Development (R&D), is a research method used to develop or validate products used in education or learning [5]. From the description above, it can be concluded that Research and Development is a research method that aims to produce certain products and test their validation and effectiveness in use.

Researchers used the ADDIE (Analysis Design Development Implement Evaluate) model research procedure developed by Dick & Carry to create animaker-based animation learning media. The stages of this research include: Analysis, Design, Development, Implementation, Evaluation [6]. The ADDIE (Analysis Design Develop Implement Evaluate) model research procedure is a research procedure to produce learning products or media, the stages of the ADDIE method are as below.
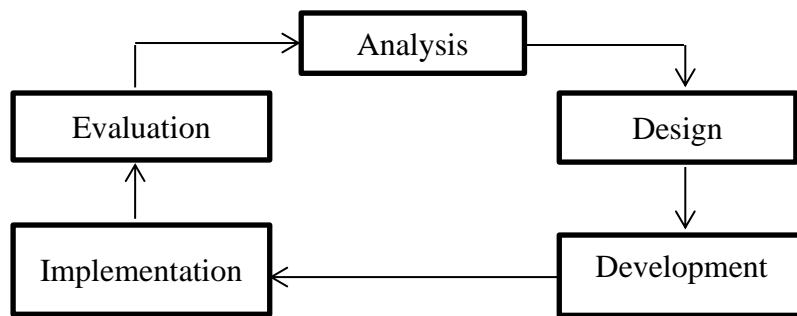

Figure 1. ADDIE Model Procedure

This stage is carried out by determining objectives, identifying the suitability between real conditions and needs that need to be developed and determining the steps to be taken to create Canva-based learning media for learning overhead corner joint welding.

1. Design

At this stage, the design that will be made includes animaker-based learning media for learning about welding corner joints in the overhead position.

2. Development

This stage aims to produce Canva-based learning media on welding angle joints in overhead positions.

3. Implementation

At this stage, the Canva-based animation learning media on overhead corner joint welding material which has been declared valid by the validator is tested on research subjects through limited and expanded trials.

4. Evaluation

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At this stage, an evaluation of the product that has been tested is carried out by providing a response questionnaire and a final test regarding the effectiveness and suitability of the product [7].

The stages of this research consist of five parts, namely, the analysis stage of determining the problem, after the problem is determined then the design stage is carried out starting from material preparation, selecting appropriate images and objects, after the design it is continued with the creation stage starting to arrange the material, images, sounds , and other supporting objects. Next, the implementation stage is carried out to determine the effectiveness of the media being developed. , Next, the evaluation stage is carried out to assess whether the media being built requires revision or whether the media is ready to be applied to overhead position corner joint welding material. The steps in conducting this research are as follows.
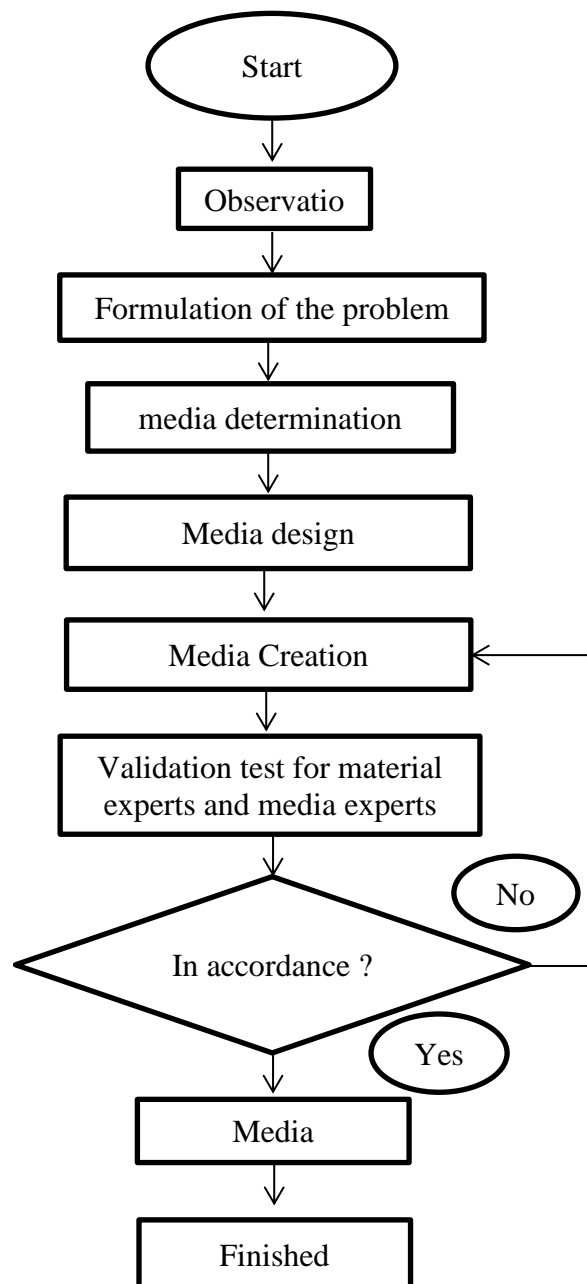
Figure 2. Research Framework

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The steps in this research consist of nine steps starting from observation activities. Observation activities were carried out to find out problems in the learning process, especially in the material of welding overhead angle joints at SMK Negeri 1 Pasie Raja. In the second stage of problem formulation, after the observation activities, problems were formulated in the delivery of material by teachers at SMK Negeri 1 Pasie Raja. Next, the researcher first determined the appropriate media to solve this problem, therefore the researcher designed animation-based learning media using Canva.

After determining the type of media and designing it, the next stage of creation, at the stage of creating animation-based audio-visual media, researchers began to divide the hats that would be discussed, including images, audio and other supporting objects. The media that has been built is subjected to a validation test by material experts and media experts to determine the suitability of the media. If there is a discrepancy in the results of the validation test, it will return to the manufacturing stage. If it is appropriate then the media built has met the criteria (fit for use).

The research subjects in making Canva-based animated learning media for learning overhead angle joint welding were expert examiners, namely material experts and media experts. carried out by PTE lecturers and welding engineering subject teachers. Meanwhile, the object of research is the creation of audio-visual media based on animation using Canva on the material of welding joints at overhead angles.

Research instruments are tools used to measure natural and social phenomena to be observed [8]. Research instruments are also equipment used to obtain, manage and interpret respondent information by carrying out the same measuring pattern. Research instruments are designed for one time or one purpose only or cannot be used repeatedly in other research [9]. Research instruments are tools or methods that can be used to collect data or information about an object being observed. After making observations, data will be obtained that can be measured using certain methods.

The instrument used in this research is a questionnaire. The questionnaire used contained a number of statements and questions which were arranged based on theoretical construction, then developed into several indicators and further elaborated into statement items and questions. The questionnaire used is a closed type of questionnaire, where respondents only provide answers in the form of a check list (√) in the answer choice column provided. The answers used are graded answers from very positive to very negative using a Likert measurement scale with a range of 1 to 5. The

scores obtained on the assessment instrument via a Likert scale are used to evaluate and determine the feasibility of the product being made. These instruments are divided into two groups, namely; a) for material experts, and, b) for media experts.

The data collection method used in this research is a questionnaire. A questionnaire is a series of written questions used to obtain information about the personality or knowledge of an interviewee in the form of a report [10]. Questionnaires are based on research tools designed to facilitate the extraction of necessary data and information. Based on this statement, in this research the author needs to use a questionnaire data collection technique which aims to reveal factual data in the field. The questionnaire used is a closed type of questionnaire, where respondents only provide answers in the form of a check list (√) in the available answer choice column. The Likert scale assessment has a range of 1 to 5 with the value (5) being strongly agree, (4) being agree, (3) is quite agree, (2) is disagree, (1) is strongly disagree.

Data analysis techniques were carried out to collect data and to determine the feasibility of Canva-based animated audio-visual media, developed using research instruments in the form of questionnaires given to respondents, namely material experts and media experts. Activities in data analysis are combining data based on variables and type of respondent, presenting data for each variable studied, carrying out calculations to be able to answer the problem formulation, and carrying out calculations to test previously proposed hypotheses [11].

Based on the results of data analysis, the media created can be said to be feasible or still requires further revision. The results of the questionnaire given to material experts and media experts will later become a reference for research data on the feasibility of Canva-based animated audio-visual media.

Table 1. Scores and Possible Answers

Skor Nilai	Kemungkinan Jawaban
5	Strongly agree
4	Agree
3	Simply Agree
2	Don't agree
1	Strongly disagree

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To measure the percentage of answers based on the value given, the following formula is used:

$$P = \frac{\sum x}{\sum x} \times 100\%$$

Information:
 P = Persentase
 $\sum x$ = Total scores from validators
 $\sum x$ = Total ideal score

The final value of the validation process is categorized according to the percentage criteria of respondents' answers as follows:

Table 2. Criteria and Percentage of Answers

Persentase	Kreteria
81 - 100%	Strongly agree
61 - 80%	Agree
41- 60%	Simply Agree
21- 40%	Don't agree
0 - 20%	Strongly disagree

The table above is the criteria related to the suitability of the media created and will serve as a guide for researchers to categorize the results of expert validation. There are several steps to creating animated media using Canva, including:

1. Access the website www.Canva.com

2. After the link is accessed, register for beginners using email or other social media.

3. After logging in to the Canva home page, click Create a Design, several options will appear, including documents, presentations, A4 worksheets, Instagram and video content. If you want to make a learning video, select the video and you will be directed to the home page of the video slide.

4. Start Making Videos

5. Click on the element then type in the search column the elements needed starting from background, teacher, blackboard and so on.

6. Enter the background, the background can be selected in the element menu according to your needs.

7. Enter the required objects, which can be selected in the element menu.

8. Enter text, which can be selected at the bottom of the element denoted by (T).

9. If the background, objects and text have been inserted, to add audio, click on the file at the top left, you will be directed to document, then select the audio that has been recorded, click and match the slide.

10. To add background sound, click on the element and describe the sound in the search column and choose the duration with the audio.

11. Do a review

12. If there are no errors, the video can be saved by clicking the word share in the top right section, several options will appear, download, share on social media and copy the link.

In making an animated video using Canva, you must first prepare a script or certain points that will be displayed in the video that will be made, in other words, compiling a storyboard. A storyboard is an illustration of a story that will be made either based on still images or moving images according to needs. From making the storyboard, it will become a reference in making learning media, especially on the topic of welding overhead angle joints using Canva.

The learning process regarding the points discussed in animation-based audio-visual media using Canva on the topic of welding overhead angle joints is divided into 25 scans, each scene discusses one topic. Learning activities are divided into three stages:

1. Opening

This stage begins with the opening of the lesson and continues with presenting the material to be taught.

2. Learning

At the learning stage/core stage, start carrying out learning activities and discussing the points in learning.

3. Conclusion

In the closing stage/final stage, the teacher concludes the overall learning results and closes the lesson.

D. Result

a. Description of Research Results

This research produces a product in the form of animated learning media, this media is designed attractively using Canva so that students can more easily understand the material presented and can be used by teachers to support the learning process. This animated learning media was developed by following the stages of ADDIE model

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development using five stages, namely: analysis stage, design stage, development stage, implementation, and evaluation.

1.Analysis

At the analysis stage, the researcher obtained information, especially in the delivery of less varied material or materials used by the teacher in delivering the material for welding top corner joints to class XI at SMK Negeri 1 Pasie Raja, Aceh Selatan.

2. Design

At the design stage, researchers designed animation-based audio-visual learning media using Canva. Media is designed to be as attractive as possible by containing writing, images, animation and audio. So that it is possible for students to be interested in following the learning process.

3. Develop

At this stage of creating learning media, there are several steps that need to be taken, including:

a) Determine learning materials and learning objectives.

b) Prepare a storyboard.

c) Cover each topic using the canva.com application or website by following the storyboard guidelines.

The results of creating animation-based audio visual media on top position corner joint welding material using Canva. The learning content is as follows:

1.Home page (cover)

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Figure 3. Initial appearance in the learning video

The cover stage contains an opening video before the learning process takes place with a duration of 7.9 seconds.

2.Indicators

Figure 4. Design of Learning Indicators

In stage two the teacher begins to open the lesson by saying hello, asking about news and providing learning indicators with a duration of 19.9 seconds.

3.Learning Objectives

Figure 5. Learning objectives

In stage three, load a video of the teacher conveying the learning objectives to be achieved with a duration of 13.0 seconds.

4. Learning Materials

Figure 6. Definition of Welding

In stage four the teacher begins carrying out learning activities starting with conveying the meaning of welding with a duration of 1.34 minutes.

5. Manual Electric Arc Welding Equipment
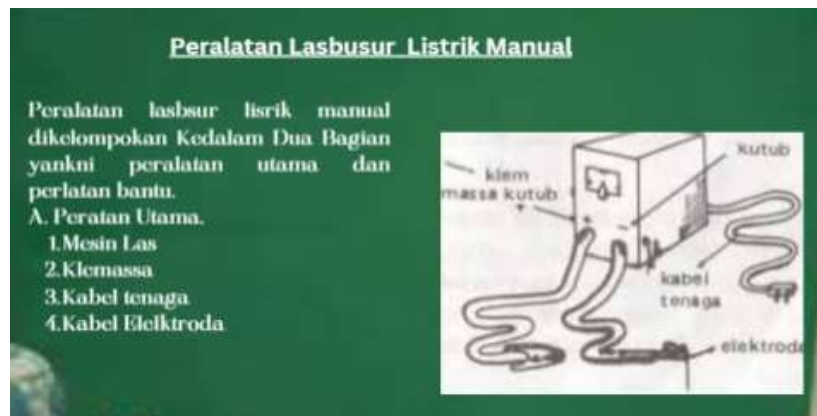
Figure 7. Manual Electric Arc Welding Equipment

In stage five the teacher explains manual electric welding equipment starting from the main equipment and auxiliary tools, video duration 20.8 seconds.

6. Welding Position

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Figure 8. Welding Position

In stage six the teacher explains the positions in the manual electric arc welding process and the position of the workpiece with a video duration of 53.1 seconds.

7.Position of the Work Object

Figure 9. Position of the Workpiece Based on Welding Position

In the seventh stage the teacher shows the position of the workpiece based on the welding position, the video is 4.8 seconds long.
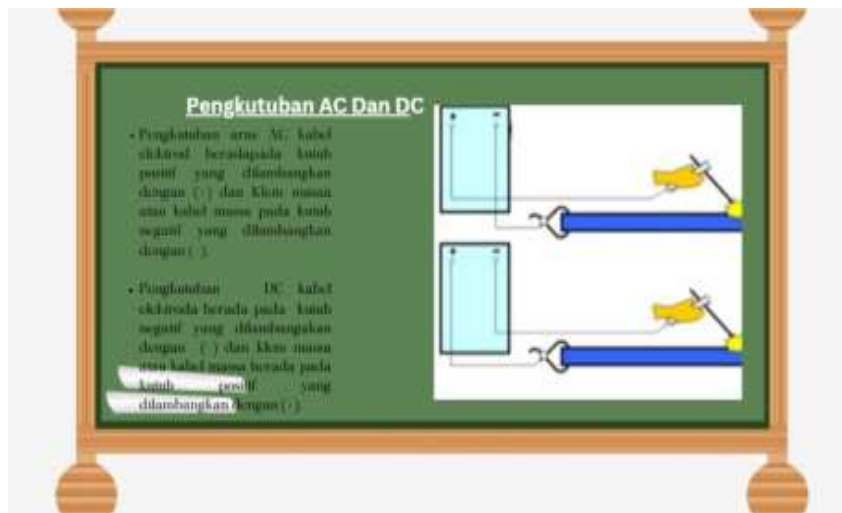
8.Polarization on Welding Machines

Figure 10. AC and DC polarization

In stage eight the teacher explains polarization on a manual electric arc welding machine (SMWA), polarization consists of two parts AC and DC which can be differentiated based on the location of the mass clamp and electrode cable, video duration 26.1 seconds.

9.

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Welding Wire (Electrode)

Figure 11. Electrodes

Stage Nine, the teacher explains about the welding wire or electrode used in the manual electric arc welding process with a video duration of 1.10 minutes.
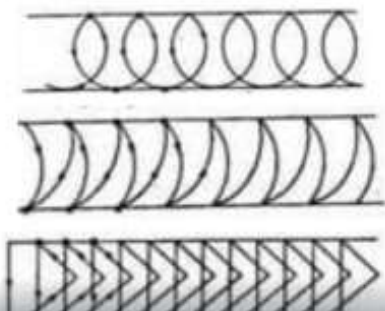
10. Welding Swing

Figure 12. Welding Swing

Stage ten, the teacher explains welding swings with examples, welding swings consist of sepital, zig-zag and triangle swings, video duration 51.2 seconds.

11. Work Accidents

Figure 13. Categories of Work Accidents

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In stage eleven the teacher explains work accidents and groups work accidents into three parts, namely, light, medium and heavy work accidents, video duration 39.0 seconds.

12. Personal Protective Equipment (PPE)

Figure 14. Personal protective equipment and its function

In stage twelve the teacher explains work safety tools in the welding process and their functions, video duration 32.1 seconds.

13. Learning Conclusion

Figure 15. Learning Conclusion

In stage thirteen the teacher concludes the learning results of welding corner joints in the overhead position, video duration 39.2 seconds.

4. Implementation

After the media has been created, a product quality test is needed to determine the quality of the learning media being built. The product quality test was carried out using a validation test. The validation test was carried out by

giving a questionnaire sheet to two experts, namely Mr. Muhammad Aris, S.Pd as subject teacher and material expert and Mr. Baihaqi, M.T as a media expert and as supervisor of both theses. The purpose of carrying out validation tests is to obtain an assessment of whether the product/media being developed is suitable for use or whether it needs to be revised again.

a. Material Expert Validation Results

The validation results obtained from material experts show that there are two aspects with a score of 3 (fairly agree), one aspect with a score of 4 (Agree) and six aspects with a score of 5 (Strongly Agree). The validation results of animation-based audio-visual media learning media using Canva by material experts obtained a total of 40 people with an average of 88.8%, so they were included in the (Strongly Agree) category. Therefore, the animation-based audio visual learning media that has been developed can be used in the manual electric arc welding learning process.

b. Media Expert Validation Results

Validation results from media experts show that there are four aspects with a score of 4 (Agree) and five aspects with a score of 5 (Strongly Agree), with a total of 40 with an average of 91.1, so they are included in the (Strongly Agree) category. Therefore, the animation-based audio visual media that is built can be used in the learning process.

5. Evaluation

Evaluation is the final stage of the ADDIE model development steps. Evaluation can be carried out at every stage of development, the overall evaluation is carried out at the end of development activities. The stage of evaluating the results of the media suitability assessment by material experts and media experts is carried out. This research uses summative evaluation. Summative evaluation is an evaluation carried out at the last stage and aims to assess the suitability of the media developed at the implementation stage. Based on the results of validation by material experts, an overall score of 40 was obtained with an average of 88.8% in the category (Sanagat Agree). Meanwhile, from the validation results by media experts, an overall score of 41 was obtained with an average of 91.1% falling into the (Strongly Agree) category.

Based on the validation results from material experts and media experts, it can be concluded that animation-based audio visual media using Canva is included

in the (Strongly Agree) category in the sense that it is suitable for use in the learning process, especially in the topic of welding overhead corner joints.

b. Discussion

The research is entitled making audio visual media based on animation on the material of welding joints at angles in the overhead position. This research aims to produce animated learning media. To achieve this goal, the creation of animation-based audio visual media using Canva was created using ADDIE which consists of several stages, namely analysis, design, development, implementation. Implementation) and evaluation (Evaluation).

In the analysis phase (Analysis), the researcher obtained information that in the teaching and learning process at SMK Negeri 1 Paseie Raja, Aceh Selatan, especially in the topic of welding overhead angle joints in class or teaching materials still use guidebooks and explain using the lecture method. Therefore, researchers are interested in creating animation-based audio-visual learning media on the topic of welding overhead corner joints using Https://www.canva.com, which displays images, audio, video and animation along with writing

Design stage, at this stage the researcher determines the material that will be discussed in the learning video, determines the media used, determines the learning objectives and prepares the Storyboard. Next is the creation stage (Development). At this stage the researcher begins to create learning media with the initial steps of accessing Https://www.canva.com, determining the topics to be discussed, choosing images or objects that suit the material, inserting audio, selecting background sound and adjust the duration. In general, the components contained in the animated learning video on overhead corner joint welding material using Canva consist of three or four stages, stage one is an open video, stage two learning activities start from understanding welding and stage three is a closing activity.

Next is the implementation stage, this stage is carried out to determine the quality of the learning media being built. Product quality testing is carried out using validation tests, validation tests are carried out by giving questionnaires to two expert experts, namely Mr. Muhammad Aris, S.Pd as subject teacher and material expert and Mr. Baihaqi, M.T as media expert and as supervisor of the two revised theses. repeat. From the validation test results, material experts obtained an overall score of 40 with an average of 88.8%. Madia experts obtained an overall score of 41 with an average of 91.1%.

The final stage carried out in this research was evaluation. The evaluation carried out at this stage is a summative evaluation which aims to determine the suitability of the media being built. Based on the results of validation of media suitability by material experts and medical experts, they obtained an overall score of 40 with an average of 88.8% from material experts and a total of 41 with an average of 91.1% from material experts. Based on the validation results, it can be concluded that animation-based audio-visual learning media on welding angle joints in the overhead position falls into the category (Strongly agree/Very feasible).

E. Conclusion

Based on the results of research that has been carried out regarding the creation of animation-based audio visual media on the topic of welding corner joints in the overhead position of class XI at SMK Negeri 1 Pasie Raja, Aceh Selatan, several conclusions can be drawn as follows:

1. The creation of animation-based audio visual media based on the Research and Development (R&D) method and using the ADDIE creation model has been successfully carried out, consisting of stages (Analysis, Design, Development, Implementation and Evaluation) with a duration of 42.5 minutes.

2. The animation-based audio visual media that was built was declared suitable for use and has been implemented with validation results by material experts with an average score of 88.8% with the eligibility criteria "strongly agree", and validation results by the media with an average score of 91. 1% with eligibility criteria "Strongly Agree".

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