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# **The Advancement of Audio Visual Technology Based Educational Materials for Social Studies**

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## **Abstract**

The advancement of audio visual technology based educational materials that will be developed against the background of the minimal use of social studies learning media is limited to use only textbooks and whiteboards. The goal of this study is to develop teaching materials for product oriented social science in the version of audio-visual-based educational media that is feasible and effective for use in learning. Research and Development (R&D) research methodologies are used in this study. This Research used ADDIE, which has five stages: 1) analyze, 2) design, 3) development, 4) implementation, and 5) evaluation. The Islamic Elementary School Amaliyah Tanjung Tiga fifth grade students are the subjects in this research. In this study, the data analysis method is qualitative descriptive statistics with questionnaires and tests. In this study, descriptive statistics are used to analyze quantitative data. Based on the findings, the produced teaching media is claimed to be legitimated and practicable for use in education, as well as very practical for students to use in the learning process, based on validator and classroom teachers' evaluation, while also ideas and feedback from materials experts, factorial design, media, and teachers include learning success or students'

learning completeness. Based on the above calculations, the observations carried out by experts at revision I 79.06 % and after revision II reached 81.52% then revision III 85.13% reached then this score is included in the very valid or very feasible criteria. The validity level is sufficiently valid that generated 81.9%. This development research resulted in a product that met the content, as well as being effectively used to improve students' learning outcomes. Including individual mastery learning reached 83.42%, classical learning completeness reached 82.1% with the N-gain percentage reaching 0.75, and getting a positive response from students reached 74.9% with good criteria.

**Keywords:** Learning Media, Audio Visual, Social Studies

### Abstrak

*Pengembangan bahan ajar pembelajaran berbasis audio visual yang akan dikembangkan dilatarbelakangi penggunaan media pembelajaran Ilmu Pengetahuan Sosial yang masih minim terbatas hanya menggunakan buku paket dan white board. Tujuan penelitian dan pengembangan ini untuk mengembangkan media pembelajaran berbasis audio-visual pada mata pelajaran Ilmu Pengetahuan Sosial dengan output sebuah produk yang layak dan efektif untuk digunakan dalam pembelajaran. Metode penelitian menggunakan Reseach and Development (R&D). Model pengembangan menggunakan model ADDIE dengan 5 tahapan yaitu: 1) analyze, 2) design, 3) development, 4) implementation, (5) evaluation. Subjek dalam penelitian ini ialah siswa kelas V Madrasah Ibtidaiyah Swasta (MIS) Amaliyah Tanjung Tiga. Metode analisis data menggunakan statistik deskriptif kualitatif dengan menggunakan angket dan tes. Data yang diperoleh dari kuesioner berupa data kuantitatif diolah dengan teknologi analisis data kuantitatif. Dalam penelitian ini, statistik deskriptif digunakan untuk pengolahan data kuantitatif. Berdasarkan temuan, media ajar yang dihasilkan dapat diklaim layak dan efektif digunakan dalam proses pembelajaran, berdasarkan penilaian validator dan guru kelas, serta ide dan umpan balik dari ahli materi, ahli pembelajaran, ahli media dan guru serta keberhasilan belajar atau ketuntasan belajar siswa. Berdasarkan perhitungan validasi yang dilakukan oleh para ahli pada revisi I 79,06% dan setelah revisi II mencapai 81,52% dan revisi III mencapai 85,13% skor ini termasuk dalam kriteria sangat valid atau sangat layak. Tingkat validitas cukup valid yaitu menghasilkan 81,9%. Penelitian pengembangan ini menghasilkan produk yang memenuhi isi, serta efektif digunakan untuk meningkatkan hasil belajar siswa. Diantaranya ketuntasan belajar individu mencapai 83,42%, ketuntasan belajar klasikal mencapai 82,1% dengan persentase N-gain mencapai 0,75 dan mendapatkan respon positif dari siswa mencapai 74,9% dengan kriteria baik.*

**Kata kunci:** Media Pembelajaran, Audio Visual, IPS

## INTRODUCTION

The learning process is a system consisting of various interrelated and managed sub-systems in the components of the learning system (Ragil Kurniawan, 2017). The learning process includes teachers, teaching materials, learning media, students, and



learning objectives, all of which influence each other in achieving learning goals. Learning media is one of the supporting factors for creating fun learning (Hidayah & Fahmi, 2020). Utilization of a learning media by a teacher needs to be done because it can support the learning process, therefore teachers must be able to develop an interesting learning media (Trinata & Dewi, 2020). Teaching materials are one of the tools in learning that play an important role in achieving learning outcomes (Pattaufi, 2020).

Media plays a vital part in the process because it engages students, motivates them to study, and improves learning outcomes (Hayati et al., 2015; Mukhtar & Yamin, 2002). The use of appropriate learning material during the educational process could inspire new learning activities (Aprilliyani et al., 2014). The more intensive the learning experience lived by the students, the higher the quality of the learning process. Because learning is essentially a communication process in which teachers convey knowledge to students, learning media plays a vital role as one of the learning systems, particularly in social studies learning. History, geography, and economics, as well as other social science courses, are included in Social Studies subjects (Sapriya, 2009).

Social studies subjects have the aim of educating students to be good citizens, have social skills, have a noble character, and are responsible for themselves and the country (Afandi, 2015). In achieving the objectives of social studies learning, there are obstacles faced by teachers, namely social studies subjects are considered one of the most difficult and boring materials for some students because of the many theories and content in social studies material that is abstract and complex (Wahyuningtyas & Rosita, 2019).

This situation was found because, in the social studies learning process, the method used was still very simple, namely lectures sometimes interspersed with memorization, and even learning facilities such as Liquid Crystal Display, Compact Disc, and monitors provided were also rarely used. As a result, students' reactions to the material presented are minimal, it is not uncommon for students to not understand the material being conveyed (Salam, 2017). As a result, students assume that social studies lessons are boring subjects, because the learning process only emphasizes mastery of the material as much as possible, therefore the use of the lecture method is more widely used and is seen as more effective in achieving the goal (Putri & Citra, 2019).



Students are more engaged and passionate about participating in every learning process when using media in the learning process, this is especially true in social studies learning (Ainina, 2014). The learning media used in each learning activity can affect the effectiveness of the learning itself (Rajagukguk, 2019). However, this still cannot be found in the learning process in Islamic Elementary School Amaliyah Tanjung Tiga. Students are more often silent and only limited to listening to the material being conveyed, sometimes some are sleepy, silent, doodle, and even play stationery.

The fact that researchers found, some teachers still have difficulty in completing each delivery of material. This is derived from the results of monitoring and preliminary interviews with supervisors, principals, and teachers, who found that instructors continue to use solely books and whiteboards to educate. The fundamental reason for this is that teachers struggle to finish each delivery of content, even if the material may be depicted utilizing a variety of media (Supardi et al., 2015). The teachers' Islamic Elementary School in Tanjung Tiga is mostly reluctant to use audio visual based learning media because they still have difficulties in creating or developing audio visual media.

The obstacles that are occurred by teachers when using audio visual media are for several reasons, namely, lack of teacher knowledge of technology, lack of teacher skills in managing time and making learning media, or teachers have more effective methods to use in the teaching and learning process in accordance with the material to be taught. Other findings show that teachers do not understand how to use audio-visual-based learning media and teachers also take a long time to prepare learning materials using audio visual media so that when an obstacle occurs, it will not only waste time but also the material to be displayed. Not to be delivered optimally to students who will be taught. Constraints to the use of audio-visual media in learning are problems related to teacher competence, problems with students, and problems with audio-visual learning media. This is caused by teachers who are less competent in operating audio visual learning media (Riskawati, 2020). The application of learning media has been adapted to the characteristics of low grade students. In its application, there are several problems or obstacles faced by teachers, namely time allocation, keeping the class conducive, and infrastructure that is quite adequate but is constrained by the existing number so that teachers have to take turns and look for solutions using other learning media (Ahmad & Mustika, 2021).



The success of every teacher in carrying out learning is very dependent on insight knowledge, understanding, and the level of creativity in managing teaching materials (Rajagukguk et al., 2021). Teachers should incorporate appropriate media and approaches into the current curriculum to enable effectively, curiosity, and creativity in the discovery of a new concept in studying (Lubis et al., 2020). Learning media may assist teachers in delivering social studies content and can assist students in comprehending social studies information that is provided in detail and fully. Starting from this phenomenon, researchers will try to inspire the enthusiasm of teachers in Islamic Elementary School Tanjung Tiga with assistance and training in developing audio-visual-based learning media.

Many study's results on the development of social studies learning media that took use of technology advancements and focused on student motivation and learning outcomes are available (Ainina, 2014; Hawari et al., 2021; Ningrum et al., 2021; Sudarto et al., 2019; Wahyuningtyas & Rosita, 2019; Nurfadhillah et al., 2021; Martini, 2015). Especially in the current learning activities which emphasize process skills and active learning, then presumably the role of learning media (which in the following description is often called the media), become increasingly important (Nurseto, 2011). The use of learning media can facilitate the learning process and optimize learning outcomes so that the quality of learning can be seen from two aspects, namely process and product. The process aspect refers to whether learning can create a pleasant learning situation and encourage students to learn actively and creatively. The product aspect refers to whether learning can achieve the goal that is to improve students' abilities in accordance with the specified competency standards. Thus the learning process takes place making a product to be able to assess the extent to which the learning objectives have been achieved.

The development of multimedia elements will be carried out is audio-visual-based learning media. Audio visual teaching materials also have several forms such as film, animations, videos, and television (Hawari et al., 2021). The researcher chose to develop audio visual based teaching materials, the design was in the form of Microsoft PowerPoint which was applied with Camtasia Studio to form a video. In making the design includes an introduction, instructions, introduction, materials, references, and profiles. One of the advantages of video is that it can enrich the presentation or explanation effectively and efficiently. The lack of usage of social



studies learning material that is restricted to textbooks and whiteboards is the cause of this development. The goal of this research was to provide audio visual learning tools for product oriented social studies classes.

## **METHODS**

The Islamic Elementary School Amaliyah Tanjung Tiga, Karang Gading, Secanggang, Langkat Regency, North Sumatra, was the site of this study. The goal of this research is to provide teaching materials for product-oriented social science disciplines in the type of audio-visual educational media. This study employs research and development (R&D) methodologies. This Research used ADDIE which has five stages: 1) analyze, 2) design, 3) development, 4) implementation, and 5) evaluation. The following is a chart of the development model used in the following research and development;



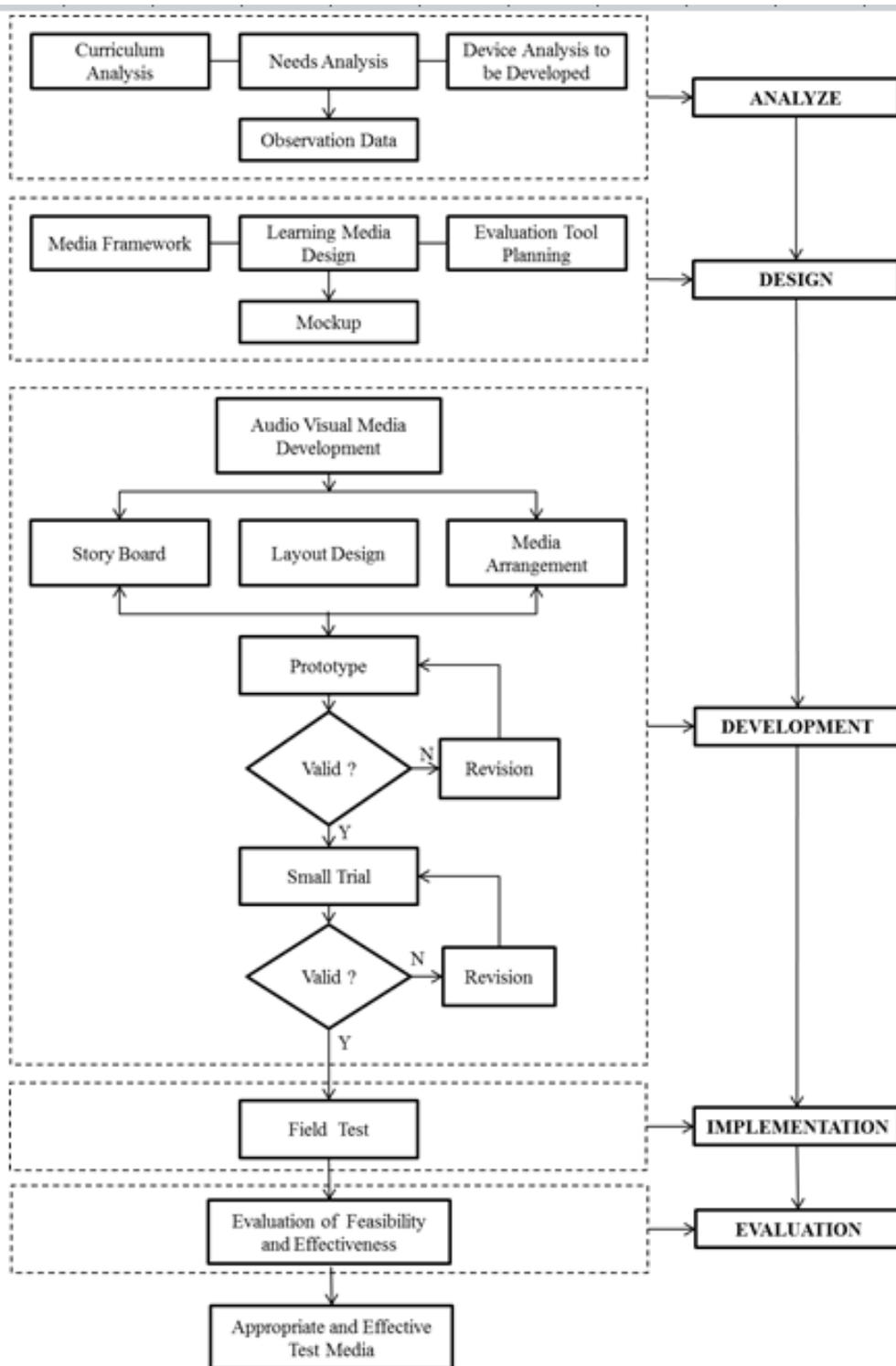


Figure 1. Stages of Development of Audio Visual-based Learning Media ADDIE models



The Islamic Elementary School Tanjung Tiga fifth grade students are the subjects in this research. In this study, the data analysis method is qualitative descriptive statistics with questionnaires and tests. In this study, descriptive statistics are used to analyze quantitative data. The following formula was used to assess the results from the expert validation questionnaire: (Akbar & Sriwiyana, 2011):

$$Vmt = \frac{Tse}{Tsh} \times 100\% \qquad Vd = \frac{Tse}{Tsh} \times 100\% \qquad Vmd = \frac{Tse}{Tsh} \times 100\%$$

$$Vt = \frac{Vma + Vd + Vmt}{3} = \dots \%$$

**Information:**

- Vmt = Validity of the materials expert
- Vd = Validity of the factorial design
- Vmd = Validation in the media
- Tse = Total Logical Score attained  
(based on professional opinion)
- Tsh = Total Calculated Score
- Vt = Complete Validation/join
- 100% = Constants

Furthermore, based on the validity criteria modified based on Table 1 below, provided the perception and judgment call of the product development’s quality :

**Table 1.** Validity Criteria for Teaching Media

No	Score %	Validity Level
1	86 - 100	Very Valid
2	70 - 85	Sufficiently Valid
3	60 - 69	Invalid
4	0 - 59	Very Invalid

Source: (Akbar, 2011)

The trial was carried out on students and was limited to small groups, this was as a follow up to the approval of the experts on the products developed. If



the results achieved are greater than 60%, the product/learning material may be regarded to be practical and acceptable for use by students. A questionnaire distributed to students who utilize audio-visual teaching media gave information on the level of the practicability of the developed media. The modified formula is used to process the data as follows (Hamdunah, 2015);

$$P = \frac{\Sigma f}{N} \times 100\%$$

**Information:**

P = Percentage of Practicality

f = Score

N = Total maximum expected score

After determining the proportion of practicability, the criteria are applied as data interpretation. Table 2 shows the practicality criteria that were utilized as interpretation parameters.

**Table 2.** Parameters for the Level of Practicality of Teaching Media

No	Score %	Practically Level
1	81 - 100	Very useful
2	61 - 80	Useful
3	41 - 60	Useful Enough
4	21 - 40	Fewer Useful
5	P = 20	Non-Practical

Source: Riduwan has been modified (Hamdunah, 2015)

If a teaching media receives a score of greater than 50%, it is considered practical; if the score is less than 50%, the media must be updated and re-validated. The last is processing the data of student learning outcomes, analyzed using the formula for the percentage of student completeness;

$$\frac{\text{Number of students reach KKM}}{\text{Number of all students}} \times 100$$

The scores that have been obtained are then entered according to the criteria for the effectiveness of learning outcomes after using the media in Table 3;



**Table 3.** Success Criteria for Learning Outcome Test

Category	Value (%)	Qualification
A	81 – 100	Very effective
B	61 – 80	Effective
C	41 – 60	Less effective
D	< 40	Ineffective

If the total number of student learning assessments from field trials exceeds 60%, audio visual based learning material can be employed in the learning process.

## RESULTS AND DISCUSSION

This study's end product is an audio-visual teaching material with integrated social studies material, designed specifically for fifth grade students at Islamic Elementary School Amaliyah Tanjung Tiga. The results obtained at each phase of development regard the development process can be described as follow:

### 1. Analyze

The preliminary investigation found that: 1) teachers in schools do not use audio visual based learning media, 2) the existing teaching media content doesn't really match the prescribed teaching materials, 3) The learning media is designed with only a few visuals, and (4) students do not even have a thorough understanding of the subject matter.

### 2. Design

Identification of learning media needs for teachers is the author's activity to obtain information by providing questionnaires and conducting interviews. Based on the identification of needs, the researchers followed up with the design of learning media designs in accordance with what was expected by teachers at Islamic Elementary School Amaliyah Tanjung Tiga. The design results from the identification of learning media to produce products that can stimulate students' interest in learning as are expected by the teachers. After analyzing the media that will be developed based



on observation data. The presentation of the audio-visual-based learning media is arranged in sequence consisting of the initial display, menu, competence, content, simulation, and evaluation. Evaluation tools used in audio-visual-based learning media include practicum, assignments, and formative tests. This evaluation is in the form of multiple-choice and description tests.

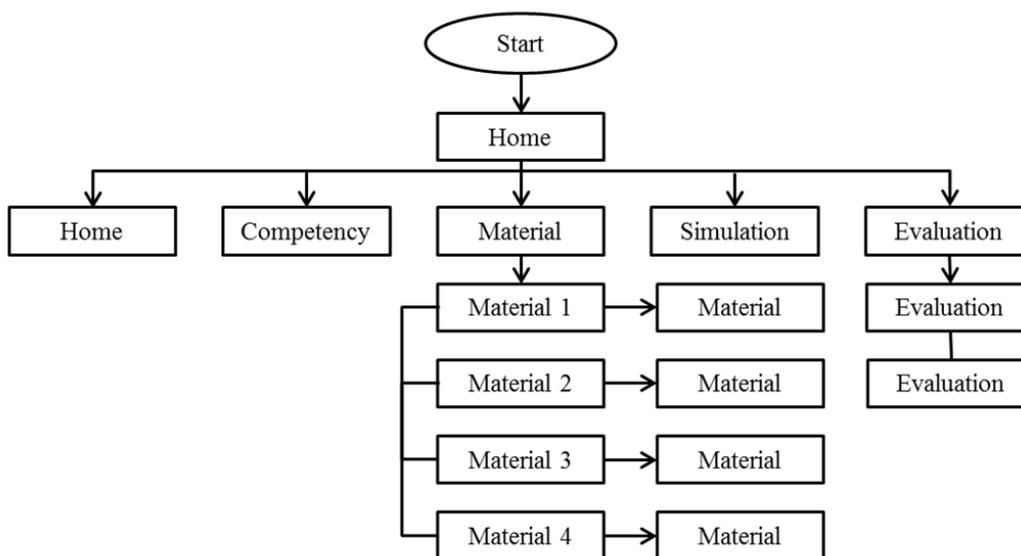


Figure 2. Mockup of Audio Visual-based Learning Media

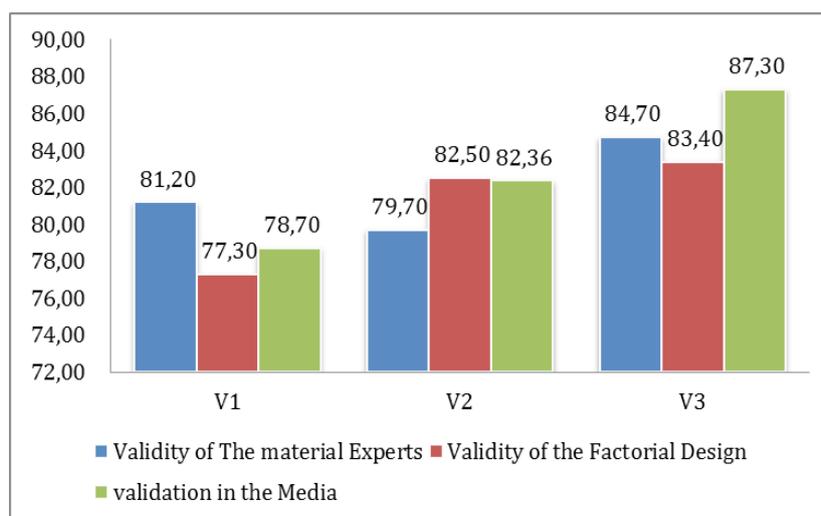
### 3. Development

As a follow up to the design that has been carried out in the design stage, a development step is carried out. The data that has been collected from the validator is converted into a quantitative data result which could then be ranked using only a Likert scale. The results are reported in Table 4 after that.

**Table 4.** Calculation Results of Learning Media Validation

Validation	Validity (%)			Average (%)	Validity Level
	V1	V2	V3		
Validity of the materials expert	81.2	79.7	84.7	81.9	Sufficiently Valid
Validity of the factorial design	77.3	82.5	83.4	81.1	Sufficiently Valid
Validation in the media	78.7	82.36	87.3	82.8	Sufficiently Valid
Total Average				81.9	Sufficiently Valid

Based on the above calculations, the observations were carried out by the validity of the materials expert, the validity of the factorial design, validation in the media. Based on the above calculations, the observations carried out by material experts at revision I was 79.06 % and after revision II reached 81.52% then revision III 85.13% reached. According to Table 4, If matched with table 1. of the eligibility criteria, then this score is included in the very valid or very feasible criteria. The validity level is sufficiently valid that generated 81.9% and has undergone various trial validations procedures in compliance with minor adjustments from the first validation up to the third validation.



**Figure 3.** Expert Validation Results Diagram



After the product validation stage is based on validation from experts, the next step is to conduct a small-scale test involving 2 (two) classroom teachers by providing a teacher and student assessment sheet for learning media based on audio-visual. The results are reported in Table 5.

**Table 5.** Learning Media Practicality Level

Validation	Teachers 4 <sup>th</sup> (%)	Teachers 5 <sup>th</sup> (%)	Average (%)	Practicality Level
Response Questionnaire	84.8	88.2	86.5	Very useful
Average Learning Media Practicality Level (%)			86.5	Very useful

According to Table 5, based on the above calculation, the observations made by the fourth grade and fifth grade teachers reached 86% and 82% respectively. The average learning media practicality level of the scientific theme teaching media generated is 86.3%, based on the very useful criterion in table 2, then these scores are included in the very valid or very feasible criteria.

After the product revision stage is based on validation from experts, the next step is to test the product in small groups. The small scale test was carried out by involving 10 class V students by providing a student response questionnaire that each student would fill out.

**Table 6.** The Results Of The Small-Scale Test Student Eligibility Questionnaire

Validation	1	2	3	4	5	6	7	8	9	10	Average (%)	Practicality Level
Response Questionnaire	83	84	88	81	85	85	79	84	86	82	83.7	Very useful
Average Learning Media Practicality Level (%)											83.7	Very useful



Based on the calculations above, the observations made by the students after the learning process were obtained had a validity level of 83.7%. If it is matched with table 2 of eligibility criteria, then this score is included in the valid or feasible criteria.

#### 4. Implementation

After the audio visual based learning media is declared feasible by material experts, learning design experts, and media experts, the learning media developed can be implemented in teaching and learning activities. The product trial was carried out in class V at Islamic Elementary School Amaliyah Tanjung Tiga. At the end of the meeting, the researcher gave post-test questions to the students, this was done to determine the students' abilities after learning using the developed learning media.

#### 5. Evaluation

The final stage of the ADDIE development model is evaluation, which is carried out by researchers by analyzing the research data obtained, namely validity analysis from expert lecturers, class teacher assessment sheets and student eligibility questionnaires, and analysis of the results of pre-post-test needed to determine the effectiveness of the learning media used. developed for learning activities

The effectiveness of the learning media developed was measured using the analysis of (1) learning success or student learning completeness and (2) student responses. The test results obtained were then analyzed by researchers to see students' completeness in individual and classical learning. Students' individually learning mastery can be calculated by the formula:

$$K = \frac{T}{T_t} \times 100 \%$$

$$K = \frac{8,4}{100} \times 100 \%$$

$$K = 8,4 \%$$



**Table 7.** The Results Of Individual Learning Mastery On A Large-Scale Test

Students	1	2	3	4	5	6	7	8	9	10	F	NF
Group 1	86.7	86.7	80.0	86.7	80.0	86.7	93.3	86.7	66.7	93.3	9	1
Group 2	80.0	80.0	86.7	86.7	73.3	80.0	80.0	73.3	80.0	86.7	8	2
Group 3	73.3	80.0	86.7	86.7	66.7	80.0	80.0	93.3	86.7	73.3	7	3
Group 4	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	93.3	8	1
Average										83.42		
Standard Deviation										7.93		
Variance										62.88		

Based on the data of individual learning mastery based on students' abilities, it is known that there are 7 (seven) students who are "unfinished" and there are 32 (thirty-two) students who are "completed". Based on the classical learning completeness data above, there are 82.1% of students have achieved KB 65%.

$$PKK = 82,1\% \quad PKK = \frac{\text{Many students are KB} \geq 65\%}{\text{Many research subjects}} \times 100 \%$$

$$PKK = \frac{32 \geq 65\%}{39} \times 100 \%$$

$$PKK = 82,1\%$$

Based on the completeness data above, there are 82.1% of students have achieved KB 65%. After students' mastery in studying individually and classically was analyzed, the results of the pre-test and post-test were calculated by means of a gain score. Based on the gain score, the result is 0.75, and the student's gain score is high.

**Table 8.** Pre-Test and Post-Test Results of Large-Scale Test Students

No	Pre Test				Post Test				Ket
	Value (X)	F	Average	SD	Value (X)	F	Average	SD	
1	20.00	3			66.70	2			BT
2	33.30	6	33,5	11,3	73.30	5	83.42	7.9	BT
3	40.00	8			80.00	12			T



4	46.70	11	86.70	13	T
5	66.70	6	93.30	5	T
6	73.30	5	100.00	2	T

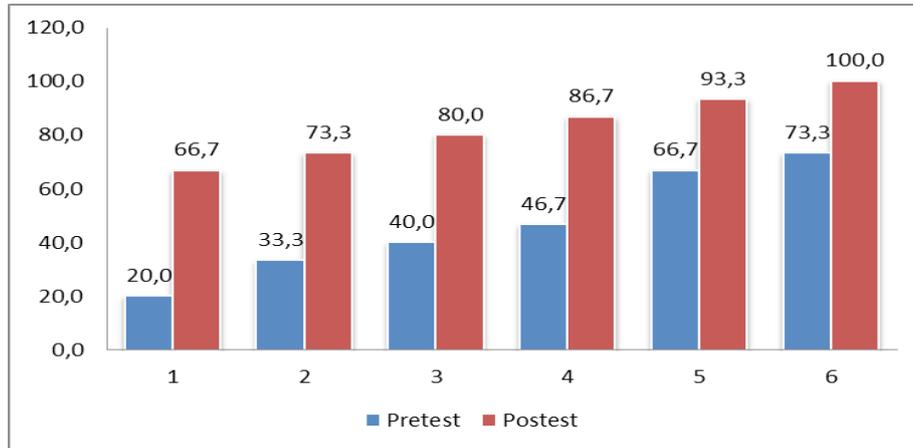


Figure 4. Diagram of Pre Test – Post Test of Large-Scale Test Students

$$g = \frac{S_{Post} - S_{Pretest}}{100\% - S_{Pretest}}$$

$$g = \frac{83,42 - 33,5}{100\% - 33,5}$$

$$g = 0,75$$

The results of the analysis of filling out student response questionnaires by 39 students after using the learning media developed in the classroom were calculated by the formula:

$$PRS = \frac{\sum A}{\sum B} \times 100\%$$

$$PRS = \frac{9,2}{9} \times 100\%$$

$$PRS = 8,1\%$$



The average of all aspects of the assessment items is 85.1% which is good qualitative criteria. The produced teaching media is claimed to be legitimate and practicable for use in education, as well as very practical for students to use in the learning process, based on validator and classroom teacher evaluations, while also ideas and feedback from materials experts, factorial design, media, and teachers include learning success or student learning completeness.

## **CONCLUSIONS**

It is concluded, based on the descriptions and findings collected during the study and development of audio visual based teaching media: the advancement of audiovisual technology based educational materials for social studies at Islamic Elementary School Amaliyah Tanjung Tiga based on the findings, the produced teaching media is claimed to be legitimated and practicable for use in education, as well as very practical for students to use in the learning process, based on validator and classroom teacher evaluations, while also ideas and feedback from materials experts, factorial design, media, and teachers include learning success or student learning completeness.

Based on the above calculations, the observations carried out by material experts at revision I was 79.06 % and after revision II reached 81.52% then revision III 85.13% reached. According to Table 4, If matched with table 1. of eligibility criteria, then this score is included in the very valid or very feasible criteria. The validity level is sufficiently valid that generated 81.9% and has undergone various trial validations procedures in compliance with minor adjustments, from the first validation up to the third validation. This development research resulted in a product that met the content, as well as being effectively used to improve student learning outcomes. including individual mastery learning reached 83.42%, classical learning completeness reached 82.1% with the N-gain percentage reaching 0.75, and getting a positive response from students reached 74.9% with good criteria. Audio-visual-based social studies learning media products are recommended for 1) students, by utilizing audio-visual-based social studies learning media, students can easily understand learning materials, and 2) teachers can use media products as a choice of new learning media by utilizing technology.



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