

Development of Video Media Assisted by Kinemaster Applications on Statistics Materials for Middle School Students

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Abstract: *Learning media such as video is one of the sources of communicative learning for students and supports learning mathematics. During the learning period with various restrictions on direct communication such as today, learning videos with contextual content and narration from the teacher are very much needed by students. Based on a survey in target schools, videos of learning mathematics with such features are not even available. This study aims to produce a mathematics learning video that meets the valid, practical and effective requirements specifically for teaching junior high school statistics. The research method used is Development Research with the ADDIE model. The research was conducted at SMP Negeri 3 Sang Kuniang in Bolaang Mongondow Regency. After the first two stages of the ADDIE model, an initial draft of Video was obtained and in three validation cycles a valid product was obtained. Furthermore, in the third stage to the fifth stage of the ADDIE model, a cyclical trial was conducted to obtain practicality data and effectiveness data. The activity in the trial was the learning of Statistics material using available learning tools by making adjustments to activities that included the use of videos that were being developed. The instruments used are validation instruments, observation formats, learning outcomes tests and student response questionnaires. After doing three trials, a practical and effective learning video was produced.*

Keywords: learning videos, development research, ADDIE model, valid criteria, practical criteria, effective criteria

1. Preliminary

The development of the times has demands for the government and educators that are required to improve the quality of the education. The government's efforts to improve the quality of education are in terms of the curriculum, the provision of educational facilities and infrastructure and the training of educators. From the teacher's point of view, to achieve learning objectives, especially mathematics, a strategy from the teacher is needed as a means to support mathematics learning activities. The strategy of the teacher in improving good learning starts from choosing a learning model that is in accordance with the material being taught, choosing the right learning method in the ongoing learning process in the classroom, specifically being able to provide learning videos according to the conditions and material being taught. With the development of science and technology, the use of educational media, especially video media, has become an urgent demand. This is due to the complex nature of learning. There are various learning objectives that are difficult to achieve only by relying on teacher explanations. Therefore, in order for learning to achieve maximum results, it is necessary to use media, one of which is video media. Video is a series of motion pictures accompanied by sound that forms a unit that is assembled into a plot, with messages in it for the achievement of learning objectives that are stored with the storage process on tape or disk media (Arsyad, 2004: 36 in Rusman et al. 2011: 218). Video is an audio-visual media that displays motion (Sadiman, 2008:74). Learning video is a media that is systematically designed by referring to the applicable curriculum and in its development applying learning principles so that the program allows

students to examine the subject matter more easily and interestingly. Physically, learning videos are learning programs packaged in video cassettes and presented using VTR equipment or VCD players and TV monitors. The advantages of video in learning are revealed by Hamzah B. Uno & Nina Lamatenggo (2011) which states that learning videos have several advantages, namely videos can manipulate time and space, students can be invited to travel anywhere even though they are limited by classrooms. Videos can also show objects that are too small, too big, dangerous, or even impossible for students to visit. The ability of video media can also be relied on in the field of study that learns motor skills and trains activity skills. According to Hafizatul (2020) explained that KineMaster is a full-featured and professional video editing application for IOS and Android devices. Kinemaster is one of the most professional video editing programs that can be used. Kinemaster is an application that functions as a video and audio editor that really helps users in editing or designing video and audio that is concurrently combined into a single unit in order to produce a high-quality video design, both short-duration videos and long-duration videos. In addition, KineMaster videos can be directly shared to social media platforms such as YouTube, WhatsApp, Facebook, Google+, and many more. This makes it easy, especially for teachers, to publish their videos and reach students. The learning process will be more encouraging so that it affects the increase in student interest in learning. Media from an educational perspective is a very strategic instrument in determining the success of the teaching and learning process. It supports multiple layers of video, audio, images, text, and effects along with various tools that allow teachers to create high-quality videos. The subject matter is designed as attractive as possible, can display videos, as well as

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animated images related to the subject matter so that students focus more on what is conveyed by the teacher. Research conducted by Rahmatulla, Inanna and Andi Tenri Ampa with the research title "Audio Visual Learning Media Based on the Kinemaster Application" in 2020. Based on the results of this study using audio-visual-based learning media using the Kinemaster application, a score of 82.28 percent was obtained with the criteria very worthy. The results of student responses were limited to a score of 86.73 percent with very decent criteria. In this case, it shows that audio-visual-based learning using the Kinemaster application is feasible to use in pilot schools. Based on the results of student achievement shows an increase.

In learning statistics, many students do not understand how to process and present data in various forms of tables and diagrams. This fact shows that learning mathematics in schools still has many weaknesses in the teaching and learning process and also from the students themselves. In connection with the statement put forward by Hasratudin (2002) in Jumaisyaroh, said that the weaknesses of learning mathematics carried out by teachers in schools are: (1) the low ability of teachers to use varied learning methods, (2) the ability to teach teachers is only limited to answering questions, (3) teachers are reluctant to change teaching methods that are already considered correct and effective, and (4) teachers only use learning methods without paying attention to students' thinking aspects.

2. Research Procedure

The focus of the research is the development of learning videos that meet the valid, practical and effective requirements for teaching mathematics, especially statistics. To obtain these products, a development research using the ADDIE model was carried out (Branch, 2009). This research model consists of 5 stages, namely Analyze, Design, Develop, Implement, and Evaluate. At the end of the first two stages, namely the Analyze and Design stage, the initial prototype product is targeted to be realized. The product is

then assessed by the validators. If the valid criteria have been met, then proceed with field trials to obtain practicality and effectiveness data. Validation and testing activities are part of the Develop, Implement, and Evaluate stages which are carried out in cycles. The number of cycles carried out depends on the achievement of the decision criteria, namely the practical and effective criteria achieved (Nieveen, 1999) at each stage, with the direction of development shown in Figure-1

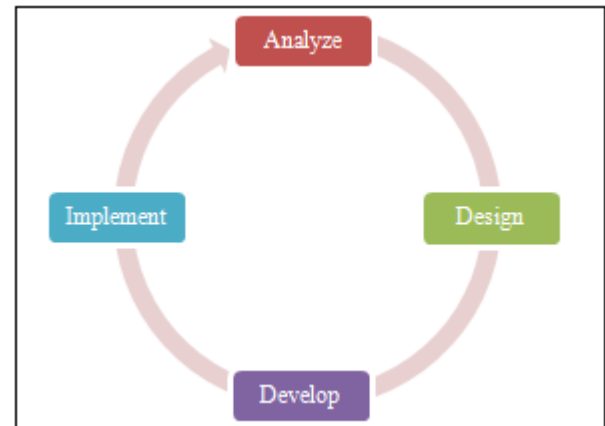


Figure 1: Tahapan model pengembangan model ADDIE (Branch, 2009)

Field trials for learning videos were carried out as part of learning activities in accordance with the Learning Implementation Plans available to teach mathematics, especially SMP Statistics material.

3. Results and Discussion

Through the Analyze and Design stages, 3 (three) Learning Video designs have been obtained and one of the designs is shown in Table 1.



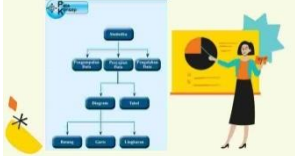
Table 1: Draf produk video pembelajaran 1


| URUTAN KEGIATAN | TEKS/DUBBING SUARA | LATAR/GAMBAR MEZO ZOOM/ZOOM | DURASI WAKTU | KETERANGAN |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------|
| Pengenalan sekolah dan data diri | <ul style="list-style-type: none"> Tulisan Teks SMPN 3 Sang Tombolang Kelas VII Tulisan Teks Penyajian Data (Statistika) Rekam suara penjelasan dan perkenalan Musik pelan | <ul style="list-style-type: none"> Papan nama sekolah Suasana kelas VII yang sedang belajar | 1 menit | Pengambilan gambar dan video pada siang hari sehingga gambarnya hidup, cerah dan terang |
| Menyampaikan tujuan pembelajaran | <ul style="list-style-type: none"> Rekam suara yang membacakan tujuan pembelajaran Tulisan Teks tujuan pembelajaran Musik pelan | <ul style="list-style-type: none"> Background papan tulis Mezzo zoom tulisan teks tujuan pembelajaran | 1 menit | Tulisan di highligh biar terfokus dengan Bold kapital yang menyolok |
| Mengenalkan Pengertian data | <ul style="list-style-type: none"> Rekam suara yang membacakan pengertian data Tulisan Teks materi Musik pelan | <ul style="list-style-type: none"> Background papan tulis Mezzo zoom tulisan teks tujuan pembelajaran | 10 detik | Tulisan di highligh biar terfokus dengan Bold kapital yang menyolok dengan dibarengi suara rekaman penjelasan |

| | | | | |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------|
| Penjelasan dan contoh 3 cara mengumpulkan data | <ul style="list-style-type: none"> • Rekam suara yang membacakan penjelasan dan contoh • Tulisan Teks materi • Musik pelan | Latar : <ul style="list-style-type: none"> • Gambar/video sedang wawancara • Gambar/video mengisi angket • Gambar/video observasi • Tulisan zoom | 2 menit | Sumber gambar/video lewat kinemaster/Youtube tulisan jelas disertai suara rekaman video |
| Pengenalan contoh cara memperoleh data primer dan data sekunder | <ul style="list-style-type: none"> • Rekam suara yang membacakan cara memperoleh data primer dan sekunder • Tulisan Teks materi • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan data • Tulisan mezzo zoom | 1 Menit | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Pertanyaan tentang pengumpulan dan perolehan data | <ul style="list-style-type: none"> • rekam suara yang membacakan pertanyaan • Tulisan Teks pertanyaan • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan materi • Tulisan mezzo zoom | 15 detik | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Jawaban Pertanyaan mengenai pengumpulan dan perolehan data | <ul style="list-style-type: none"> • rekam suara yang membacakan jawaban • Tulisan Teks jawaban • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan materi • Tulisan mezzo zoom | 30 detik | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Pengenalan cara penyajian data dalam bentuk tabel(daftar) dan grafik (diagram) | <ul style="list-style-type: none"> • rekam suara yang membacakan pengenalan cara penyajian data • Tulisan Teks materi • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan materi • Tulisan mezzo zoom | 20 detik | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Penyajian data dengan tabel | <ul style="list-style-type: none"> • rekam suara yang membacakan penyajian data dengan tabel • Tulisan Teks materi • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan materi • Tulisan mezzo zoom | 1 Menit | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Soal Latihan nomor 1 dan 2 halaman 308 | <ul style="list-style-type: none"> • rekam suara yang membacakan soal latihan • Tulisan Teks soal • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan materi • Tulisan mezzo zoom | 5 menit | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman video |
| Tutup – ucapan terima kasih | <ul style="list-style-type: none"> • rekam suara penutup • Tulisan Teks terima kasih • Musik pelan | <ul style="list-style-type: none"> • Latar video yang berhubungan dengan penutup • Tulisan mezzo zoom | 30 detik | Sumber gambar/video lewat kinemaster /Youtube tulisan jelas disertai suara rekaman terima kasih |
| Durasi | | | 12 menit 45 detik | |

Berdasarkan rancangan tersebut maka dibuat synopsis video seperti tampak pada **Table 2**.

Table 2: Synopsis pembuatan video pembelajaran materi Statistika (sebagai contoh)

| Scene | Board | Urutan Kegiatan | Naskah | WAKTU | EFEK/SOUND |
|-------|-------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------|
| 1 |  | Pengenalan diri | <ul style="list-style-type: none"> • Tulisan Teks Video pembelajaran matematika • Rekam suara penjelasan dan perkenalan • Musik pelan | 12 detik | Breathe / Nature |
| 2 |  | Menyampaikan Sub Materi | <ul style="list-style-type: none"> • Rekam suara yang menjelaskan sub materi • Tulisan Teks tujuan pembelajaran • Musik pelan | 18 detik | Breathe / Farewell |
| 3 |  | Menyampaikan Peta Konsep | <ul style="list-style-type: none"> • Rekam suara yang menjelaskan Peta Konsep • Musik pelan | 40 detik | Breathe / Farewell |

| | | | | | |
|---|-----------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------|--------------------|
| 4 |  | Menyampaikan Tujuan Sub Materi Pembelajaran | <ul style="list-style-type: none"> • Rekam suara yang menjelaskan tujuan Sub materi • Musik pelan | 28 detik | Breathe / Farewell |
|---|-----------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------|--------------------|

Selanjutnya dipaparkan hasil validasi terakhir dan uji coba terakhir untuk memberi gambaran pencapaian kriteria kevalidan, kepraktisan dan keefektivan perangkat yang dikembangkan.

Table 3: Hasil Validasi Produk Video Oleh Ahli Media

| Nomor item | Skor dari Ahli Media | | | Jumlah |
|-------------|----------------------|--------|--------|--------|
| | Ahli 1 | Ahli 2 | Ahli 3 | |
| 1 | 4 | 4 | 5 | 13 |
| 2 | 5 | 5 | 5 | 15 |
| 3 | 4 | 5 | 5 | 14 |
| 4 | 5 | 5 | 5 | 15 |
| 5 | 5 | 4 | 4 | 13 |
| 6 | 5 | 4 | 4 | 13 |
| 7 | 5 | 5 | 5 | 15 |
| 8 | 5 | 5 | 5 | 15 |
| 9 | 5 | 4 | 4 | 13 |
| 10 | 5 | 5 | 5 | 15 |
| 11 | 5 | 5 | 5 | 15 |
| 12 | 5 | 5 | 5 | 15 |
| 13 | 4 | 4 | 4 | 12 |
| Jumlah Skor | 62 | 60 | 61 | 183 |

The total score is 183 out of a maximum score of 195, so that from the expert's assessment, video products are categorized as very valid or very feasible to use with a percentage of 93.85% (very feasible).

Table 4: Hasil Validasi Produk Video Oleh Ahli Materi

| Nomor item | Skor dari Ahli Media | | | Jumlah |
|-------------|----------------------|--------|--------|--------|
| | Ahli 1 | Ahli 2 | Ahli 3 | |
| 1 | 5 | 4 | 4 | 13 |
| 2 | 5 | 4 | 4 | 13 |
| 3 | 4 | 4 | 4 | 12 |
| 4 | 4 | 4 | 4 | 12 |
| 5 | 4 | 4 | 4 | 12 |
| 6 | 4 | 4 | 4 | 12 |
| 7 | 4 | 4 | 4 | 12 |
| 8 | 5 | 5 | 5 | 15 |
| 9 | 5 | 5 | 5 | 15 |
| Jumlah Skor | 40 | 38 | 38 | 116 |

The total score is 116 out of a maximum score of 135, so from the expert assessment of video product material it is in the very valid category or very feasible to use with a percentage of 85.93% (very feasible).

After the video product was revised, the researcher tested the learning video on a small scale, namely on 3 students. After the students saw the video product, the researcher distributed a questionnaire on the practicality of the video product and the results were as follows:

Table 5: Hasil respon kepraktisan siswa pada uji Coba Kelompok Kecil (Skala kecil)

| Nomor item | Respon Siswa | | | Jumlah |
|-------------|--------------|--------|------|--------|
| | Veronika | Saskia | Aira | |
| 1 | 3 | 3 | 3 | 9 |
| 2 | 4 | 3 | 3 | 10 |
| 3 | 3 | 3 | 4 | 10 |
| 4 | 3 | 3 | 3 | 9 |
| 5 | 3 | 3 | 3 | 9 |
| 6 | 3 | 3 | 3 | 9 |
| 7 | 4 | 3 | 3 | 10 |
| 8 | 4 | 3 | 3 | 10 |
| 9 | 3 | 3 | 3 | 9 |
| 10 | 3 | 3 | 3 | 9 |
| Jumlah Skor | 33 | 30 | 31 | 94 |

The total score of the results is 94, so the results of the video media practicality response questionnaire on a small-scale trial fall into the practical category for use with a percentage of 78.33% (practical). And when collecting the questionnaire instrument there was no impractical response from the three students so there was no need for revision of media products.

4. Conclusions and Suggestions

From research on the development of kinemaster-assisted learning video products for data presentation materials at SMPN 3 Sang Kunciang, it can be concluded as follows: In the first stage, the researcher conducted product analysis, curriculum analysis, and needs analysis. Then in the second stage, the researcher designs a video product, starting from making an initial draft and then making an initial learning video. After that, in the third stage, the researcher developed the product by providing learning video products to be validated by 3 material experts and 3 media experts with the following validation results. The total score from the media expert is 183 points, so from the media expert's assessment the video product is in the very valid category or very feasible to use with a percentage of 93.85% (very feasible). Meanwhile, the total score from the material expert is 116 points, so from the assessment of the material expert the video product is in the very valid category or very feasible to use with a percentage of 85.93% (very feasible). After that, the researcher made a small revision to the learning video product because there were several inputs and revisions from media experts and material experts. After being revised the product was tested in small groups with the results of student responses to practicality with a total score of 94, so that the results of the video media practicality response questionnaire in small-scale trials entered the practical category for use with a percentage of 78.33% (practical). And when collecting the questionnaire instrument there was no impractical response from the three students so there was no need for revision of media products. Before entering the fourth stage, the researcher gave pretest questions to 20 students to measure initial abilities. In the fourth stage, the

researcher implemented by testing the learning video product in large groups of 20 students and the results of the product practicality response with a total score of 692, so that the results of the video media practicality response questionnaire in large-scale trials were included in the very practical category to use with a percentage of 86, 50% (very practical). Then in the fifth stage, the researcher evaluates by giving posttest questions. At this stage the researcher analyzed the comparison of student learning outcomes at the time of pretest and posttest and firstly there was an increase in the number of student learning outcomes at the time of pretest, the total value of 1100 increased to 1655 at the time of posttest. There was an increase of 555 points. Second, there was an increase in the average value of student learning outcomes at the pretest with an average score of 55 (55%) increasing to 82.75 (83%) at the posttest. There was an increase of 27.75 points (28%). And thirdly, there was an increase in the mastery of student learning outcomes at the time of the pretest with the completeness of 1 student (5%) increasing to as many as 19 students (95%) at the time of the posttest. There was an increase in completeness as many as 18 students (90%). From the five stages that have been concluded above, it can be concluded that the final conclusion is that the kinemaster-assisted data presentation learning video product at SMPN 3 Sang Kunciang is valid, practical and effective. My suggestion as a researcher is that learning video products still need to be developed again and must be developed to make learning videos on other materials.

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