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Development of Electronic Flipbook Realistic Mathematics Education of Youtube-based to Increase Student Attractiveness

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Abstract. The lack of use of learning media in learning makes students less enthusiastic about participating in learning. In learning, students also need learning media that can help them understand the material repeatedly so it is necessary to develop learning media such as interactive *flipbook* electronic teaching materials based on YouTube. This study aims to produce interactive *flipbook* electronic teaching materials based on SPLDV class VIII material that has been tested for validity and reliability. This research is development research using the ADDIE model. The subjects in this study were: 2 material experts, 2 media experts, and 30 student responses. The data collection method uses an instrument in the form of *a rating scale* with an assessment sheet for the validity of interactive flipbook electronic teaching materials based on SPLDV material. The data analysis techniques used are qualitative analysis and quantitative analysis. The data is analyzed using the mean formula to obtain the average of the scores. The research results obtained are interactive *flipbook* electronic teaching materials based on youtube SPLDV material received an assessment of 85.50% from media experts, 85.83% from material experts, and 85.73% from users or students. So it can be concluded that the interactive *flipbook* electronic teaching material based on Youtube SPLDV material is very feasible in MTs Kun Karima.

Keywords: Interactive flipbook, Realistic Math Dedication, Student Appeal.

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INTRODUCTION

Technological advances have forced the world of education to advance to keep up with the development of information in this era. *Youtube* social media is also used as a means in education, where we display videos related to the material. This is in line with Itiarani's research (2019) through learning media using *Youtube*, students can understand a material faster than learning through textbooks because usually learning media is made interesting, so students will not feel saturated.

Based on *a survey* conducted by YouTube, *YouTube* already has more than 1 billion users, which means almost a third of all internet users. Users aged 18-34 and over 70% of their video watch time on *YouTube* comes from mobile devices. 1 billion hours of content are watched every day. Based on the results of the study, viewers in Indonesia spend an average of 59 minutes every day on *YouTube*. According to the results of the study, 92% of Indonesian internet users stated that *YouTube* is their first destination when searching for videos. In terms of audience quantity, *YouTube* has rivaled television as the most frequently accessed media tool by Indonesians. Of the 1,500 respondents involved in the study, 53% stated accessing *YouTu* every day, and 57% stated watching television every day (Setiadi, 2019:314).

But in reality, when teachers carry out face-to-face learning, they only use teacher books and student books with the lecture method (Pamungkas et al., 2020; Sari et al., 2018). Likewise, teachers who carry out learning in the classroom do not use learning media that can support the course of learning (Fitra et al., 2020; Shah & Tasrif, 2021). This is the same as the results obtained in the observation results where in learning the teacher only gives the material in the student's book to the students to be learned independently by the students. If this is not corrected, it will have an impact on students. Students will feel unmotivated in following learning caused by monotonous learning (Adam et al., 2020; Speech & Conilie, 2020). In addition, students will have difficulty understanding the material provided by the teacher because it is not explained directly by

the teacher. This problem is supported by data on student learning outcomes. The following is a diagram of the completion of the learning outcomes of MTs class VIII Kun Karima.

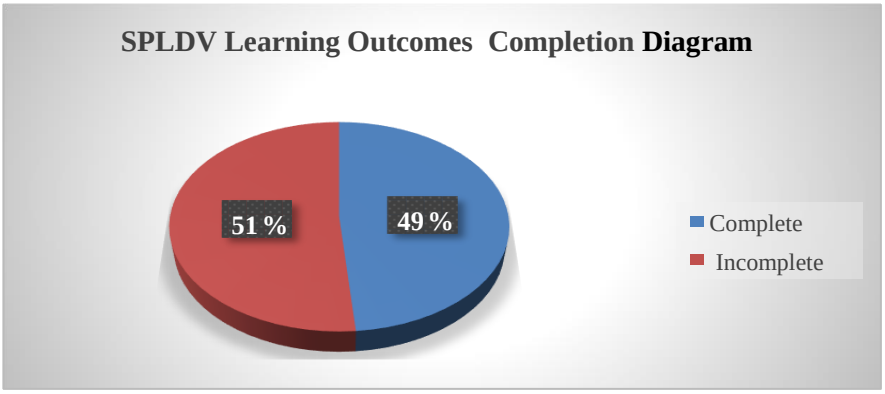


Figure 1. Learning outcomes Completion Diagram

Regarding the existence of these problems, the solution that can be taken for these problems is to use learning media that are to student characteristics, can help students understand the material, and can be used in learning (Rahmawati et al., 2021).

One of the learning media that can be developed is learning media such as interactive learning media *flipbooks* of electronic teaching materials that can increase student learning motivation and help students in understanding the material in the learning. According to Rusnilawati and Gustiana (2017: 191), the use of *flipbooks* helps teachers present more interesting electronic teaching materials. Because *flipbooks* can present images, videos, writings, animations, and some of them. According to Wibowo and Pratiwi (2018: 149), *flipbooks* can make an interactive learning medium because there are moving animations, videos, audio, and so on so learning becomes more interesting and not monotonous.

Video is one of the learning media that display motion, images, sound, and text packaged in a short, concise and clear manner (Purwanto & Rizki, 2015; Warju et al., 2020). Video displays sound that comes with material packaged in the form of text and images that sometimes don't move. Previously developed learning videos can be stated that learning video media is valid and suitable for use in learning (Anugerah et al., 2020) and can increase students' interest in learning (Yuanta, 2020).

In addition to learning videos, it will be more meaningful if learning is related to daily life. Meaningful learning for students is carried out with contextual learning or involves realistic problems known to students (Fadiah, et al. 2021). In addition, according to Freudenthal, science will be meaningful to the learner if the learning process involves realistic problems (Faridah H, 2016). Students will find it easier to apply mathematics if they learn from everyday experiences (Mustamin, 2017). One learning approach that emphasizes the meaningfulness of science is *Realistic Mathematics Education* (RME). This RME approach uses contextual problems as the first step in the learning process (Nolaputra et al., 2018). The RME approach will be more meaningful if mathematics learning begins with the provision of contextual problems (Junaedi, et al., 2015). This approach leads students from concrete situations and uses the real world to develop mathematical concepts (Purwanti et al, 2018). Through a realistic approach, students will be given problems or problems that come from students' daily experiences or things that students can imagine related to a system of linear equations of two variables so that students are easier understand the material being taught.

In this development research, RME teaching material media will be facilitated with learning videos will be developed based on the Youtube application. The selection of the base is intended because of the problem of students who are not able to understand the subject matter only once seeing or listening (Kim, 2020; Widodo et al., 2020). With the youtube application base, it is hoped that it can help students in understanding the material that is taught repeatedly whenever students are interested in understanding the material (Dyah Kusuma et al., 2018; Udjaja et al., 2018). This study implies that Youtube-based RME teaching materials for SPLDV materials can help achieve the learning process

and can be accessed anywhere and anytime. In addition, the development of YouTube-assisted learning videos on SPLDV increases the attractiveness and enthusiasm of students in learning both in receiving and understanding learning materials, because the learning videos contain material in the form of text, images, sounds, animations, music, and videos in learning videos. The existence of Youtube-based RME teaching materials on SPLDV material can motivate students in learning so that learning objectives can be implemented and have a good effect on learning outcomes.

METHOD

This study used the ADDIE model. The stages of research with the ADDIE model consist of *analysis*, *design*, *development*, *implementation*, and *evaluation* (Widodo, 2018).

The subject of this study was a student of class VIII MTs Kun Karima Rangkasbitung. While the object of this study is Interactive Learning Media in the form of Youtube-based RME teaching materials. The subjects in this study were several experts, namely 2 material expert lecturers, 2 media expert lecturers, and 30 MTs Kun Karimma Rangkasbitung class VIII students. The material expert is a lecturer at the Faculty of Education STKIP La Tansa Mashiro who has competence in the field of algebraic material. Media experts are lecturers at the Faculty of Education STKIP La Tansa Mashiro who have competence in the field of learning media. The teacher as a practitioner is a guru class VIII MTs Kun Karimma Rangkasbitung with strata 1.

The test procedure in this study is *Alpha* Testing, which is a validation test by media experts, validation tests by material experts, instrument grain trials in the form of instrument grain validity tests and instrument reliability tests, then *Beta Testing* tests, namely product use tests. Data collection techniques using questionnaires. Questionnaires applied for both field trials and product quality tests using a closed questionnaire model or in other words have been given answer choices for respondents to choose from.

RESULTS AND DISCUSSION

This research data was obtained from the results of filling out a set of instruments in the form of questionnaires/questionnaires given to two media experts, two material experts, and some respondents or students to assess the feasibility results of the interactive learning media developed. The 5 stages of the ADDIE model are analysis, design, development, implementation, and evaluation. However, due to time constraints, situations, and conditions, the implementation and evaluation stages were not implemented.

The analysis stage in this study includes needs analysis, curriculum analysis, and student character analysis. a) The needs analysis stage aims to find out the extent to which class VIII mathematics learning in MTs KunKarima is carried out. At this stage, the researcher conducts interviews with mathematics teachers and students. b) At the stage of curriculum analysis and student karakater analysis, researchers analyze various curriculum tools applicable in MTs KunKarima. The analysis aims to formulate learning indicators and objectives based on the core competencies and basic competencies applicable to MTs KunKarima.

In the design stage, the researcher made a learning video design consisting of opening, core, and closing. In the designed learning video, there are 3 different types of background music. On the first slide with Natalie Taylor-Surrender's background music (lyrics), then on the next slide, and so on with Ikson-Alive (Official) and Ikson-Fresh (Official) music in turn. The design of the learning video media developed is shown in figure 2.

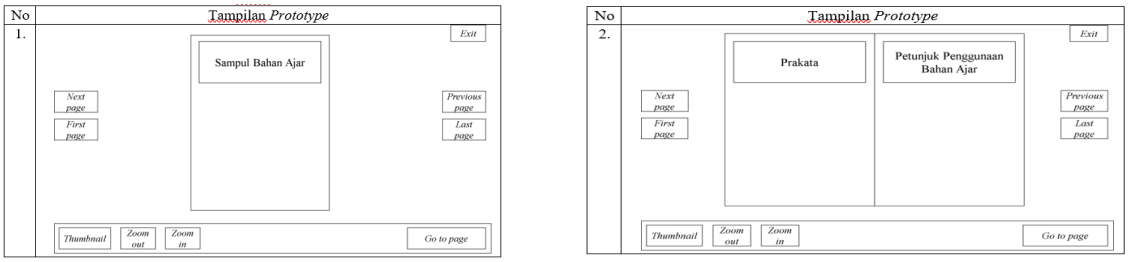


Figure 2. Prototype of Youtube-Based Interactive Flipbook Electronic Teaching Materials

Development stage. At this stage, product development is carried out, namely PMRI electronic *flipbook* teaching materials based on Youtube SPLDV material. The development of

youtube-based electronic *flipbook* PMRI teaching materials is carried out following the product design that has been approved by the supervisor. The results of the product development that has been carried out are presented in figure 2.

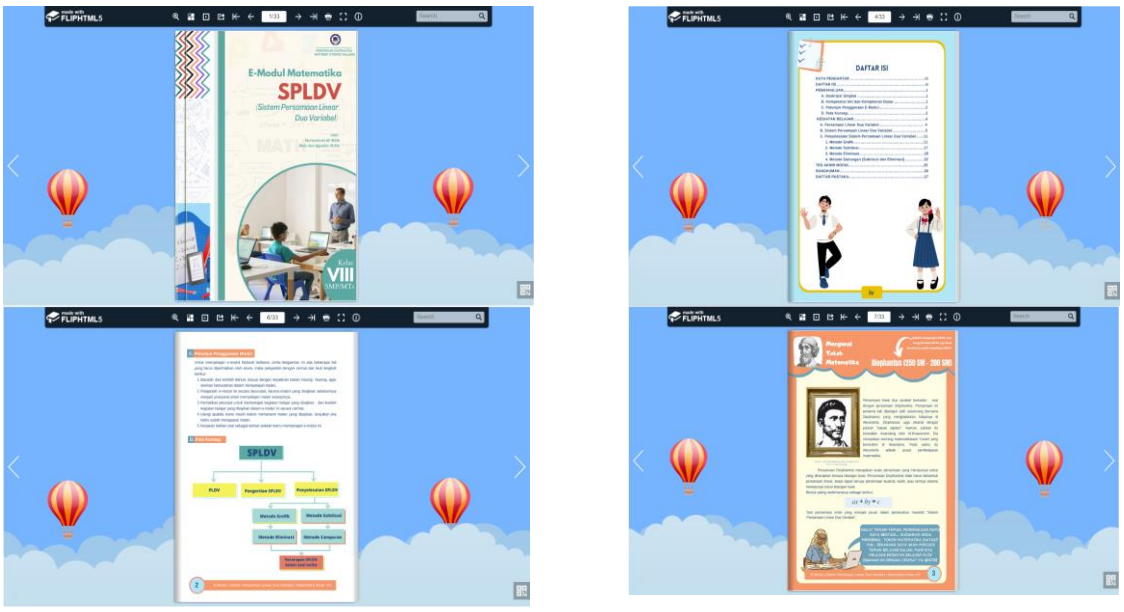
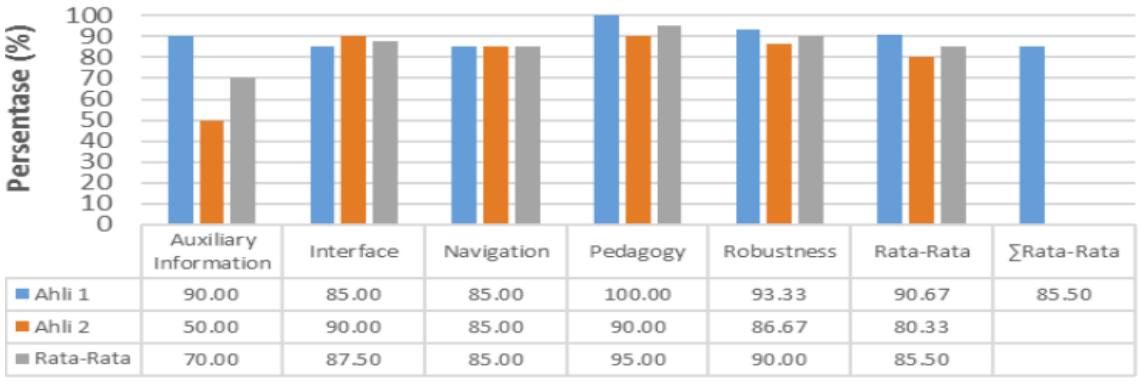


Figure 3. Results of Product Development of Youtube-Based Interactive Flipbook Electronic Teaching Materials

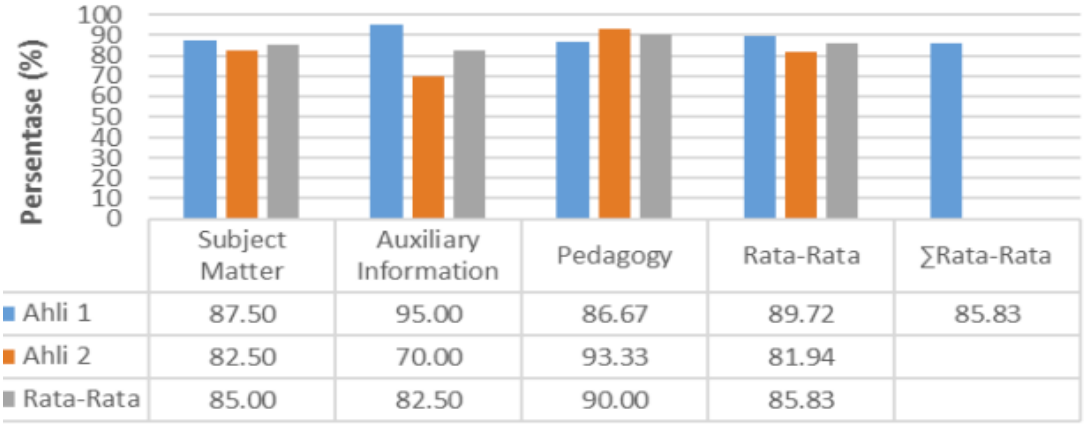
The average score obtained from the feasibility of RME teaching materials for interactive flipbook-based RME teaching materials is as follows:



	Auxiliary Information	Interface	Navigation	Pedagogy	Robustness	Rata-Rata	∑Rata-Rata
Ahli 1	90.00	85.00	85.00	100.00	93.33	90.67	85.50
Ahli 2	50.00	90.00	85.00	90.00	86.67	80.33	
Rata-Rata	70.00	87.50	85.00	95.00	90.00	85.50	

Figure 4. Media Expert Percentage Bar Chart

Figure 4 shows that the percentage of eligibility in terms of the *Auxiliary Information* aspect of the two experts obtained an average score of 70.00%. Based on the interface aspect, it obtained an average of 87.50% of data. The Navigation aspect obtained an average of 85.00% data. The *Pedagogy* aspect obtained an average data of 95.00%. The *Robustness* aspect obtained an average data of 90.00%. The total percentage of all aspects obtained from the two experts is 85.50%, so it can be concluded that the youtube-based electronic flipbook RME teaching materials SPLDV material is categorized as very feasible to use. The results of the validation test by the material expert are in the form of responses and assessments from the material experts, then from the results of the data obtained, they are analyzed and revised the product according to the suggestions. The results of such data are shown in Figure 5.



	Subject Matter	Auxiliary Information	Pedagogy	Rata-Rata	∑Rata-Rata
Ahli 1	87.50	95.00	86.67	89.72	85.83
Ahli 2	82.50	70.00	93.33	81.94	
Rata-Rata	85.00	82.50	90.00	85.83	

Figure 5. Material Expert Percentage Bar Chart

Figure 5 shows that the percentage of eligibility in terms of subject *matter* aspects of the two experts obtained an average score of 85.00%. Based on the aspect of *Auxiliary Information*, the average data obtained was 82.50%. The *Pedagogy* aspect obtained an average of 90.00% data. The total percentage of all aspects obtained from the two experts is 85.83%, so it can be concluded that the youtube-based electronic *flipbook* RME teaching materials SPLDV material is categorized as very feasible to use. Reliability testing by using tests internally. Reliability testing with internal *consistency*. Here's the *Alpha* formula used for reliability tests.

$$r_{11} = \left[\frac{k}{k-1}\right]\left[1 - \frac{\sum \sigma_b^2}{V_t^2}\right] == \quad 0{,}882\left[\frac{30}{30-1}\right]\left[1 - \frac{9{,}45}{64{,}32}\right]$$

So from the calculation result of 0.882 based on the inter-performance table of r values, the reliability of the instrument is included in the high category, so the instrument can be trusted when used for usage tests. The usage test was carried out at MTs Kun Karima Rangkasbitung by 30 class VIII students. The instruments used include six aspects, namely aspects of *Auxiliary Information, Affective Consideration, Interface, Navigation, Pedagogy, and Robustness*. Instruments that are already valid and reliable are used for user tests. Here are the results of the user test.

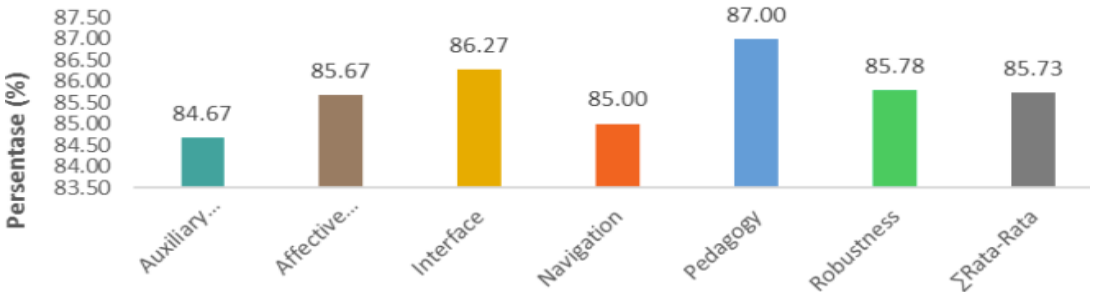


Figure 6. Feasibility Test Results

Figure 6 shows that the percentage of eligibility in terms of *Auxiliary Information* obtained an average score of 84.67%. Based on the aspect of *Affective Consideration*, the average data obtained was 85.67%. The *Interface* aspect obtained an average of 86.27% of the data. The Navigation aspect obtained an average of 85.00% data. The *Pedagogy* aspect obtained an average of 87.00% data. The *Robustness* aspect obtained an average data of 85.78%. The total percentage of all aspects obtained from the assessment of respondents or users is 85.73%, so it can be concluded that the interactive learning teaching materials of Youtube-assisted RME on SPLDV materials are categorized as very feasible to be used for learning in MTs Kun Karima.

Based on the results that have been obtained, it is relevant to the research that has been carried out previously regarding the media of interactive learning teaching materials for RME assisted by Youtube on SPLDV. Research that obtained the results that the interactive learning teaching materials of Youtube assisted RME on SPLDV

developed were declared very suitable for use in the learning process (Suratun et al., 2018). In addition, research that obtained the results that learning video media with animation was declared valid and suitable for use in the learning process (Kafah et al., 2020). Other studies that have obtained results that learning video media developed based on Youtube are declared valid and very suitable for use in learning and subsequent research (Yudela et al., 2020). This study implies that YouTube-assisted learning videos are learning videos that can help achieve the learning process and can be accessed anywhere and anytime. In addition, the development of interactive learning teaching materials RME assisted by Youtube on SPLDV adds to the attractiveness and enthusiasm of students in learning both in receiving and understanding learning materials, because the learning videos contain material in the form of text, images, sounds, animations, music and videos in learning videos. The existence of YouTube-assisted learning videos on SPLDV material can motivate students to learn so that learning objectives can be implemented and have a good effect on learning outcomes.

CONCLUSION

This development research resulted in a youtube-assisted RME interactive learning teaching material product on the SPLDV Class VIII MTs Kun Karima material for the 2022/2023 Academic Year. The products developed have been declared valid and reliable based on the validity and reliability test results of material expert tests, media expert tests, practitioner responses, and student responses. Based on this, rme interactive learning teaching materials assisted by Youtube on SPLDV material are suitable for use in the learning process, especially in SPLDV Class VIII material.

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