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Animation Video Development Problem Based Learning Based on Material Multiplication for Student Class IV at MIS Tanjung Tiga

Riskyka[1], Renni Ramadhani Lubis[2]
[1]Natural Science Education, STKIP Al Maksum, Indonesia, [2] Elementary School Teacher Education, STKIP Al Maksum, Indonesia
Email: [1]yriskyka@gmail.com, [2]renni.ramadhani.rr@gmail.com

ABSTRACT
This study aim for develop animated videos based *problem based learning*. This study is research and development. Development model used i.e. 4D development model, ie *define, design, develop,* and *disseminate*. But this study only completed at stage *develop*. Study held in Mis Tanjung Tiga. Subject study that is student class IV, totaling 17 people, consists of of 11 students boy and 6 students woman. Object in this study namely animated videos based *problem based learning*. Data collection techniques, namely observation, interviews and questionnaires. Based on results from validation that has been carried out by the lecturer expert that is results from the validator ie media expert with percentage 96.68% said very worthy. Validation results expert Language with percentage 92.38% is said to be very feasible. Validation results expert material with percentage 89.75% said worthy. Based on results and discussion before, then can concluded that animated video problem based learning is said to be worthy used in the material for student class IV in Mis Cape Tiga. From the results feasibility of animated videos based *problem based learning* on the material multiplication for student class IV at Mis Tanjung Tiga said worthy for used.
Keywords : Animation Videos, Problem Based Learning, Multiplication

Introduction

This mature is a learning process already walk more good from previously. However, with such is the learning process still must walk with good in the future come. One of factor supporting the learning process can walk with good that is with use of learning media. This matter in line with Lubis & Rambe (2021) said that use of learning media cause student more happy and enthusiastic in follow inside learning class. This matter is also supported by Lubis et al (2023) who said that pleasant atmosphere during learning student will more Spirit in follow inside learning class. Therefore that, teachers must capable in make various type of learning media. In the latest era of learning media no only form method traditional like before, of course require power education for follow in accordance with the development of the times, namely related with technology, where in education a educator besides must superior in convey information. However sued for superior too in using technological media as learning for educators and participants education, for example the internet, applications, software or other hardware (Fadilah et al., 2023). Based on results observations that have been made carried out by researchers in Mis Tanjung Tiga known that student not enough interested for following the learning process, students difficult for understand material explained by the teacher, material multiplication considered difficult by students, teachers only use method lecture of course, teachers lack learning media during the learning process. From the results observations that have been made done, then the solution will be given by the researcher for finish problem the that is with using animated videos. Animation videos is movement picture with different picture for time that has been determined, so creates a sense of movement as well as supportive sound movement picture , for example voice, conversation or dialogue, and sound others (Husni in Asnawati & Sutiah, 2023). In animated videos, material learning delivered through visualization dynamic so that this matter can avoid happen excessive verbalization

in the learning process (Maria, et al., 2019). Learning with using video or animation more succeed Because capable enter through 2 sense sensors man that is through eyes and ears (Apriansyah et al., 2020). Excess animated videos that is combined elements such as audio, text , video, images and sound combined become one so that be an interesting medium for students (Maulida et al., 2019). With use of animated videos can also be supported by one of the learning models. In this study researcher will make product in the form of an animated video based problem based learning. Problem based learning is a learning model that confronts students on real world problems for start learning and is one of the learning models innovative that can be give condition Study active to students (Hotimah, 2020). A number of characteristics of problem based learning include namely : a) students must sensitive to environment learning ; b) the problem simulation used should ill- structured, and fishing invention free (free for inquiry); c) learning integrated in various subject ; d) importance collaboration ; e) learning should grow independence student in solve problem; f) activity solution problem should represents the situation real; g) assessment should reveal progress student in reach objective in solution problem ; h) problem based learning should be is base from curriculum not only learning (Kamil et al., 2019). Based on explanation above, then researcher interested for carry out research entitled "Animated Video Development Problem Based Learning Based on Material Multiplication for Student Class IV at Mis Tanjung Tiga".

Research Methodology

This study is research and development (Research and Development). Method Research and Development (R&D) research is method research used for produce product specific and testing effectiveness method (Okpatrioka, 2023). The *4D* model was developed by Thiagarajan, et.al. (1974) said that own four stage main that is *define, design, develop,* and *disseminate*. But study this only finished developing. This study held in Mis Tanjung Tiga. Study implemented in the month February until April of this year teachings 2023/2024. Subject study that is student class IV, totaling 17 people, consists of of 11 students boy and 6 students woman. Object in this study that is animated videos based problem based learning. Data collection techniques, namely observation, interviews and questionnaires. Analysis of the data used in study that is analysis feasibility of animated videos based problem based learning.

Table 1. Likert Scale Criteria

No	Answer	Score
1	Very good	4
2	Good	3
3	Enough	2
4	No Good	1

(Lubis et all, 2023)

The formula used to measure the percentage of validation results is as follows:

Validation Value = $\frac{jumlah\ skor\ yang\ diperoleh}{jumlah\ skor\ tertinggi}$x 100%

(Pratama et al., 2023)

Table 2. Criteria Due Test Classification Product

No	Score	Classification
1	90% X < 100%	Very Worth It
2	80% X < 90%	Worthy
3	70% X < 80%	Enough Worthy
4	60% X < 70%	No Worthy
5	0% X < 60%	Absolutely No Worthy

(Lubis et all, 2023)

Results and Discussion

This study implemented for student class IV at Mis Tanjung Tiga. Development model used that is *4D* models ie define, design, develop, and disseminate. But this study only finished developing. These following are the stages in study that is as following :

Define

Define aim stage for define and establish terms learning. Define stage consists from analysis curriculum, analysis needs, analysis student. The curriculum used in Mis Tanjung Three that is curriculum independent. Analysis need this focused on students class IV at Mis Tanjung Tiga that is in activity study teaching teachers still using existing learning media pasted on the wall class, lack of teacher 's understanding create learning media digital based . Analysis student seen at the moment observations made by researchers before, students not enough

understand material multiplication, because during this material multiplication considered difficult for students. With development of animated videos based problem based learning can help student for understand material multiplication.

Design

The results have been obtained researchers at the define stage are used as basis at the design stage. In stages this, researcher designing animated videos based problem based learning on the material multiplication. Animated videos based problem based learning is designed so that students more interested and come along active in the learning process.

Develop

Stages furthermore that is stage development. At this stage is an animated video based *problem based learning* has the design has been completed, and will be validated by the lecturer expert that is media expert, expert language and experts material. Under this is results validation that has been carried out by the lecturer expert that is as following :

Table 3. Expert Validation Results

No	Validation	Percentage	Criteria
1	Media Expert	96.68%	Very Worth It
2	Linguist	92.38%	Very Worth It
3	Materials Expert	89.75%	Worthy

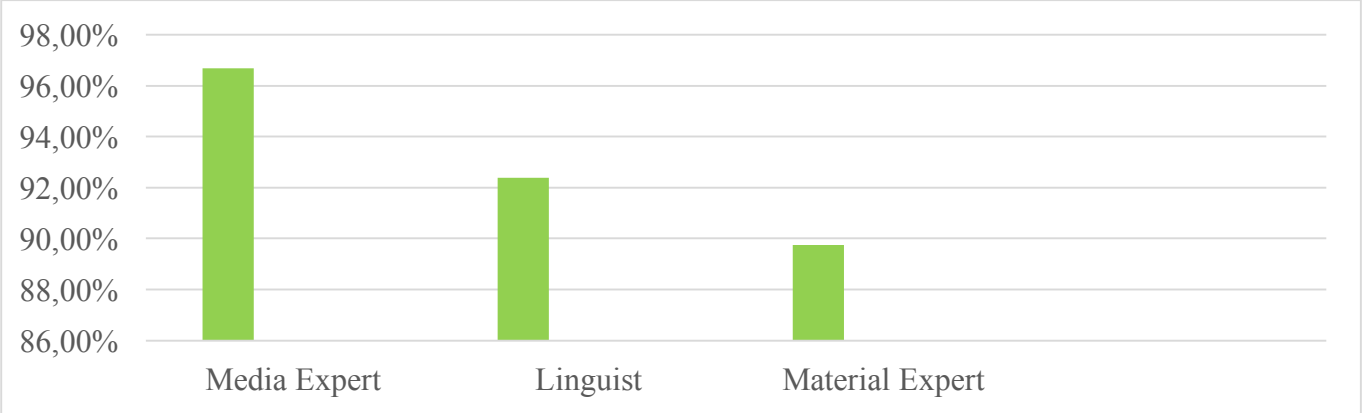

Figure 1. Expert Validation Results

Based on results research that has been carried out by researchers known that products that have been developed in the form of an animated video based problem based learning has validated by the lecturer expert that is media expert, expert language , and expert material. As for the results from the validator ie media expert with percentage 96.68% said very worthy. This matter supported by Parinduri et all (2022) said that media expert with a percentage of 89% is categorized as very feasible. Validation results expert Language with percentage 92.38% is said to be very feasible. This matter supported by Agustiningrum et al (2023) said that results validation Language with percentage of 90% incl Very worthy category. Validation results expert material with percentage 89.75% said worthy. This matter supported by Novianti & Lubis (2023) said that results validation material with percentage 97% incl Very worthy category. Study possible support support results study This among them that is research conducted by Rachmawati et al (2023) said that results media validation get value Aiken gained mark percentage amounting to 80.6% with very practical category. This matter show that the learning media is animated videos powtoon on the material egg stated feasible, very practical, and can be used in DDPK 2 learning material egg. This is also supported by research Maisarah & Ayu (2023) said that results study show that product development in the form of animated video media on the material sound what ? with skills read. Media " *Movie Studio* " in the material sound what ? which was developed proved to be very feasible for used by students 1st grade for elementary school. Tthis study recommend teachers for using animated video media that is *Movie Studio* and also suggests developing appropriate media with characteristics material lesson.

This is also supported by research Susilawati (2023) said results this study show that (1) it is produced on stop motion animation video media results eligibility fill obtained average score 97.3%, validation average score construct 97.14%, right mean language score 90.47%, with very valid category. (2) Assessment results practicality carried out by class II teachers has an average score of 95% with very practical category, (3) The results of the

effectiveness of stop motion animation video media are supported by assessment results Study form question test with the average percentage mark participant students who completed 95% with very effective category. This matter is also supported by Wiratama (2023) who said that results study validation test results expert fill of 90.9% with very worthy qualifications, validation test media experts amounted to 96.42% with Qualification is very worthy, trial group small from 6 respondents get results with very high qualifications, and trials group big of 20 respondents get results with very high qualifications. Instructional Media in the form of an animated video movement current electricity in the circuit 3 phase electric motor controller worthy used in the learning process eye studying electric motors in the electrical engineering education study program Undiksha. Based on results and discussion above , then can concluded that animated video problem based learning is said to be worthy used in the material for student class IV in Mis Tanjung Tiga.

Conclusion

Based on results and discussion of the research this, then researcher conclude that animated video based problem based learning developed by researchers has worthy for used student class IV at Mis Tanjung Tiga. This matter based on results eligibility towards animated videos based problem based learning that has been validated by media experts, experts material and experts Language. As for the results from validation that has been carried out by the lecturer expert that is results from the validator ie media expert with percentage 96.68% said very worthy. Validation results expert language with percentage 92.38% is said to be very feasible. Validation results expert material with percentage 89.75% said worthy. Based on results and Discussion before, then can concluded that animated video problem based learning is said to be worthy used in the material for student class IV in Mis Tanjung Tiga.

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