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The Effectiveness of Virus Material Booklets as Teaching Material Supplements to Increase Students' Interest in Learning

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Abstract

This study aims to test the validity of the Virus Material Booklet as a teaching material supplement and to test the effectiveness of the booklet in increasing the learning interest of class X students. This research is included in R&D research with a 4D model but only up to 3 stages or 3D. This research was conducted at SMA Negeri 1 Tigapanah in class X MIPA 1 and X MIPA 3, which consisted of 30 students and 15 students. Instruments in the form of validation sheets and measurement sheets of increasing student interest in learning. The results of the test of the validity of the virus material booklet are in the valid category to be used as a teaching material supplement, but in terms of increasing interest in learning the booklet has not been effective because the increase in student interest in learning is in the low category.

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INTRODUCTION

The success of learning is influenced by learning methods and supplementary teaching materials. Between these two factors are intertwined, when the teacher chooses a learning method adapted to the supplement of teaching materials to be used. The use of supplementary teaching materials used is the teacher's effort to provide stimulation to students in order to increase willingness to learn. Supplements of teaching materials are also used to overcome material difficulties experienced by students, so that the decrease in achievement caused by material difficulties can be overcome. Achieving educational goals and learning success are the most important things to achieve.

In the virus material there are several sub-materials, namely about the characteristics of the virus, the structure of the virus body, viral replication and the role of viruses that are beneficial and harmful. Several studies reveal that viral material is a material that is classified as difficult to prove by the learning outcomes of some students who do not reach the KKM. This is caused by a virus that cannot be seen directly so that learning takes place relying on imagination which can hinder student learning. Another cause is students who are less active during learning. Activities carried out by students during learning are listening and recording explanations from the teacher so that there is less interaction between teachers and students. Another factor is that the supplementary teaching materials used are less varied so that students are bored in learning. In virus material, students revealed that virus material was less interesting because it was theoretical and difficult to understand because it was abstract.

Based on the results of interviews that have been conducted with Biology subject teachers and several students of class XI, Biology learning is carried out using Whatsapp groups and Google Classroom. Things that support the learning process are also limited. Apart from Biology learning books, teachers use Youtube to improve student learning outcomes. Student responses regarding the use of media in Biology subjects are unsatisfactory because learning Biology by only using books from school and videos from Youtube is less attractive and requires more quota to open videos shared by teachers. Therefore, students need supplementary teaching materials that make it easier for students to digest lessons that do not require a large internet quota so that this virus material booklet is appropriate as a supplement for teaching materials that students will use.

The purpose of this study was to test the validity of the virus material booklet as a teaching material supplement and to test the effectiveness of the viral material booklet in increasing students' interest in learning.

RESEARCH METHOD

This research is included in R&D research with a 4D research model but this research only reached stage 3. The research was conducted at SMA Negeri 1 Tigapanah in class X MIPA 1 and X MIPA 3 with a total of 30 students and 15 students. Methods of data collection using interviews, observations and questionnaires. The research instrument used was a validation sheet and a measurement sheet for increasing student interest in learning. Interviews were conducted with class XI students and Biology subject teachers with the aim of conducting a preliminary study. Validation sheets for material experts, media experts and teachers to determine the validity of virus material booklets and measurement sheets for increasing student interest in learning were carried out aimed at knowing the increase in student interest in learning. Validation sheets for media experts, materials experts and teachers have different points or statements. As for knowing the increase in student interest in learning, questionnaires were distributed at the beginning of learning and at the end of learning to students in class X MIPA 1.

RESULTS AND DISCUSSION

The results of the study regarding the validity of viral material booklets as learning media in class X were included in the valid category. This can be concluded from the results of validation by media experts, material experts and also teachers. The percentage of validation results from material experts is 90.5% which is included in the valid category, the percentage of media expert validation results is 84.4% which is included in the valid category and the percentage of teacher validation results is 100% which is included in the valid category.

The results of the study regarding the increase in student interest in learning can be seen from the measurement sheet for increasing student interest in learning who has participated in learning using booklets. Interest in learning was assessed using the ARCS method. Interest in learning is divided into 4 aspects, namely attention, relevance, confidence and satisfaction. The results of research in increasing interest in learning are as follows.

Table 1. Average Student Assessment Results on the Four Learning Interest Assessment Indicators

No	Interest Category	Average score		Enhancement	Criteria
		Before	After		
1	Attention	3,9	4,1	0,2	Low
2	Relevance	3,8	4,1	0,3	Low
3	Confidence	3,8	4,4	0,6	Low
4	Satisfaction	3,8	4,1	0,3	Low
	Average score	3,5	4,1	0,35	Low

The Validity of Virus Material Booklets as Teaching Material Supplements

The type of supplementary teaching material used in this study was a booklet with virus material. Virus material is studied in class X in the even semester. The booklet used aims to increase student interest in learning as well as to complement the Biology book for class X curriculum 2013. There are several material on viruses in class X, namely, material about the structure of the virus body, how to replicate viruses and the role of viruses in everyday life. In the booklet, this material is presented in an attractive manner which is supported by the provision of pictures, did you know (information to broaden students' insight) tables, and learning video links to broaden students' horizons.

Making virus material booklets based on R&D procedures and tested for the validity of the booklets and the effectiveness of the booklets to increase students' interest in learning. Before being widely tested, the viral material book passed validation tests from material experts, media experts, teacher assessments and assessments. The booklet design validation test was carried out by 1 Biology lecturer as a material expert and 1 Biology lecturer as a media expert. At the booklet design assessment stage, the assessment provides suggestions and input, namely presenting a presentation on the cover of the book, removing the writing "learning media" and the year booklet, providing image citations in the text, placing images that are not neat on page 6, writing inconsistent titles on page 7, improvements to the writing of image sources, improvements to the language used and changes to text procedures into tables. Based on suggestions and improvements by the appraiser, the booklet was revised by adding, subtracting, replacing or deleting the parts in question.

After the booklet was revised, a limited trial was conducted, namely to 1 Biology teacher and 15 MIPA 3 class students. The results of the assessment at this stage provided suggestions and improvements from the teacher, namely the addition of deepening material in the form of videos. Because the supplementary teaching materials used were booklets which did not allow adding videos, the researchers added a Youtube video link to broaden students' insight. Based on 15 students who filled out the Google suggestion and improvement form after participating in learning using the virus material booklet, they stated that the virus material booklet was good enough to be used or there was no need for improvement,

which means the booklet is good enough to be used in a wide trial.

In the broad trial, an assessment was carried out by 1 material expert, 1 media expert, 1 Biology teacher and 1 class X MIPA 1 student totaling 30 people by filling out a questionnaire. The material expert evaluates the filling of the questionnaire with aspects of assessing the feasibility of content components, linguistic components and supporting material presentation. Media experts evaluate the filling of the questionnaire with aspects of the booklet size, the design of the skin/book cover and the design of the viral booklet content. The teacher filled out a questionnaire with aspects of assessing the relevance of the material, media concepts and presentation. Assessment by 33 students of class X MIPA 1 filled out the ARCS questionnaire which aims to determine the increase in student interest in learning after learning to use virus material booklets.

In the media expert assessment questionnaire, the percentage achieved was 84.4% which was classified as valid. In the material expert assessment questionnaire the percentage achieved is 90.5% which is also classified as valid. In the teacher assessment questionnaire the percentage achieved is 100% which is classified as valid. So at this stage the virus material booklet is valid to be used as a supplement for class X teaching materials. Apart from the results of the validation test, the indicators for the validity of the booklet can be seen from the use of virus material booklets by students who are very enthusiastic, there are no signs of boredom when learning to use booklets. The color combination in the booklet is comfortable for students and the size and type of letters do not interfere with students' eyesight.

Virus Material Booklet Effectiveness

The broad trial stage is the stage used to see the increase in interest in learning in class X MIPA 1. This learning refers to the lesson plans that have been discussed with Mrs. Herlina Nainggolan as a Biology teacher. This learning applies the ARCS (Attention, Relevance, Confidence, Satisfaction) model, which is a learning model that has principles in its learning, while these principles are to attract students' attention, connect learning content with student understanding, build student confidence and provide satisfaction to students regarding learning to be followed. These principles are applied to the core activities in the RPP. To see the increase in students' interest in learning, a questionnaire was given to students at the beginning of learning and also at the end of learning.

This learning is carried out online due to the Covid-19 pandemic which does not allow students and researchers to meet face to face when learning is being carried out. Learning begins with preliminary activities such as greeting, praying, delivering material and delivering learning objectives. After that, a questionnaire is given at the beginning of learning or before learning begins to students. Then learning is continued according to the lesson plan, namely the application of ARCS principles.

The researcher attracted students' attention by displaying several pictures of viruses and bacteria that were displayed using PPT, in this section students looked for which pictures of viruses and bacteria were already available in PPT. To connect the content with students' understanding, take advantage of the Covid-19 pandemic situation when collecting data by learning that the material is learning with the Covid-19 pandemic so it is very useful to learn. Followed by building students' self-confidence by providing opportunities to express opinions in class discussions. To obtain student satisfaction, when students express opinions or answers, the researchers give praise to these students. After that, an evaluation was carried out, followed by presenting a student questionnaire at the end of the lesson and closing the submission activities simultaneously and closing in prayer.

The effectiveness of the virus material booklet is measured by the success of increasing student interest in learning. The results of the questionnaires filled out by students at the beginning of learning and at the end of learning were analyzed to see the improvement that occurred. The questionnaire used consists of 27 statement points containing 4 ARCS principles or attention, student understanding relationships, student confidence or confidence and self-satisfaction. The attention aspect consists of 7 points, the relevance aspect consists of 6 points, the confidence aspect consists of 7 points and the satisfaction aspect

consists of 7 points.

In the attention aspect there is an increase of 0.2 which is low, in the relevance aspect there is an increase of 0.3 which is low, in the confidence aspect there is an increase of 0.6 which is low and the satisfaction aspect is an increase of 0.3 which is low.

The confidence aspect is the aspect that has the highest increase compared to the other three aspects, this shows that students' confidence in their abilities or students' self-confidence dominates in learning interest using this virus material booklet. This can be caused by learning that gives a lot of freedom in expressing opinions and also the material used in this booklet, namely virus material which is a matter of concern to the world so that students previously have an understanding of viruses, coupled with learning that opens freedom of opinion for students so that trust students' self-confidence or self-confidence is increasing.

The attention aspect is the aspect that has the lowest increase among other aspects. This is caused by the disruption of the network connection while participating in the learning and also because the benchmarks for each person's interest are different so that it affects the improvement results in this study. Another factor that influences it is the time in filling out the questionnaire after learning which is done in a hurry so that students do not fill out the questionnaire according to the actual situation.

The current state of the pandemic has greatly affected student interest in learning. Online learning makes students feel bored because they stare at screens all day long. Learning online requires a stable network connection and sufficient internet quota to take part in learning. According to research by Yana and Sari (2021) economic factors have an impact on student interest in learning, the economic ability of each parent is different so that it affects student interest in learning because they cannot participate in learning optimally.

Another factor is the use of PPT at the beginning of learning which affects the measurement results of increasing student interest in learning. The statement sentence in the questionnaire measuring the increase in student interest in learning which leans towards the teacher instead of a booklet also affects the measurement results of increasing student interest in learning.

Based on the indicators of interest in learning, this booklet has reached these indicators. Seen at the beginning of sending the Virus Material Booklet, students were enthusiastic when students asked whether the booklet had been sent or not, students used the Virus Material Booklet according to the researcher's instructions, as evidenced by all students being able to answer and give opinions without any differences in the topic of conversation between the things discussed with answers or opinions. requested by the researcher. Likewise with group assignments, all students play an active role, it can be seen from the absence of reports from their respective group leaders and also assignments are collected on time. Booklets are effective in increasing student interest in learning, but because there are several factors that affect the measurement results of increasing student interest in learning in the low category.

CONCLUSION

Based on the validation results from media experts, material experts and teacher assessments, the virus material booklet is valid to be used as a supplement for Biology teaching materials for class X students. teaching is included in the low category.

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