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Application of Kvisoft Maker-Based Flipbook Problem Based Learning (PBL) Model Based on Kinemaster to Improve Capabilities HOTs Literacy for Grade XI Students of SMA Negeri 1 Percut Sei Master Matter Reaction Rate

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Abstract: Application of Kvisoft Maker-Based Flipbook Problem Based Learning (PBL) Model Based on Kinemaster to Improve Capabilities HOTs Literacy For Grade XI Students of SMA Negeri 1 Percut Sei Master Matter Reaction Rate. This research aims to determine the significant differences between HOTs literacy skills after using the PBL model with Kinemaster flipbook media and to find out which aspects of mastery develop through the PBL model and Kinemaster-based media. This research design uses one group pretest posttest. The sample studied was 32 high school students in class 12 Science 4 who were selected using random sampling techniques. The instruments used are multiple choice tests and interviews. The data analysis technique in this research uses the N-Gain value. Based on data analysis techniques, it was found that students' N-Gain had a high criterion, namely 0.7186 (71.86%). Hypothesis testing obtained thit = 2.232 with ttable = 1.697 because t calculated > than t table so that the research hypothesis was accepted. This means that there is a significant difference between students' ability to carry out literacy after using the PBL model with the kvisoft flipbook kinemaster based maker media. The student literacy HOTs skill that developed the most in this research through the PBL model with kvisoft maker-based flipbook media was C4 reasoning with a presentation of 71.96%.
Keywords: Media Flipbook Kvisoft Maker, Kinemaster, PBL, HOTs Literacy

Abstrak: Penerapan Model Problem Based Learning (PBL) Flipbook Kvisoft Maker Berbasis Kinemaster untuk Meningkatkan Kemampuan HOTs Literacy Siswa Kelas XI SMA Negeri 1 Percut Sei Tuan Materi Laju Reaksi. *Penelitian ini bertujuan untuk mengetahui perbedaan yang signifikan antara keterampilan HOTs literasi setelah menggunakan model PBL dengan media flipbook kinemaster dan untuk mengetahui aspek penguasaan mana yang berkembang melalui model PBL dengan media berbasis kinemaster. Desain penelitian ini menggunakan one group pretest posttest. Sampel yang diteliti adalah siswa SMA di kelas 12 IPA 4 sebanyak 32 siswa yang dipilih menggunakan teknik random sampling. Instrumen yang digunakan adalah tes pilihan ganda dan wawancara. Teknik analisis data pada penelitian ini menggunakan nilai N-Gain. Berdasarkan teknik analisis data diperoleh N-Gain siswa memiliki kriteria tinggi yaitu 0,7186 (71,86%). Pengujian hipotesis diperoleh t_{hit} = 2,232 dengan t_{tabel} = 1,697 karena t hitung > dari t tabel sehingga hipotesis penelitian diterima. Artinya terdapat perbedaan yang signifikan antara kemampuan siswa dalam menyelenggarakan literasi setelah menggunakan model PBL dengan media kvisoft flipbook kinemaster based maker. Keterampilan HOTs literasi literasi siswa yang paling banyak berkembang dalam penelitian ini melalui model PBL dengan media flipbook berbasis kvisoft maker adalah C4 penalaran dengan presentasi sebesar 71,96%.*

Kata kunci: *Media Flipbook Kvisoft Maker, Kinemaster, PBL, Literasi HOTs*

▪ INTRODUCTION

Developed countries are countries that have good quality, especially in terms of human resources. One of the factors for the progress of a country can be seen from its education system, because with a good education it is hoped that it can create good and competent human resources as well. According to Law no. 22 SISDIKNAS In 2003 it was emphasized that, one of the goals of national education is to develop potential and be able to make students independent. So that with the potential of students being able to improve education in Indonesia, to support future development by solving problems. The development of the 21st Century is marked by paradigm shifts and changes in various aspects of life that are closely related to the use of digital technology, including in the world of education. On that basis, education must have the courage to appear and be ready to face the demands of life skills in the 21st century in order to be able to survive in the midst of globalization and to be able to compete on a global scale to create superior and quality human resources (Nurdin et al., 2022).

Based on interviews conducted with teachers of SMA Negeri 1 Percut Sei Tuan said that in teaching and learning activities there were several obstacles, including: 1) Learning was not conducive because the teacher only used the lecture method; 2) The media used by the teacher has not varied, the teacher only uses handbooks from schools; 3) Learning is still teacher-centered; 4) Learning is not yet critical, so that students' scientific literacy does not appear to be critical and developing; 5) Due to the pandemic period from 2020 until now, student literacy is still very low at 30%; 6) Students still have difficulty solving hot questions; 7) The results of the test scores in chemistry subjects were still not good, especially in the reaction rate material, there were still many students' test scores that were not completed. Of the 35 students, 11 students completed and 24 students did not complete.

Based on the results of initial observations, students experienced problems in learning. Where in learning there is no proper use of media and learning models, and students' literacy skills are still lacking. Thus, students have difficulty conveying their own ideas or views to solve the problems given by the teacher. If this continues, it will make students' HOTs Literacy abilities constrained and limited. One effective model to use during learning is the PBL or Problem Based Learning model.

The Problem Based Learning (PBL) model is a learning model based on the constructivist paradigm which is oriented towards the student learning process. This model is characterized by using real life problems as something and improving critical thinking and problem solving skills, as well as gaining knowledge of important concepts (Agustini et al., 2016). In Sibarani's (2016) research, student learning outcomes obtained an average score of 81.83 and 79 with an achievement percentage of 81.25% considered good. The application of learning models in the classroom needs to be accompanied by the right media so that the desired results are maximized. According to Ramdania (2013), using Kvisoft flipbook maker software makes the media display more varied because not only text, images, videos, but audio can also be inserted in this media, so that learning is more interesting. So with the Problem Based Learning (PBL) model using Kvisoft flipbook maker media it can help students improve their high order thinking skills (HOTs). This is in line with research conducted by Prasetia (2016) which states that there is an influence of the application of the Problem Based Learning learning model on interest in learning mathematics in class XI vocational school students in Yogyakarta. Based on the description above, in this article the research will explain the significant

differences between students' HOTs literacy skills after using the PBL model with Kinemaster flipbook media and to find out which aspects of mastery develop through the PBL model and Kinemaster-based media.

▪ METHOD

This research was carried out at SMA Negeri 1 Percut Sei Tuan which is located on Jalan Irian Barat Sampali Village No.37 Medan Estate, Percut Sei Tuan District, Deli Serdang Regency, North Sumatra, Postal Code 20371 for the 2022/2023 academic year. This research uses a quantitative type of research. The method in this research is pre-experimental research. This research only involved one class, so the design used was one group pretest and posttest (one group pretest-posttest design) (Sugiyono, 2016).

This method is given treatment to students who are given a pretest to determine the student's initial abilities, after that they are given treatment using the Problem Based Learning (PBL) Flipbook model based on Kvisoft Maker and finally a posttest is given to determine the students' initial abilities. students' final abilities. The sample in this study used one class. The sample in this study was class XI IPA 4 of Percut Sei Tuan State High School using random sampling techniques. The sample studied at SMA class XI IPA 4 was 32 students.

The instruments used in this research were test and non-test instruments. The test instrument is a multiple choice test consisting of 20 questions and non-test instruments in the form of questionnaires and interviews. The data analysis technique in this research uses the participants' N-Gain value which is derived, hypothesis testing is carried out using the One Sample T test manually.

▪ RESULT AND DISCUSSION

In research on improving the results of media-based hot literacy, one class was used as the research sample. The sample selection was carried out randomly so that class XI-IPA 4 was selected as the research sample. This research was conducted at SMA Negeri 1 Percut Sei Tuan with a total sample of 32 students. This research was conducted in 6 meetings on the material Reaction Rate. At four meetings, at each meeting the students made observations on the learning media provided by the teacher, namely Kvisoft maker-based Flipbook media, as well as conducted group discussions with LKPD media and presented them. At two meetings it is used to conduct pretest and post test on students.

Based on the results of this study, the stages were carried out according to the research method which was given treatment to students who were given a pretest to find out the initial abilities of students after that they were given treatment using the *Problem Based Learning* (PBL) Kvisoft Maker-Based Flipbook model and finally given a posttest to find out their abilities. end student.

Based on the results of the validity test, 26 items were valid and 4 items were invalid, namely numbers 5,6,7 and 8. The results of the power of difference test were 2 items in very good category, 19 items in good category and 5 items in sufficient category. So that the questions used in the study were 20 questions and in the reliability test carried out, it was obtained Rcount (0.734) > 0.70, which means the questions were reliable.

The data obtained in the study used 20 items for the Pre-Test and Post-Test tests in the matter of reaction rates. The questions in multiple choice form were given to 32 students. Based on student learning outcomes, it can be seen that the students' Pre-Test scores were low with an average of 41.41 while the students' Post-Test scores increased

to 80.16. Comparison diagram of students' Pre-Test and Post-Test Scores can be seen in table 4.1 as follows:

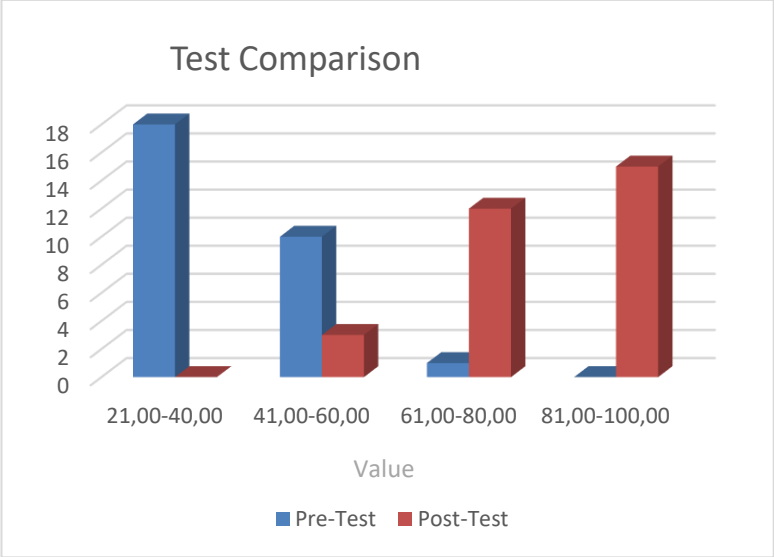

Figure 1. Test comparison diagram

The results of students' HOTs literacy abilities before using Kvisoft Flipbook-based media based on Kinemaster using the Problem Based Learning model are still low, which can be seen by carrying out a Pre-Test. The highest score was only obtained by 1 person with a score of 70.00. Based on the average value of learning outcomes from the Pre-Test with an average value range of 20.00-40.00 obtained by 18 people, an average value of 41.00-60.00 was obtained by 13 people. There are no students who have an average score in the maximum score range, namely with an average score of 81.00-100.00. This illustrates that students' HOTs literacy is still low. The results of students' increased HOTs literacy abilities are known from the results of the Post-Test scores. The lowest score in the research class at XI-IPA 4 is 50 and the highest score is 100 with an overall average of 80.15625. For the average range of 41.00-60 achieved by 4 students, the average range of 61.00-80.00 was achieved by 13 students and for the range of 81.00-100.00 achieved by 15 students at the time Post Test. It can be concluded from the description of the learning results that students' HOTs literacy abilities after using the Flipbook Kvisoft Kinemaster-based media using the Problem Based Learning model increased.

After the comparison test is carried out, the following tests are carried out, namely the normality test with normal results, the homogeneity test with homogeneous results and the final test, namely the hypothesis test using the N-Gain test and the one sample t test. The N-gain calculation is a test that can be used in general to show that there is an increase in learning carried out on student host literacy. The research hypothesis is "There is a significant difference between students' HOTs Literacy abilities after using the PBL model and Kvisoft Flipbook based on Kinemaster in Class XI students of SMA Negeri 1 Percut Sei Tuan Reaction Rate Material". Thus, the N-gain value in Table 1 shows that the research hypothesis is acceptable in the sense that the N-gain is an increase in students' HOTs literacy skills.

Table 1. The average gain of the sample

Class X IPA	N_Gain			Criteria
	$\bar{x}$	%	N	
	0,7186	71,86	32	High

Once it is known that the data are normally distributed, a hypothesis test can be carried out using a statistical test of one sample group (t_{hit}) on the right side of $t_{hit} > t_{table}$. This test is used to determine whether the hypothesis in this study is accepted or rejected. The test criterion is if the right $t_{hit} > t_{table}$ at the significance level $\alpha = 0.05$ and db = 31 then Ho is rejected and Ha is accepted. To draw conclusions from the results of calculating the hypothesis test data can be seen in Table 2.

Table 2. Hypothesis Test Results

Class X IPA	**Hypothesis**						
	$(xi - \overline{x})^2$	S	KKM	t hitung	t tabel	A	Db
	7,392	0,480	80	2,232	1,697	0,05	31

Based on the hypothesis testing of student learning outcomes, the value of thit > ttable is 2.232 > 1.697 with a significance level of $\alpha = 0.05$ and db = 31 so that Ha is accepted and it can be concluded that; There is a significant difference between students' hot literacy skills after using the PBL model with Kvisoft Flipbook media based on Kinemaster in Class XI students of SMA Negeri 1 Percut Sei Tuan Reaction Rate Material.

At this stage, scoring is carried out which is focused on each literacy HOTs indicator, which is then calculated as the average percentage of each indicator that is successfully answered by students. The table of results of calculating the percentage of students' host literacy can be seen in table 3 below.

Table 3. Persentase HOTs Literacy

Criteria	Question Number	Total
C3	21,25,26	68,75%
C4	1,2,4,6,7,8,11,13,15,17,19,20,24,27, 28,29,30	71,96%
C5	5,9,10,12,14,16,18,22,3	65,25%
C6	3	56,25%

Based on the results of the calculations performed, the highest average percentage was obtained on the C4 indicator (reasoning) of 17 items with a value of 71.96%, C3 (comprehension) of 3 items with a value of 68.75%, C5 (reasoning) of 9 item with a value of 65.25%, and C6 (reasoning) as much as 1 item with a value of 56.25%. Thus, the most developed aspect of HOTs literacy is through the PBL model with Kvisoft maker-based

Flipbook media, namely C4 (reasoning) with 17 items with a value of 71.96%.

The findings of this research are in line with research conducted by Yulianingtias et al (2016) which states that learning patterns that focus on problems and explore knowledge have a positive influence on increasing students' analytical skills and curiosity to provide solutions to relevant problems. In line with Flamboyant & Soeharto's (2018) research, flipbook chemistry learning materials on STEM-PjBL-based redox and electrochemistry materials assisted by learning videos that have been developed in this research and development are very valid. Likewise, in terms of readability, the flipbook Chemistry learning materials regarding STEM-PjBL-based redox and electrochemistry material assisted by learning videos are very valid, very effective, and very thorough. The flipbook chemistry learning material about redox and electrochemistry based on STEM-PjBL with the help of learning videos is considered good and can be used in the chemistry learning process. The development and use of e-books on mixed separation material caused positive enthusiasm from teachers and students (Jannah et al., 2017). Apart from that, the application of e-books has an effect in increasing students' mastery of concepts (Danardono et al., 2019; Nizatama et al., 2019).

The stages of the Problem Based Learning (PBL) model that researchers use are based on Arends' theory (2012) which consists of orienting students to the problem, organizing students to learn, guiding individual and group investigations, developing and presenting work results, analyzing and evaluating the solution process. problem. This stage is in line with research by Putri et al (2014), students are required to seek information from various sources related to the information they need through direct observation. This is one of the indicators of higher order thinking skills (HOTs), namely the ability to make decisions (evaluating the credibility of a source) and the ability to create (Brookhart, 2010). During the learning process, students interact with group members and exchange ideas to solve problems. Because with this, students will more easily understand the material being studied. Moreover, each member in a group is their own peer, thereby minimizing the awkwardness of asking questions from friends who understand better, and the learning process goes well. In accordance with the opinion, trying alone to find solutions to problems and the knowledge that accompanies it produces knowledge that is truly meaningful (Trianto, 2007).

Based on the explanation above, the stages in the Problem Based Learning (PBL) model applied in class XI-IPA 4 of SMA Negeri 1 Percut Sei Tuan can help students to improve higher order thinking skills (HOTs) literacy in reaction rate material. Higher order thinking skills (HOTs) increase because students are first presented with a problem, then asked to identify and solve the problem. Thus, the Problem Based Learning (PBL) model is a learning model that produces meaningful learning because at each stage students are actively involved. This is in line with research by Putri et al (2014) that the use of the Problem Based Learning (PBL) model provides many benefits, including helping students to be independent in finding the concepts to be studied. This is also strengthened by research by Budiarti and Airlanda (2019) that the Problem Based Learning (PBL) model has several advantages, including problems being presented at the beginning of learning, then students solving problems in groups. This can increase the experience of collaboration and interaction with fellow group members.

▪ CONCLUSION

From the results of the research and discussion conducted in CHAPTER IV, the following conclusions can be obtained: (1) There is a significant difference between students' HOTs literacy skills after using the PBL model with Kvisoft maker-based Flipbook media. This is proven through the results of calculations on the N-Gain value of 0.7186 or 71.86% and on the t test where tcount > ttable, namely 2.232 > 1.697. (2) The HOTs literacy aspect that is most developed in this study through the PBL model with the Kvisoft Flipbook maker based on Kinemaster is C4. This is proven through the results of calculating the percentages for each aspect, namely C4 (reasoning) with a value of 71.96%, C3 (understanding) with a value of 68.75%, C5 (reasoning) with a value of 65.25%, and C6 (reasoning) with a value of 65.25%, and C6 (reasoning) reasoning) with a value of 56.25%. Thus, the most developed aspect of HOTs literacy is through the PBL model with Kvisoft maker-based Flipbook media, namely C4 (reasoning) with 17 items with a value of 71.96%.

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