Increasing Learning Interest and Learning Competency Using Google Sites-Based Problem-Based Learning

Basori Basori[1,*], Saefudin Jufri[2]

[1] *Department of Informatics and Computer Engineering Education, Universitas Sebelas Maret, Surakarta, Indonesia*
[2] *SMA Negeri 1 Sampang, Cilacap*
[*] *Corresponding author. Email: basori@staff.uns.ac.id*

ABSTRACT

The teacher has an important role as a motivator to arouse students` learning interest. Low interest in learning can affect the competence or learning outcomes of students. The purpose of this research is to increase students` interest in learning and competence through Problem-Based Learning (PBL) model assisted by Google Sites in Informatics subject. This study used the Classroom Action Research (CAR) method with two cycles in class X SMA Negeri 1 Sampang, Cilacap which examined the increase in students` interest and learning outcomes. The data analysis used is descriptive comparative analysis. The results showed that the percentage of student`s interest in learning increased each cycle during the implementation of PBL assisted by Google sites. Other data shows that in the first cycle, the competencies or learning outcomes that reached the learning mastery indicator were (1) cognitive 41.67%, (2) psychomotor 55.56%, (3) affective 55.56%, cycle II using the assisted PBL model In Google Sites there was an increase in competency which reached indicators of learning completeness (1) cognitive 72.22%, (2) psychomotor 75.00%, (3) affective 83.33%. It can be concluded that the Problem-Based Learning model assisted by Google-Sites can increase students` interest in learning and competence.

Keywords: Competency, Google sites, Informatics, Learning interest, Problem-based learning.

1. INTRODUCTION

The quality of learning is very important for the advancement of education. Several aspects that determine the quality are learning outcomes and learning interest. While the factors that influence learning outcomes are internal factors and external factors. Internal factors include interest and motivation [1]. Interest in learning is an internal factor that determines the success of learning, but in fact, the interest in learning in informatics subjects at SMA Negeri 1 Sampang is classified as low based on observations made by the teacher.

Slameto in his book states the notion of interest in learning is, "a form of someone's activeness that encourages him to carry out a series of mental and physical activities to obtain a change in behavior as a result of individual experience in interactions in his environment which is related to cognitive, affective and psychomotor" [2].

K. E. Lestari and M. R. Yudhanegara explained that indicators of interest in learning are feelings of pleasure, interest in learning, showing attention while studying, and involvement in learning [3].

Based on the results of observations that have been made, researchers suspect that the cause of the problem of low learning interest and low learning outcomes is an inappropriate learning method/model. The method used by the teacher is in the form of a lecture method which causes the teacher to dominate learning. Less interactive learning media is also a supporting factor for the low interest in learning. With a good interest in learning, it is hoped that students will be more enthusiastic about participating in learning so that their learning outcomes will be better. Because interest greatly affects the quality of student learning.

The results of the initial survey also explained that student learning outcomes when compared with learning mastery scores showed low results.

Table 1. Percentage of learning completeness.

Minimum Completeness Criteria	Percentage
Graduated	27.78%
Not Graduated	72.22 %

Educational goals must always refer to the three domains inherent in students, namely the realm of thinking processes (cognitive), the realm of values or attitudes (affective), and the realm of skills (psychomotor) [4].

The cognitive domain is a realm that includes mental (brain) activities, namely the abilities includes remembering (C1), /understanding (C2), applying (C3), analyzing (C4), evaluating (C5), and creating (C6). The cognitive domain can be measured using tests developed from subject material at school.

The affective domain is the learning outcomes from students in various behavior as paying attention, responding, appreciating, and organizing. The affective domain can be measured using a questionnaire. According to Krathwohl, several types of affective domain categories as learning outcomes, start from the basic level to the complex level, namely: receiving, namely a kind of sensitivity in receiving stimulation (stimulation), responding or answers, namely the reaction given by someone to stimulation that comes from outside. Valuing (assessment) with regard to the value and belief in symptoms or stimuli. Organization, namely the development of values into an organizational system, including the relationship of one value to another, strengthening, and prioritizing the values that it already has [5].

The psychomotor domain is a domain related to skills or the ability to act after a person receives a certain learning experience. This domain is measured by observing and assessing the skills of students when doing practicum. Assessment of psychomotor learning outcomes includes: the ability to use tools and work attitudes, the ability to analyze a job and arrange work sequences, the speed of doing tasks, the ability to read pictures and or symbols, the compatibility of the shape with the expected and or predetermined size.

According to Enamel Hoque there are three indicators of learning outcomes, namely:
a) Cognitive domain, including knowledge, understanding, application, study, manufacture, and evaluation.
b) The realm of effectiveness, including acceptance, answering, and determining value.
c) The psychomotor domain, including fundamental movements, generic movements, ordinative movements, creative movements [6].

According to researchers, the use of the right model in learning can be one solution to this problem. One model that is expected to solve these problems is the Problem Based Learning (PBL) model. By applying the PBL model, it is expected to increase the competence of students. One of the advantages of this model is that students must support and help each other in mastering the material presented by the teacher.

Using Google Sites as a learning medium can improve students' ability to understand material because all learning materials are available on Google Sites and can be accessed anytime and anywhere using an internet connection. The development of e-learning based on Google Sites can use to improve student achievement [7].

The purpose of this action research is to find out whether there is an increase in students' interest and learning outcomes by using the PBL learning model assisted by Google Sites.

2. METHODS

This research is a Classroom Action Research (CAR) with two cycles. The subjects of this study were students of class XE-7 at SMA Negeri 1 Sampang. CAR procedures were: **(1) Planning**; Planning on the Cycle I will be carried out in 2 meetings. The material will be presented in the form of Office Application Content Integration (Cut, Copy, and Paste) with discussion, presentation, and question-and-answer methods. The following are various plans carried out in Cycle I actions:

a) Creating Teaching Modules (MA) with the Problem-Based Learning learning model assisted by Google Sites.
b) Preparing teaching materials/material modules for Office Application Content Integration (Cut, Copy, and Paste)
c) Make learning media using Canva
d) Prepare LKPD using a live worksheet
e) Prepare an assessment sheet (assessment of attitudes, knowledge, and skills)
f) Prepare an evaluation plan instrument

(2) Implementation; Each cycle acts two times according to the plan. Submission of the material in the first cycle is the Integration of Office Application Content (Cut, Copy, and Paste) using case studies and assisted by Google Sites to access LKPD, Materials, Pretest/Post Test, and Assignments. The next meeting focused on creating office application integration content through a practicum. The teacher prepared (1) quiz question for the first and second meetings in the first cycle. The first meeting quiz instrument consisted of 4 essay questions in the cognitive domain. (2) the quiz instrument for the second meeting The first cycle consisted of 4 essay questions in the cognitive domain. (3) psychomotor assessment instruments. (4) effective instruments. Validate all instruments in the first cycle.

There were 36 students following the implementation of classroom action research in the first cycle. The first activity is conditioning students, checking student attendance, giving apperceptions, conveying learning objectives, and giving a pretest using the QR Code through Canva media.

The next stage is entering the core components, using the Problem-Based Learning model with five syntaxes.

The first syntax is the orientation of students to the problem teacher first explains the tools and materials, then conveys triggering questions to students while also providing case studies related to the material for discussing and analyzing the case studies. Next, conclude the problems in the case study in groups.

The second syntax is organizing students to learn the material, the teacher divides into groups consisting of 2-4 students. Next, the group accessed the LKPD on Google Sites. They read the instructions and started working on them.

The third syntax is to guide individual/group investigations. The teacher encourages groups to collect information, do experiments to get the problem solutions, and monitor student involvement in the cases.

The fourth syntax is developing and presenting the work. The teacher assists the group in planning and preparing results then the group discusses to find solutions to solve the problem. The group also prepares presentation slides to be presented in front of the class.

The fifth syntax is to analyze and evaluate the problem-solving process. At this stage, the teacher gives appreciation to the group that has submitted the results of their work by reinforcing group presentations. In addition, the group also gave responses to other groups, then the teacher and the group evaluated and concluded the learning outcomes, then students took the post-test on Google Sites.

(3) Observation; Observations in Cycle I to find out students' learning interests were carried out by distributing questionnaires to students' learning interests. The next step is to process the data from the questionnaire.

(4) Reflection; Reflection in Cycle I is a reflection regarding the weaknesses and deficiencies that arise in the learning activities in Cycle I. These results will provide an overview regarding the treatment in learning to get reflection for development in the second cycle.

Indicators of achievement in Cycle I are indicators of student learning outcomes and indicators of student interest in learning. Indicators of achievement of learning outcomes use the KKM informatics subject with a KKM of 75, and indicators of achievement of learning interest use 4 indicators from [3] feeling happy,

interest in learning, attention while studying, and involvement in learning.

Data analysis in this study used a descriptive-comparative technique with a quantitative approach. The descriptive method is a method of examining the status of a group of people, an object, a set of conditions, a system of thought, or a class of events in the present. The purpose of descriptive research is to make systematic, factual, and accurate descriptions, drafting regarding the facts, characteristics, and relationships between the phenomena being investigated. In the descriptive method, the researcher can compare certain phenomena so that it is a comparative study.

Quantitative data from learning interest variables were analyzed by comparing the percentage of each respondent's score in each case with the assessment criteria. The percentage indicates the category of information that is revealed so that the position of each aspect can be identified in the whole or part of the aspects studied. The tendency criteria used refer to the formula developed by Azwar [8].

Table 2. Assessment Criteria.

Score	Category
$X \leq \mu - 1,5\,\sigma$	Very low
$\mu - 1,5\,\sigma < X \leq \mu - 0,5\,\sigma$	Low
$\mu - 0,5\,\sigma < X \leq \mu + 0,5\,\sigma$	Medium
$\mu + 0,5\,\sigma < X \leq \mu + 1,5\,\sigma$	High
$\mu + 1,5\,\sigma < X$	Very high

μ = The ideal mean that can be achieved by the instrument
= ½ (highest score + lowest score)
σ = ideal standard deviation that the instrument can achieved
= 1/6 (highest score – lowest score)
X = Score achieved

3. RESULTS AND DISCUSSIONS

3.1. Results

3.1.1. Learning Interest

Based on the results of CAR implementation, data on learning interest with 4 indicators can be represented in table 3. The indicators of interest in learning are: (1) feelings of pleasure, (2) interest in learning, (3) showing attention while studying, and (4) involvement in learning.

Table 3. The CAR results of learning interest per

No	Pra-Cycle				Cycle I				Cycle 2				Category
	Indicator (%)				Indicator (%)				Indicator (%)				
	1	2	3	4	1	2	3	4	1	2	3	4	
1	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	Very low
2	50,00	50,00	58,33	66,67	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	Low
3	27,78	33,33	27,78	19,44	0,00	2,78	13,89	38,89	0,00	0,00	0,00	0,00	Medium
4	22,22	16,67	13,89	13,89	33,33	61,11	52,78	41,67	16,67	33,33	33,33	30,56	High
5	0,00	0,00	0,00	0,00	66,67	36,11	33,33	19,44	83,33	66,67	66,67	69,44	Very high

cycles.

From table 3, it shows an increase in the category in each indicator of interest between cycles, especially in the high and very high categories, it can be seen that the dominant increase from pre-cycle to Cycle 1, and from Cycle 1 to Cycle 2.

3.1.2. Learning Competency

Next, will be presented the results of research related to student competency in cognitive competency, psychomotor competency, and affective competency in pre-cycle, first and second cycles as well as the results of a questionnaire about the effectiveness of the Googlesites-based Problem Based Learning learning model.

3.1.2.1. Cognitive Competency

The following Table 4 is a comparison of the results of cognitive competency on the percentage of passing each cycles.

Table 4. Percentage of cognitive competency completeness.

	Pre-cycle (%)	Cycle 1 (%)	Cycle 2 (%)
Graduaded	27.78	41.67	72.22
Not Graduaded	72.22	58.33	27.78

In the inter-cycle cognitive competency has increased. The biggest increase from cycle 1 to cycle 2. With these results cognitive competence has met the indicators of research achievement.

3.1.2.2. Psychomotor Competency

Comparison of psychomotor competency to the percentage of passing each cycle can be seen in Table 5.

Table 5. Percentage of psychomotor competency completeness.

	Pre-cycle (%)	Cycle 1 (%)	Cycle 2 (%)
Graduaded	27.78	55.56	75.00
Not Graduaded	72.22	44.44	25.00

In psychomotor competency between cycles has increased. The biggest increase was from pre-cycle to cycle I. With these results, psychomotor competence has met the research achievement indicators.

3.1.2.3. Affective Competency

Comparison of affective competence to the percentage of passing each cycle can be seen in Table 6.

Table 6. Percentage of affective competency completeness.

	Pre-cycle (%)	Cycle 1 (%)	Cycle 2 (%)
Graduaded	38.89	55.56	83.33
Not Graduaded	61.11	44.44	16.67

In affective competency between cycles has increased. The biggest increase from cycle 1 to cycle 2. With these results affective competence has met the achievement indicators.

3.2. Discussions

3.2.1. Learning Interest

3.2.2.1. Feelings of Pleasure

Based on the results of presenting the data on indicators of feeling happy, before the application of this model it was seen that students still had a low pleasure in learning, as evidenced by 50% of students in this category. This shows that the learning carried out is less attractive to students. Many things cause students to be less happy when they learn. The encouraging results were seen in the application of the Google-site assisted PBL model in cycle I and cycle II. Data on students'

feelings of pleasure in learning showed 66.67% in cycle I and 83.33% in cycle II, in the very high category. Student enthusiasm for learning is marked by an increased sense of enjoyment in learning [9]. The implication is that students who are interested in a subject matter, will tend to like that subject matter [10]. The preferences shown by students can be seen from the enthusiasm and initiative of students in paying attention to the subject matter. Enthusiasm can produce an unyielding attitude in gaining knowledge about the subject matter of interest. While initiatives can generate unexpected knowledge of the subjects of interest.

3.2.2.2. Interest in Learning

Research data shows that interest in learning has increased significantly from before the use of the model, cycle 1 and to cycle 2. Starting at 16.67% before the implementation of the model, and 100% in cycle 2 in the high and very high categories

The form of interest can be seen when students respond to what has been given by the teacher during learning activities at school. The implication is the reaction of students who are interested in the subject because the learning delivered by the teacher is interesting one of which is the use of digital learning, so that students are stimulated to respond or ask questions. The interest of students can also be seen when they are enthusiastic and always carry out the tasks given [11] [12].

3.2.2.3. Showing Attention while Studying

The data shows an increase in attention during learning, from 13.89% before implementing the model to 100% in the high and very high categories in cycle 2. Students who have an interest in learning will pay more attention to what is learned, they are more diligent and happy with the lesson [13][14]. The implication of attention when studying is that students can focus more on knowing what needs to be done and what doesn't need to be done in that subject.

3.2.2.4. Involvement in Learning

There was an increase in involvement in learning from 13.89% to 100% in cycle 2 in the high and very high categories What is meant by involvement is the participation of students in the lesson. Involvement can be provided by working on an assignment or project related to learning material [15].

3.2.2. Learning Competency

3.2.2.1. Cognitive Competency

In the pre-cycle, the percentage of students who passed reached 38.89%, which increased in the first cycle to 55.56%, and in the second cycle it rose again to 83.33%. The conclusion of the cognitive competency of students in the second cycle has achieved indicators of success. The phenomenon follows the research that the PBL learning model can improve student learning outcomes (cognitive domain) [16]–[20]. In the implementation of learning, the teacher has lured students to ask and answer teacher questions, but students are still less active in responding to the teacher.

3.2.2.2. Psychomotor Competency

Changes from pre-cycle to the first cycle and from the first cycle to the second cycle experienced an increase. The increase from 27.78% in the pre-action to 55.56% in the first cycle and the second cycle increased to 75.00%. Improvement based on predetermined success criteria. The conclusion of the psychomotor competence of students in learning using the Problem-Based Learning model has increased according to the indicators of success. In line with the result research, Problem-Based Learning can increasing student activity and learning outcomes (psychomotor domain) [21], [22]. Increased psychomotor competency because students can discuss to solve problems. So mastery of the task becomes better.

3.2.2.3. Affective Competency

In the pre-cycle percentage of students who passed reached the indicator of 38.89% in the first cycle to 55.56%, and in the second cycle it increased to 83.33%. Calculation of increase based on the success criteria of the affective domain. The success of the affective domain is when students get a score of more than 70 or get the title of a good attitude. The conclusions in affective competence, learning using the Problem-Based Learning model can improve students' affective competence. The PBL model can increase students' interest in learning and understanding of students' concepts. Affective competence increases with the Problem-Based Learning model because on the PBL, students become active at learning [23]–[25]. The teacher only acts as a facilitator. Students in discussions must help each other in mastering the material. Is is causes the social attitudes of students to be better.

4. CONCLUSION

Based on the research, it can be seen that the use of the Problem-Based Learning model assisted by Google Sites increases students' interest in learning. This can be seen from the increase per indicator of interest in learning up to cycle 2 in the high and very high categories. In addition, the use of this model can improve learning competence. This has been shown by the learning completeness achieved in cycle 2 in the cognitive, psychomotor, and affective domains.

Based on the research, suggestions for follow-up are (1) Students must be more active in learning and daring to ask questions of the teacher, answer teacher questions, and express ideas. (2) The Problem-Based Learning model requires proper time allocation and careful preparation of the learning flow. (3) Further research on efforts to increase student competency and student interest in learning using the Problem-Based Learning model assisted by Google Sites can be carried out more optimally by other researchers.

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