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The Influence of Group Investigation and Virtual Box Learning Media to Students' Activeness.

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Abstract:

This research aims to know whether the implementation of Group Investigation learning model and Virtual Box learning media can increase students activeness and learning achievement on the subject of operating system class X Multimedia (MM) SMK N 6 Surakarta. This research used classroom action research with two cycles, each cycle consisted of planning, implementation, observation, and reflection of teaching and learning activities. The subject of this research is the students of class X MM1 SMK N 6 Surakarta which numbered 32 students. Data collection technique that used were interview, observation, documentation and test. Meanwhile analysis technique implemented through comparative analysis and descriptive qualitative. This class action research carried out from December 2015 until June 2016. The result of research shows that the implementation of Group Investigation learning model and Virtual Box learning media can increase students activeness and learning achievement on the operating system subject. This can be proved on the pre-cycle activities observation, the percentage of students activeness is 52,87%, after implementation of Group Investigation learning model and Virtual Box in the first cycle increased by 77,87%, then in the second cycle increased to 86,72%. While the result of students learning achievement also increased from the value of each cycle test. On pre-cycle the average learning achievement for cognitive domain 62,5%, affective 65,27%, and psychomotor 73,44%. The average of learning achievement increased for cognitive domain became 73,38%, affective 71,5%, and psychomotor 75% after the implementation of Group Investigation learning model and Virtual Box at the first cycle. At the second cycle increased for cognitive domain to 87,5%, affective 82,52%, and psychomotor 80,47%. Research conclusion that the implementation of Group Investigation learning model and Virtual Box learning media could increase the students activeness and learning achievement on the subject of operating system class X MM SMK N 6 Surakarta.

Keywords: learning activeness, learning achievement, Group Investigation, Virtual Box, operating system.

Introduction

The operating system is one of the subjects for students Vocational High School (SMK) program of study skill programs Computer Engineering and Information Technology (TKI) all packages of expertise namely Software Engineering (RPL), Computer Network (TKJ) and Multimedia (MM). This is because the subjects of the operating system to learn about software that served to make the control and management of hardware and basic operations of the system, including running application software programs such as data processing that can be used to facilitate activities of computer users is the basis for students study program information and communication technology skills.

At SMK N 6 Surakarta for the study program of information and communication technology skills, expertise packages are available, namely Multimedia in the 1st half of subjects operating system discusses the ins and outs of the Windows operating system. In the second half will be studied is the Linux operating system. According to the researchers conducted a preliminary study, the existing problems in class X Multimedia (MM) SMK N 6 Surakarta to subjects operating system is the lack of activity and learning outcomes of students in the learning process. This is shown when the learning process progresses, students doing other activities such as opening social media, or chatting with friends. In addition, if the teacher gives the task of summarizing, students prefer requested file copy summary of the teacher rather than reading then make their own summary of his notes and student activity from observational data showing that students' learning activeness low with an average of 52.87% , The achievement of learning outcomes nor the maximum indicated on the percentage of mastery learning outcomes in the pre-Action of 18.75% for the cognitive, affective 21.87%, and 43.75% psychomotor.

Based on these problems, it is necessary to apply the learning model to enhance the activity and student learning outcomes by applying the learning model of Group Investigation and learning media Virtual Box. With Group Investigation model students are given an opportunity to be scientific by developing curiosity, honest, open, diligent, honest, and thorough will open itself to social interaction (Istikomah, Hendratto & Bambang, 2010). Syamsuri research results, Maman, and Helga (2010), Group Investigation learning model can improve student learning outcomes and learning ability to understand the material eye. Group Investigation learning model can improve students' scientific attitude (Istikomah, et al, 2010). While media use Virtual Box is to facilitate students in understanding the material, especially for materials open source operating system for the majority of the computer or laptop at school also belongs to the student's personal use operating system closed source (Windows) as well as students interested in observing the learning process if it is delivered through the media innovative.

The purpose of this research is (1) to determine whether the application of the learning model of Group Investigation and learning media Virtual Box can improve students' learning activeness on the subjects of the operating system of class X MM SMK N 6 Surakarta, (2) to determine whether the application of learning models Group Investigation and media Box Virtual learning can improve student learning outcomes in subjects of class X operating system MM SMK N 6 Surakarta, (3) applying the Group Investigation learning and learning media Virtual Box to enhance the activity and results of class X student of SMK N 6 Surakarta MM.

Group Investigation (GI) Learning Model was first developed by Sharan and Sharan (1976). It is one of a complex learning models in study groups that require students to use higher-level thinking skills. In GI, the teacher in charge to initiate learning by providing control over the students to choose research strategies that they will use. This model can be applied to all grade levels and subject matter field. The students follow a thorough investigation of the various topics/subtopics have been, then prepare and present a report on the overall (Mansur, 2013: 292). Syntax GI learning model, namely (1) the selection of the topic, (2) planning cooperation, and (3) implementation. In this study, in carrying out the study with GI will be supported by the use of instructional media Virtual Box. Oracle VM Virtual Box is a virtualization software, which can be used to execute the operating system "guest" operating system "main" (Wakhid, 2011). Virtual Box is one of the applications based on open sources, the application of legal and non-paid so they can easily get it without the need to purchase the application. Many types of virtualization applications, but to use Virtual Box application other than the user having to buy. In addition, Virtual Box features a fairly complete, stable and easy to use by various groups.

Methods

The approach used in this study is classroom action research (PTK). The subjects were students of class X SMK N 6 Surakarta MM1, totaling 32 students, comprising 25 girls and 7 boys. Data collected for the needs of this research is divided into two types: quantitative and qualitative data. Qualitative data includes the data on observations and interviews about the learning process in the classroom, while quantitative data in the form of grades of student learning outcomes of each cycle. The collection of data used in this study are (1) interview, (2) the method of observation, (3) methods of documentation, and (4) test. The data collected will be analyzed with a comparative analysis that compares the value of each cycle of the test results and descriptive qualitative study based on the results of observations for the activity of learning.

Results and Discussion

From the observation of the kekatifan student learning is done, from 6 aspects are observed: (1) the visual aspect, (2) the aspect of oral, (3) the aspect of listening, (4) the aspects of writing, (5) the mental aspect, and (6) emosipnal aspect, it is known that 40.63% of the total number of students is 32 students have been doing visual activity, 3.13% of the total number of students have been doing oral activity, 70.31% of the total number of students have been doing listening activities, 78.13% of the total students have been doing writing activities, 100% of students have been doing mental activities, and 25% of the total number of students have been doing emotional activity. The average completeness of activity of learning at this stage is still below pre-Cycle indicator of the success of applied research in this study was 75% which is only 52.87%. Percentage mastery learning outcomes at the stage of pre-Cycle is still low, ie to cognitive 18.75%, 21.87% affective, and psychomotor 43.75%.

Results of interviews that have been conducted for teachers of subjects in class X operating system MM1 SMK Negeri 6 Surakarta and class X MM1 SMK Negeri 6 Surakarta on stage prasiklus be noted that with the adoption of lecture, liveliness and student learning outcomes are still low. This is because during the course students are less active in responding to the material presented and do things outside of the learning process such as chatting or playing laptop. In addition, students do not understand the material because students are less interested in the lecture method is applied and lack of instructional media used.

Researchers applying the learning model of Group Investigation and learning media Virtual Box pre-Cycle stage based on the analysis that has been done. Model Group Investigation learning and learning media Virtual Box can help students learn the material operating system, especially in the Basic Competency "Understanding the Linux boot process" which will be implemented in the first cycle and the second cycle. In this study, which acts as a teacher is the teacher of the class X operating system MM1 and researchers act as observers to observe the process of teaching and learning.

Cycle 1

On the implementation of the first cycle of action, teachers implement instructional model Group Investigation and learning media Virtual Box. The learning process is the teacher only convey the material to be studied and provide materials in general, acts as a resource and facilitator, to see that the students can carry out the task, helping the difficulties faced by students in learning. Learning activities focused more on participation and involvement of the student in the practical activities using Virtual Box and investigation topics in group discussions.

In the first cycle, students were divided into 8 groups and each group of 4 students. Early learning first meeting, the teacher provides introductory material to be investigated, then students join groups each of which has been divided. Furthermore, each group was given a task to do instalasai Virtual Box and Linux operating systems that will be used later in the meeting 2. At the second meeting, students investigate the material that has been given by using Virtual Box instructional media with their respective groups. After the investigation is completed, each group wrote a report on the investigation will be used as the value of psychomotor. Observers conducted observation of student activity and affective. At the end of the first cycle conducted written test to determine the value of cognitive students. Activity of learning the first cycle can be seen in Table 1 and the results of the first cycle of learning can be seen in Table 2.

Table 1. Activity of learning the First Cycle

Aspect of Observasion	Persentage (%)
Visual	81,25
Speak	39,06
Listen	85,95
Write	81,25
Mental	100
Emotional	78,13
Average Completeness	77,61

Table 1 on the results of activity of learning is seen from the first cycle the percentage of completeness of the data observations that have been made.

Table 2. the Results of the First Cycle of Learning

Results of Learning	Average of Value	Average of Completeness (%)
Cognitive	62,5	18,75
Affective	65,27	21,87
Psychomotor	73,44	43,7

The activity of learning the first cycle there are aspects that have not met success indicator ie verbal aspect. While the results of learning both cognitive, affective, and psychomotor also not meet an indicator of the success of 75%.

Cycle 2

In the second cycle, carried out investigative activities of media groups use a Learning Virtual Box, the same as I. The group division cycle in the second cycle is also the same as the cycle I. The difference in the second cycle is when each group had completed the investigation, the investigation report is displayed with a slide presentation later described by each group in front of the class. The group gets a turn presentations will be asked by one other group served as the core questioner. Slide presentations and presentation activities are taken as the value of psychomotor. Observer observing activity and affective students during the learning takes place. At the end of the second cycle executed a written test to get a student's cognitive value. The activity of learning the second cycle can be seen in Table 3 and the results of the second cycle of learning can be seen in Table 4.

Table 3. The activity of learning the second cycle

Aspect of Observasion	Persentage (%)
Visual	84,38
Speak	78,13
Listen	95,31
Write	81,25
Mental	100
Emotional	81,25
Average Completeness	86,72

Table 3 concerning the activity of learning the results of the second cycle of the views of the percentage of completeness of the data observations that have been made.

Table 4. the results of the second cycle of learning

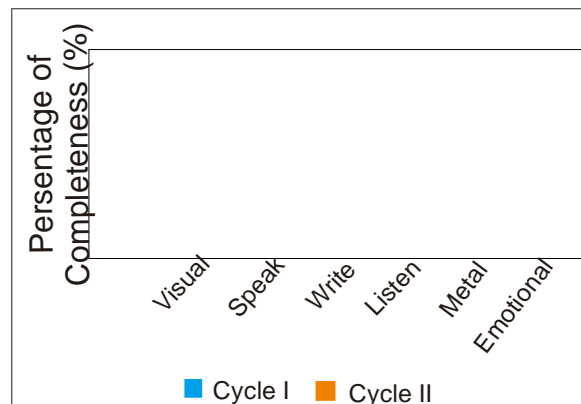| results of learning	Average of Value	Average of Completeness (%)
Cognitive	87,5	81,25
Affective	82,5	84,38

Psychomotor	80,47	87,5

Activity and learning outcomes of students in the second cycle as a whole have met the indicators of the success of 75%.

Comparison of Outcome Measures

The application of the model Group Investigation and learning media Virtual Box happen increase in each cycle. Comparison of results from the first cycle to the second cycle can be seen in Table 5 for the activity of learning, and Table 6 for learning outcomes. While drawing comparisons per cycle can be seen in Figure 1 for the activity of learning, and Figure 2 for the learning outcomes.

**Table 5. Comparison of Results from the First Cycle to the Second Cycle**

Aspect of Observasion	Completeness Cycle I (%)	Completeness Cycle II (%)
Visual	81,25	84,38
Speak	39,06	78,13
Listen	85,95	95,31
Write	81,25	81,25
Mental	100	100
Emotional	78,13	81,25

Figure 1. Comparison of Results from the First Cycle to the Second Cycle

Table 7. Comparison of learning outcomes

results of learning	Average of Value Cycle I	Average of Value Cycle II
Cognitive	62,5	87,5
Affective	65,27	82,5
Psychomotor	73,44	80,47
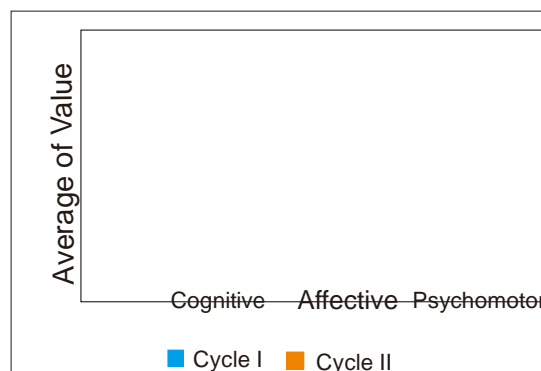
Figure 2. Comparison of Learning Outcomes

An increase from the pre-cycle to cycle II seen from completeness percentage can be seen in Table 7.

Table 7. The Increase Research Outcomes

results of learning		Average of Value Cycle I
Learning Outcomes	Cognitive	62,5
	Affective	65,51
	Psychomotor	47,5
Activity		33,85

From these data it can be concluded that the application of the learning model of Group Investigation and learning media Virtual Box can enhance the activity and student learning outcomes. Group Investigation learning model application of this research is to carry out group presentations where each group advanced to the class presented the results of the investigation will be asked by other groups that serve as the core questioner. Presentation activities is proven to be able to enhance the activity and student learning outcomes for students playing the presenter is required to explain the results of the investigation group in front of the classroom, so that students better understand the material under investigation, and make students more responsible for themselves and their peers and students playing inquirers core will also be more critical in response to presentations and will get an answer from the material that has not been understood through the questions submitted. While learning media Virtual Box help students better understand the material on the subjects of the operating system for direct student practice learning materials, search for information, and collect data regarding the material to be investigated and to help enhance the activity and student learning outcomes for the students play an active role during the learning process with the media virtual Box is used.

Conclusion and Recommendation

Based on the research that has been done, it can be concluded that (1) the application of Group Investigation learning models and learning media Virtual Box can improve students' learning activeness on the subjects of class X operating system MM SMK Negeri 6 Surakarta with a percentage increase of 33.85% was observed of the average completeness of the stage of pre-cycle until the second cycle, (2) the application of the learning model of Group Investigation and learning media Virtual Box can improve student learning outcomes in subjects operating systems class X MM SMK Negeri 6 Surakarta with a percentage increase of completeness by 62 , 5% for cognitive, 62.51% for the affective domain, and 47.75% for the psychomotor, and (3) group presentations of the results of applying the learning model of group Investigation and learning media Virtual Boxberhasil enhance the activity and student learning outcomes classroom X MM SMK N 6 Surakarta.

From the conclusions that have been described, can be the first proposed some suggestions for schools should provide support to teachers to present such innovative learning model of Group Investigation learning and using instructional media such as Virtual Box. Both the teachers should convey learning using learning model that can make students active and better understand the learning material such as learning model of Group Investigation that activity and student learning outcomes can achieve maximum results and should teachers use instructional media like Virtual Box so that students are not saturated for learning and can enhance the activity and learning outcomes. All three students should be more diligent in learning and daring expression, ideas, or questions the students also appreciate the teacher who was explaining the material in front of the class by not doing things outside of the learning process is like playing your own laptop or talking with friends.

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