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Effectiveness of KWL (*Know-Want-Learn*) Thinking Strategy to Learning Activity and Understanding of Living Creature Classification Concepts

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Article Info

Abstract

Science is a learning given at school. Learning strategy choices would influence to learning success. There is a need of creative and innovative strategy to improve learning activities and student conceptual understanding, such as by using *KWL* thinking strategy (*Know-Want-Learn*) assisted by video. This research aims to analyze learning activity and effectiveness of learning conceptual understanding at VII grade of a Public Junior High School in Nganjuk after being intervened by *KWL* thinking strategy assisted by video. This *quasi experimental* research design used *pretest-posttest control group design* with 64 students in which 32 of them grouped into control group while the remaining were grouped into experimental group. Technique of collecting data was *simple random sampling.*

Experimental group student activity analysis results show 28 of them (87,50%) are categorized excellent and 4 of them (12,50%) sufficient. Meanwhile, the control group shows 11 of them (34,37%) categorized excellent and 21 of them (65,63%) categorized sufficient. Analysis of experimental and control group classical accomplishment met the effective criteria since it passed 75%. Classical accomplishment of completed experimental group's cognitive aspect reached 28 students (87,50%). Meanwhile, the control group reached 26 students (81,25%). The improvement of learning outcome was calculated by significance test or t-test. The result of control group's t-test showed t-count 8,64 > t-table 2,03. The experimental group obtained t-count 11,12 > t-table 2,03. The improvement and accomplishment of experimental group was better than control group. Based on the results, it could be concluded that *KWL* thinking strategy assisted by video was effective to improve learning activity and VII graders' conceptual understanding learning at a Public JHS in Nganjuk.

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INTRODUCTION

Learning activity is an important aspect and a key of learning objective success. Learning which emphasizes on learning activity will be more meaningful and could rake students into impressive learning experience. Besides that, students could also participate actively in learning. Thus, they could develop their talents, think critically, and solve problems which lead to learning conceptual understanding.

Ideally, learning activity needs to be improved in learning, included in learning science at JHS level. Science learning could be considered success if all learning objectives have been achieved. However, there are still many problems during learning. It is in line with Haqiqi's statement (2018) that there are factors causing science learning problems for JHS students. They are (1) student internal factor, such as talent, interest, motivation, and intelligence, and (2) external factors, such as teacher, school, facility, and student activity.

The observation results conducted in one of Nganjuk's Public JHSs was known to have several basic problems faced by seventh graders. It was the used learning strategy in which were lacks of varieties, monotonous learning activities, such as lecturing model which made teacher dominated the class and students only kept listening. They also kept reading the materials or listening to the delivered materials. It made students having no active participation in learning process. Besides that, there was no various learning sources, such as teacher only explained the material as it was on the handbook without any video to make students interested in learning. If it was just let, the students would be more passive and saturated to learn at school. It would also influence their conceptual understanding about the materials.

Teachers must figure out other ways to reach the core competence so learning would be interesting and joyful. Based on the explanation, there is a need to improve learning activity so students would be more able to learn something and it would be reflected from their conceptual understanding. One of the efforts to improve active roles and conceptual learning understanding of the students is by using *KWL (Know-Want-Learn)* thinking strategy.

KWL strategy could activate students' knowledge and invoke questions before learning through three stages: what do you Know (K), what do you Want to know (W), and what did you Learn (L) (Vaughn & Bos, 2012). KWL strategy has several strengths: 1) it focuses on students, motivates them to active in finding out information and to learn independently and collectively (Al-Khateeb & Indrees, 2010); 2) it improves *speaking, reading, listening,* and *writing* skills and develops participation in classroom activity (Usman *et al,* 2018), and 3) it improves learning motivation of students (Hamid *et al,* 2016).

Besides that, to make learning joyful, there is a need of supportive facility in the form of media. Learning media is a factor to make learning objective achieved accordingly based on core competence (Cahyani *et al,* 2014). Learning media has strategic position in learning process since it mediates science information (Asmara, 2015). Learning media designed properly could facilitate students in understanding and comprehending learning materials (Muhson, 2010), motivate students toward the presented materials (Hasrul & Lauron, 2011), in which would make them meaningfully learn (Zuhrieh, 2009). Therefore, there is a need of interactive media to maximize learning science process effectively, by using video. The use of video could reach learning process effectiveness and attract students' attentions to concentrate on the materials so learning would be interesting (Djamarah & Zain, 2010).

Based on the problems, KWL strategy assisted by video becomes an alternative to support joyful and interesting learning processes. This research aims to analyze learning activity and effectiveness of learning conceptual understanding at VII grade of a Public Junior High School in Nganjuk after being intervened by *KWL* thinking strategy assisted by video.

METHODS

This *quasi experimental* research method used *pretest-posttest control group design*. It involved experimental and control groups. This study was carried out at a Public JHS in Nganjuk, Eastern Java, with population taken from VII graders in academic year 2019/2020 with 5 classes and 160 students in total. There were two classes with 64 students taken as sample. 32 of them were grouped into control group while the remaining of them was in experimental group. Technique of collecting data was *simple random sampling.* The instruments to collect data consisted of learning activity questionnaire and formative question test which have guidance on question rubric which was arranged previously. The questionnaire was used to obtain learning activity data. The test was used to measure student cognitive

skill. Learning activity assessment was done by distributing questionnaire to the students in the end of learning. There were 10 numbered questions. The activity indicators consisted of emotional, listening, visual, writing, mental, and oral activities. The analysis of learning conceptual understanding effectiveness was assessed from learning outcome accomplishment with minimum criteria passing 75% and learning outcome improvement with significance test, t-test.

RESULTS AND DISCUSSION
Effectiveness of Student Learning Activity

Improvement of student learning activity on control and experimental groups obtain results as shown in Figure 1.
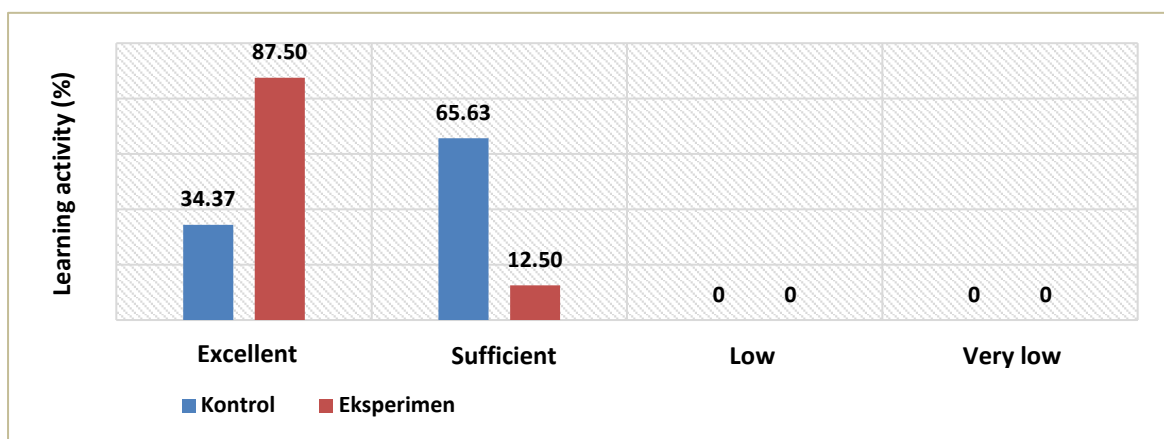

Figure 1. Categories of Control and Experimental Group Students' Learning Activities

Based on figure 1, the analysis results of experimental group learning activity shows 28 of the students (87,50%) categorized excellent and 4 of them (12,50%), categorized sufficient. The control group shows 11 of them (34,37%), categorized excellent and 21 of them (65,63%), categorized sufficient. It could be seen that experimental group learning activity was better.

Low learning activity of control group was caused by the whilst teaching of the teacher. It was only explaining the material by lecturing. The teacher directly read the material which had to be noted by the students. Such learning activity made students were not active and learning was not interesting. Such boring learning caused students saturated. They did not pay attention to the teacher. Most of them also did not note and they spoke to each other. Thus, it turned down learning activity. According to Nikmah (2013), lack of strategy and learning media in a learning caused students saturated or bored. They could not concentrate in keeping up the learning. So, it lowered their learning motivation. Basuki (2015) also argued that learning activity digression was caused by students whom got crowded each other. They spent a lot of their times speaking and did not pay attention on the teacher's materials. Thus, feedback process between teacher and student were not seen.

Improvement of student learning activity in experimental group was caused by *KWL* strategy. It was a new thing to be implemented so that it made students interesting. The use of the implemented strategy could provide opportunity for students to get involved in learning by distributing group discussion sheet and let them answer the questions on *KWL* columns. So, they would be motivated to read and listen to the materials. It caused learning activity improved (Figure 1). According to Saharsa *et al* (2018), learning process in class by using new learning model or method could attract students to pay attention. Besides that, the learning activity improvement on experimental group was caused by the use of video which could attract students' attentions. Video could improve learning motivation and learning outcome understanding skill (Hsin & Cigas, 2013). KWL strategy requires students to train their prior knowledge so they would feel need the information in the video.

Effectiveness of Student Conceptual Learning Understanding

Effectiveness of student conceptual learning understanding were assessed from learning outcome accomplishment and learning outcome improvement.

The analysis was grouped into two categories: classical and individual. The criteria of individual learning outcome effectiveness were obtained from Minimum Passing Grade determined by the school. It was students were considered to have accomplished if the scores were at least 75. Thus, those under 75 were considered to have not accomplished. Classical learning accomplishment was measured by learning outcome success in a class. According to Indrawati (2013), classical learning outcome accomplishment would be effective if it reached ≥75% of the all students passing the Minimum Passing Grade (Table 1).

Table 1. Individual and Classical Accomplishments of Experimental and Control Groups

Components	Postest	
	Experimental	Control
Numbers of unsuccessfully accomplished students	4	6
Numbers of successfully accomplished students	28	26
Classical unsuccessful accomplishment (%)	12.50	18.75
Classical successful accomplishment (%)	87.50	81.25

Classical accomplishment of completed experimental group's cognitive aspect reached 28 students (87,50%). Meanwhile, the control group reached 26 students (81,25%). The analysis result of both groups' classical accomplishment had met effectiveness criteria since it passed 75%. The improvement of learning outcomes on classifying living creatures was obtained by calculating the average of pretest and posttest scores through N-gain test. The improvement of N-gain test on control group was 0,3. Meanwhile, the experimental group obtained 0,5. The average gain improvements of both groups were categorized moderate. The amount of N-gain score shows effectiveness of the intervention in which the significance was determined by t-test. When t-table < t-count, then the improvement score is said significant. The result of control group's t-test showed t-count 8,64 > t-table 2,03. The experimental group obtained t-count 11,12 > t-table 2,03. Then it can be concluded an increase in learning outcomes of the two groups is effectively increasing.

The accomplishment and learning outcome improvements of experimental group was better. It was caused by implementation of *KWL* strategy which focused on invoking prior knowledge of the students on Classification of Living Creatures. It was done by *brainstorming.* Then, it was continued by determining what to know by formulating questions concerning with the materials. Then, the last one, it was determining the stages of what had been learned by answering the formulated questions from the previous stage. Besides that, the delivery of the materials which were interspersed by video could make students interested, motivated, and having eager to learn. Meanwhile, conventional learning did not accommodate students. It only delivered the material and provided questions to work. According to Cakir (2008), an excellent learning process does not only pay attention on conceptual delivery but also conceptual delivery process and conceptual understanding process of students.

Based on the analysis of learning conceptual understanding by using *KWL* strategy assisted by video, it was better than the conventional one. According to Riswanto *et al* (2014), student learning outcome accomplishment could be achieved by implementing KWL strategy. It was supported by Kurniasih & Listiawati (2018) stating that KWL strategy positively and significantly influenced toward students' conceptual task on ecosystem materials. Based on the discussion, it could be concluded that learning with *KWL* strategy assisted by video was effective to influence students' conceptual learning understanding.

CONCLUSION

Based on the findings, *KWL* thinking strategy assisted by video was effective to improve learning activity and students' conceptual understanding. There is a need to habituate students by using *KWL* thinking strategy assisted by video to improve learning activity and student conceptual learning understanding maximally.

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