



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

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Abstract

Science is one of lessons given at school. Learning strategy selection influences the learning success. There is a need of creative and innovative strategies to improve interest and understanding of the students' learning concepts: by analyzing using KWL thinking strategy assisted by video. This research aimed to analyze the interest and effectiveness of Seventh Graders of SMPN 2 Pace learning concepts after obtaining learning by using KWL thinking strategy assisted by video. This *quasi experimental* research method used *pretest – posttest* control group design consisting of 64 students grouped into two: control and experimental groups. The technique of sampling used *random sampling*. The findings showed interest and effectiveness of experimental group's learning concept was better. The analysis of experimental group learning interest showed 28 of them (87.50%) considering it well and 4 students (12.50%) considering it sufficient. Meanwhile, on control group, 11 students (34.37%) considering it well and 21 students (65.63%) considering it sufficient. The classical learning accomplishment of the experimental group reached 28 accomplished students or 87.50% while control group 26 students or 81.25%. The significance test, t-test, showed the analysis result of control group was $2.03 < 8.64$ while the experimental group obtained $2.03 < 11.12$. Based on the findings, it could be concluded that KWL thinking strategy assisted by video was effective in improving interest and conceptual understanding of SMPN 2 Pace students.

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INTRODUCTION

Learning science is needed to conduct well in school learning process. Science is said success if all the already determined learning purposes are achieved. However, in the reality, there are many hindrances experienced during learning. There are several factors of causing science learning difficulties at JHS in learning: (1) internal factor of the students, such as talent, interest, motivation, and intelligence, and (2) external factors, such as school facility, teachers, infrastructure, and students' activities. The analysis results showed that the factor of learning science difficulty at school correlated to national examination result (Haqiqi, 2018).

The result of observation conducted to seventh graders of SMPN 2 Pace found several problems faced by students: 1) less teaching varieties leading to poor enthusiasm in learning activity, 2) teaching and learning process were not meaningfully implemented causing the students not interested and enthusiastic in learning. If it was not solved, they would be more passive and feeling bored in learning at school.

Poor creativity of the teacher to implement various teaching strategy also influenced low interest and conceptual understanding of the students. One way to make it joyful is a need of facility and supportive infrastructure, such as supportive tools or media (Taufiq *et al*, 2014). It is also stated by Cahyani *et al* (2014). There are many factors to achieve learning purposes based on core competence. One of them is by using learning media.

Learning media plays strategic position in learning process because it mediates science information (Asmara, 2015). The properly designed learning media could facilitate students in understanding and internalizing the learning materials (Muhson, 2010), to encourage student's interest (Hasrun & Lauron, 2011), and to encourage remembering power and to sharpen their listening (Sofyan *et al*, 2011) so the learner could learn meaningfully (Zuhrieh, 2009). Therefore, there is a need of interactive media to maximize effective teaching and learning in science by using video. The use of media could facilitate learning process effectiveness, directing the students' attention to concentrate on the

learning material so learning process is interesting (Djamarah & Zain, 2010).

Beside the use of interactive media to maximize teaching – learning process, there is a need of creative and innovative learning strategy to improve interest and learning conceptual understanding of students. One of the strategies to facilitate them using background knowledge and student interest in a certain topic is called KWL (*Know – Want – Learn*). Vaughn & Bos (2012) state *KWL* strategy could activate prior student knowledge and encourage question in conducting learning activities through three stages: (*K*) *what do you know*, (*W*) *what do you want to know*, and (*L*) *what did you nlearn*. Based on the explained problems, KWL strategy was used by assistance of video media as solution to support joyful and interesting learning process for students. This research's purpose is to analyze the interest and effectiveness of the seventh graders of SMPN 2 Pace's conceptual learning after being taught by KWL thinking strategy assisted by video.

METHODS

This *quasi experimental* method used *pretest-posttest control group design*. The sample was taken by *simple random sampling*. The design involved one experimental group and one control group. This research was conducted at SMPN 2 Pace, Nganjuk municipal, Eastern Java with population was from seventh graders of the school in academic year 2019/2020. There were 5 classes with total 160 students. The selected sample consisted of two classes from the seventh graders of the school, 64 students. The sample was taken by *cluster random sampling*.

The obtained data by pretest and posttest on both groups was collected through informative question test guided by the previously arranged question rubrics by the researcher and questionnaire of interest. The techniques of collecting data were cognitive skill measurement or student learning achievement and questionnaire to obtain learning interest data after the learning.

RESULTS AND DISCUSSION

Student Learning Interest

Student learning interest was done by distributing the questionnaire to the students after

the end of the learning. The questions consisted of 10 numbers. The measured interest indicators consisted of motivation, interest, attention, and student participation. The improvement of student learning interest of both groups are obtained as shown on the figure.

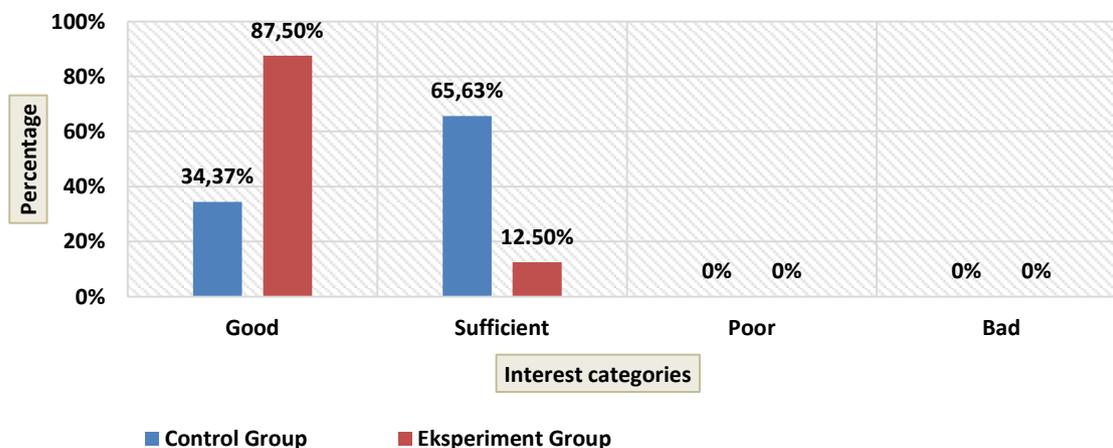


Figure 1. Interest Category Comparisson on Control and Experimental Groups

Based on the figure, the result of experimental group analysis shows that 28 students (87.50%) were categorized well and 4 students (12.50%) judging it sufficient. Meanwhile, the control group shows 11 students (34.37%) judging it well and 21 students (65.63%) judging it sufficient. The comparison of the interest categories on experimental group was better.

process by using new learning model or method could attract students in understanding the delivered material. As stated by Rahayuningsih & Wulandari (2014), KWL strategy could improve classroom situation in terms of: a) student attention to make them concentrated in learning, and b) participation and interaction of them while having and responding to teacher’s questions.

During learning at classroom, the students followed the process well. The learning process of the experimental group made the students more enthusiastic in learning because the interesting shown video caused the students to be curious toward the taught material. The use of this learning strategy required students to train their initial cognitive ability, so they feel needing the information on the video. It indicated the students’ interest in lasting learning. This interest was a learning interest indicator. As stated by Hsin & Cigas (2013), video could improve learning motivation. In contrast, the control group showed less motivation. They did not have curiosity toward the material.

Student Learning Conceptual Understanding

The analysis of learning accomplishment is grouped into individual and classical accomplishments. The effective criterion of individual learning was taken from the determined minimum passing grade by school. It was when an individual obtained at least 75 and less than 75 would be stated to have accomplished the material. If an individual obtained at least 75 and less than 75 would be stated to have not accomplished. Classical learning accomplishment was measured from the improvement level of student learning accomplishment comprehensively in a class. Classical learning accomplishment was effective if $\geq 75\%$ from all students passing the minimum grade with at least 75 (Indrawati, 2013). The numbers and the percentage of individual and classical passing grade accomplishments as seen on Table 1.

The experimental group students were interested and more active in learning because KWL strategy assisted by video was a new way of learning and had not been implemented previously. Sharsa *et al* (2018) tells that learning

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

Components	Posttest	
	Experiment	Control
Numbers of accomplished students	4	6
Numbers of unaccomplished students.	28	26
Classical learning accomplishment (%)	87.50	81.25
Classical learning unaccomplishment (%)	12.50	18.75

The classical accomplishment of cognitive learning value from final posttest of accomplished experimental group reached 28 students or 87.50%. Meanwhile, the control group reached 26 students or 81.25%. The analysis data of classical accomplishment for both groups met the effective criterion since it passed $\geq 75\%$.

Learning achievement improvement on Living Creature Classification was obtained by calculating the difference between pretest and posttest results through N-gain test. The improvement obtained by N-gain of both groups is presented on Table 2.

Table 2. Learning Achievement Improvement of Experimental and Control Groups

Scores	Criteria	Experiment		Control	
		Numbers	Percentage (%)	Numbers	Percentage (%)
$g \geq 0.7$	High	3	9.38	0	0
$0.3 \leq g < 0.7$	Moderate	28	87.50	20	62.5
$g < 0.3$	Low	1	3.12	12	37.5

The average of Gain improvement of both groups is categorized moderate. The improvement of gain score of the control group is 0.3 while the experimental group is 0.5. The amount of gain score shows the effectiveness of intervention in which the significance was determined by t-test. Based on the analysis of significance t-test of control group, it was $2.03 < 8.64$ while the experimental group was $2.03 < 11.12$. It was concluded there was effective improvement of both groups' learning outcomes.

Learning accomplishment by using KWL strategy assisted by video was better than using conventional method. The learning accomplishment could be achieved by implementing KWL strategy (Riswanto et al., 2014). It is also supported by Kurniasih & Listiawati (2018). They stated that KWL positively and significantly influenced conceptual mastery of students under material ecosystem. The conceptual mastery of the student on learning taught by KWL strategy was 74.02, categorized good. Meanwhile, on the class taught without the strategy, it obtained 64.51, categorized sufficient. The result *posttest* t-test on significant level 0.05% obtained t-count score $11.73 > t\text{-table } 1.67$. Thus, H_0 was denied and H_a was accepted. The students' responses taught by using KWL strategy were 80.40, categorized very strong. Meanwhile a class taught by without KWL strategy obtained 74.41, categorized strong. Based on the discussion, it could be concluded learning taught by KWL thinking strategy assisted by video was effective and influenced the students' conceptual understandings.

The good learning process does not only concern on the concept delivery but also its process and concept understanding process of students (Cakir, 2008). KWL strategy focuses on facilitating the prior knowledge of students under living creature classification material through *brainstorming*. Then, to determine something wanted to know by students, it was done by formulating questions concerning to the learning material. Then, the final stage was determining the already learnt materials by answering questions which were formulated on the previous stage. Higher prior cognition would influence positively to understanding and implementation of the concept significantly (Prastiti, 2007).

CONCLUSION

Based on the findings about KWL thinking strategy assisted by video, it was proven effective to improve interest and conceptual understanding of the students. Therefore, to improve interest and student conceptual understanding maximally, there would be a need to habitualize using KWL thinking strategy assisted by video.

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