Effect of KWL Learning Method (Know-Want-Learn) and Self-Assessment on Student Learning Independence Vocational High School

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Abstract

The study aims at determining the effect of know-want-learn learning method and self-assessment of learning independence. The research activities were conducted in the form of quasi-experimental using 2x2 factorial design. The study population was XI grade students of all majors in Singaraja vocational middle secondary school, totaling 282 people. The sample was taken using random sampling, namely students of product service, fashion and hospitality on 124 people. Research data of learning independence scores were collected using a questionnaire. Data were analyzed using two-way analysis of variance. The analysis results showed that (a) towards the students who were given self-assessment. The learning independence of students who take learning with the KWL method were higher than students who take learning with conventional methods, (b) towards the students who were given peer assessment, learning independence of students who take learning the KWL method was no different from students who take learning with conventional methods, and (c) there was an effect of the interaction between the KWL learning method and self assessment on learning independence.

Keywords

Contents

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1. Introduction

Learning independence is one of the most important problems faced in education. It is closely related to the ability to self-regulate. The students who have high independence tend to learn better, being able to use cognitive and metacognitive strategies well. Vice versa, the students who have low independence are slower and have excessive dependence on others.

Learning independence is one's ability to understand and control the learning process. It defines that independent students are able to control and determine their own learning activities without being dependent and free from others influence. The independence of individual is due to self-confidence, due to the belief. They are able to learn based on their own abilities. Chanipe & Fogerson (2006), described learning independence as a tendency. Wherein, the individuals take initiatives without others help in diagnosing learning needs and making decisions. The learning independence includes freedom to act or authority. Regarding the one's characteristics an autonomous individual is to behave based on their own initiative, discipline, and responsibility (Hidayati & Listyani, 2010; Mahayukti et al., 2017; Maba et al., 2017; 2018). On developing learning independence means being able to build students who have high initiative, can make decisions, take responsibility, and are able to manage their own learning activities. Therefore, the activities are related to task completion and become better.

The problems faced indicate the independence of student learning is still low. It can be seen from the lack of responsibility for the task, low learning initiatives, and lack of self-confidence. It is seen from the doubts and lack of activeness of students expressing their ideas. Though, learning independence has an important meaning in determining learning success. Marcou & Philippou (2005), explained that there is a positive relationship between learning independence and student learning outcomes. Likewise, Tahar & Enceng (2006), proved that learning independence has a significant effect on improving learning outcomes.

Providing a learning environment directs students to consciously use their knowledge and provide an active role on learning. The assessment process is very important. Therefore, they are more familiar and able to recognize their strengths and weaknesses (Sarkar & Kumar, 2016; Bordelois et al., 2018).

Self-assessment is one of the assessment techniques. It emphasizes student involvement in the assessment process. Due to self-assessment is a self-assessment conducted by students in a reflective way to compare their relative position with established criteria. On applying self-assessment expects students to do self-reflection, their strengths, and weaknesses, and their status or achievements in a competency will be known. Through the reflection process really helps students make for their assessment. What has been conducted to achieve learning goals, what strategies are implemented, and how far the goal's achievement. Likewise, the reflection skills and metacognitive elements applied to the implementation of self-assessment are transformed into self-regulation. It defines self-assessment leads students to be able to independently learn.

The KWL implementation is a method of learning that emphasizes on student activity, before, during, and after learning activities. It is very important to help students become independent learners. The students in the initial stage are required to actively explore initial knowledge about a topic. It is then guided determining learning objectives on setting questions (Wartawan, 2017). They must be sought for answers. Finally, the students are given the opportunity to conclude their own answers to questions raised and new information learned. In fact, KWL provides opportunities for students to manage their own learning activities from planning, implementation, to the monitoring and evaluation stages of their learning achievement. It will improve student learning abilities. Wherein, the students who have high learning abilities. They have a tendency to be more confident and the active role on learning and assessment effect the process of becoming

independent learners. Therefore, the current research activity is focused on investigating the effect of the KWL learning method and self-assessment on learning independence.

2. Materials and Methods

The present research is experimental research (quasi-experimental) using 2x2 factorial design. The study population was all students of class XI SMK Negeri 2 Singaraja on the academic year 2017/2018. They are 282 people and spread into nine classes. The research sample was determined by random sampling. However, the equality test was firstly conducted using a t-test. Due to the homogeneous assumptions were not met when using the F-test. There were five classes that had equivalent abilities, namely the two classes product service, one class fashion, two classes hospitality. Furthermore, the sample was determined using a lottery. They were obtained on the product service class, one fashion class, and two classes hospitality on 124 students. 62 students are the experimental group that came from product and fashion class students. They were the control group that came from hospitality class students. Furthermore, research data in the form of learning independence scores were collected using a questionnaire. The data is then analyzed using two-way analysis of variance (ANAVA AB).

3. Results and Discussions

This research was conducted on the learning situation for the fashion design subjects at applying the KWL learning method and self-assessment to measure student learning independence. The research results and its discussion are presented as follows.

3.1 Differences on learning independence between students participating KWL learning and students participating on conventional learning, towards students given self-assessment

The research hypothesis proposed is the students learning independence. They take KWL learning. It is higher than students who take conventional learning. The students who are given self-assessment. Hypothesis testing is conducted using one-way ANAVA. It was obtained the coefficient F_{count} 28.09. it is higher than $F_{table\ (0.05)}$ 4.03 (28.09> 4.03). Thus, the null hypothesis (H0) is rejected. The alternative hypothesis (H1) is accepted. It defines there are differences between the two groups. The average score of learning independence was the group of students who took KWL learning 121.21. Meanwhile, the group of students who took conventional learning was 110.52. Therefore, the research hypothesis is accepted.

The KWL directed students to be active, before, during, and after learning activities. The systematic steps provide an opportunity for students to be actively involved on their own learning activities. In the first stage, the students are required to explore initial knowledge related to a topic/material. They are given the opportunity to determine learning goals. They are free to look at a problem from a variety of perspectives. Therefore, they are fully responsible at the last stage for concluding the answers to the goals previously set. It is gradually formed as an automatic person. Chi Fan (2010), proved that through systematic and explicit steps in reading, able to foster autonomy and self-awareness on learning. It defines the KWL systematic steps to help students manage their learning activities, foster activity, initiative, and responsibility. Those are indicators of learning independence.

The students continue to actively organize on implementing KWL, to what they learn to achieve learning goals. It gives them the opportunity to find conceptual relationships, in order to construct their understanding. It defines giving them full power using a variety of problem understanding strategies. Thereby, increasing their ability to organize and control their own learning activities. The KWL is able to improve student's skills on learning and processing information and to improve independent thinking (Lismayanti, 2014). Likewise, the atmosphere of active learning created by the KWL implementation shows a significant role in increasing learning independence (Safari, 2013).

The KWL implementation actually on learning indirectly encourages students to apply independent learning (Fengjuan, 2010). It defines the encourage students to take over and control their own learning

activities ranging from setting goals, choosing problem solving strategies, monitoring progress, and being responsible for learning achievement. It is systematic steps provide the opportunity for students to be actively involved in organizing their own learning activities. On providing the opportunity to set initial goals to make them more motivated. Marcou & Philippou (2005), revealed there was a positive relationship between motivation and learning independence. Thus, giving a goal is one way can be conducted to improve student learning independence. Santrock (2015), also stated that students who know their own learning goals are more motivated to learn. Furthermore, to achieve these objectives, the students are free to explore. It makes them more creative and highly initiative using various strategies to solve problems.

The use of self-assessment allows students to play an active role in the management of their own learning (Zarei & Uselfi, 2015). The students who conduct self-assessments are aware of their strengths and weaknesses. Therefore, they have a sensitivity to themselves. It helps them become more familiar with the learning process and makes them able to manage their own learning. A similar opinion was also expressed by Marhaeni *et al.,* (2017), self-assessment helps students move into independent learners. Likewise, Tapia & Panedero (2010), showed that self-assessment has a significant effect on increasing learning independence. Moreover, this self-assessment is used on KWL learning conditions. Thus, the students also have high learning abilities. Wherein, they have high learning abilities mastering a tendency to become more confident. Their active involvement on learning activities and assessments affect the process of becoming learners who are independent. It is supported Dafei (2007), stated that the students who are proficient on learning are more automatic than students who are less proficient. Then, it can be concluded that the conditions created due to the KWL implementation to students who use self-assessment improve learning abilities, which in turn, increases self-confidence and autonomy, both of which are aspects that build independence.

The study result is in accordance with Safari (2013), stated that the learning independence of students who take KWL learning is higher than students who take conventional learning. Therefore, the study results reinforce the conclusion. There are differences on learning independence between students who take KWL learning and students who take conventional learning, on students who are given self-assessment.

3.2 Differences on learning independence between students participating KWL learning and students participating on conventional learning, towards students given peer assessment

The research hypothesis proposed is students learning independence who take KWL learning is higher than students who take conventional learning, towards students who are given peer assessment. The testing results using one-way ANAVA get the coefficient of F_{count} 0.78 and $F_{table\ (0.05)}$ 4.03 (0.78 <4.03). Therefore, the null hypothesis (H0) stated there is no difference between the two groups is accepted. For students who were given peer assessment, the average score of students learning independence who took KWL learning (114.93). The students who took conventional learning (113.10) showed insignificant differences. Therefore, the research hypothesis was rejected.

Zarei & Uselfi (2015), explained peer assessment and self-assessment allow students to play an active role in the management of their own learning. Likewise, Fun Liu & Carless (2006), stated that peer assessment provides information that students can use to conduct further self-assessment. The description indicates peer assessment and self-assessment are alternative assessments. If it is compared, it will indicate no significant difference. It was reinforced Zarei & Uselfi (2015), stated that there is no difference on learning independence between students who are given peer assessment and students who are given self-assessments. Thus, the peer assessment when applied to KWL learning conditions will show better results than applied to conventional learning conditions. However, this study shows different results.

There is number of factors can explain the research findings. The students learning independence who took part on KWL. The students as well as who took conventional studies did not show a significant difference in students using peer assessment. *First*, they may know themselves to be research participants and know the purpose of why they are taught with conventional learning methods distinguish them from students in other groups who are taught by the KWL learning method. Therefore, they push themselves to be able to compensate and even exceed the student's performance. They try to show themselves and save themselves on the shame as research subjects.

Second is a socio-cultural background. The students who are research subject are students who learn on conditions are full of competition and the development of science and technology. Therefore, on conventional

learning is teacher-centered when peer assessment. Their experience a surge in motivation, due to they feel valued and involved in learning. It is supported Zarae & Uselfi (2015), stated that the behavior and context of learning have a significant effect on student motivation. Likewise, the use of peer assessment techniques enables them to find ways to successfully exceed other student's performance and teacher expectations.

Third, the effect of other latent variables are not involved by researchers is learning motivation. Pintrich (1999), stated that motivation has an important role on supporting and increasing learning independence. Furthermore, Marcou & Philippou (2005), also revealed a positive relationship between motivation and learning independence. The motivation refers to the power drives a person to get involved task or pursue certain goals. The learning independence is related to the reason for a student to learn or try hard to achieve the desired goals. They who have high academic motivation are better able to use learning strategies and demonstrate good learning independence. High and low motivation is related to high and low learning independence. It can be explained the high students learning independence who are given peer assessment. The students who take learning with conventional methods are also effected by motivation variables. Therefore, it can be concluded there is no difference on learning independence between students who take KWL learning. The students who take conventional learning, toward students who are given peer assessment due to factors (a) john henry effect, (b) socio-cultural conditions, and (c) effect of other latent variables are not investigated on learning motivation.

3.3 Effect of interaction between KWL and self-assessment on learning independence

The research hypothesis proposed is an interaction effect between the KWL learning method and self-assessment of learning independence. Hypothesis testing conducted using two-way ANAVA obtained coefficient F_{count} 9.22 and $F_{table\ (0.05)}$ 3.94 (9.22> 3.94). Thus, the null hypothesis (H0) is rejected. There is an effect of the interaction between the KWL learning method and self-assessment on learning independence. Thus, the research hypothesis is accepted.

The effect of KWL on learning independence is also determined by self-assessment. Wherein, higher learning independence is owned by students who are given self-assessment and participate on KWL learning. On forming of learning independence involves student autonomy, learning methods emphasize activeness during learning activities unlike, KWL provide opportunities for students to organize and manage their own learning activities. Attaprechakul (2013), stated that KWL systematic steps help students become strategic learners. Wherein, the strategic learners are better able to organize their learning activities, reflect, and use metacognitive abilities well. Indeed, the KWL implementation on learning indirectly applied independent learning, due to the students are given the opportunity to set goals and choose the right problem-solving strategies. It was given the opportunity to determine on planning, implementation, monitoring, and learning activities evaluation. Thus, they are more initiative, active, and responsible for achieving their learning goals. They move as autonomous learners who are able to plan, manage, and control their own learning activities.

Furthermore, the self-assessment involvement has a role on determining learning independence. It makes students more familiar with themselves. The students who conduct self-assessments are encouraged to evaluate and assess themselves to find out their strengths and weaknesses. Therefore, they can determine improvement plans. Due to if the students are able to assess themselves well, they will get used to being honest and objective about their weaknesses and strengths. They are able to use these strengths to overcome their weaknesses. It makes them more confident on learning. Thus, they are able to organize their own learning activities.

For the students who were given self-assessments, they took KWL learning showed significantly higher learning independence (121.21) than students took conventional learning (110.52). it is due to the KWL and self-assessment support each other on increasing student learning independence. Learning methods and assessment techniques emphasize activeness if they are applied together can support autonomy and confidence. However, the students who were given peer assessments. They took conventional learning showed lower learning independence (133.10) compared to students who took KWL learning (114.90). This is due to self and peer assessments are authentic assessments having the same effect. If it is paired with KWL, they will show better results.

The circumstances as described above do not affect the statistical tests results which suggest there is an effect of interaction. Due to after further testing it turns out the student learning independence is given peer

assessment in the group of students who take KWL learning and in groups of students who take conventional learning does not show a significant difference. Therefore, the explanation reinforces the conclusion that there is an effect of the interaction between the KWL learning method and self-assessment of learning independence.

4. Conclusion

It can be concluded based on the research findings (a) there is a difference on learning independence between students who take KWL learning and students who take conventional learning, toward students who are given self-assessment, (b) there is a difference on learning independence between students who take KWL learning and students who following conventional learning. The students are given peer assessments, and (c) there is an interaction effect between the KWL learning method and self-assessment on learning independence. The further results tests show (1) the students learning independence who take KWL learning and are given self-assessment higher than other students, (2) the students learning independence who take KWL learning and are given peer assessment is higher than students who take conventional learning and are given self-assessment. However, it is not higher than students who take conventional learning and are given peer assessment, and (3) the students learning independence who take conventional learning and are given self-assessment are no different from students who take conventional learning and are given peer assessment.

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