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Students' Awareness of Reproductive Health and Learning Achievment in Problem Based Learning Syntax Assisted with Facebook

Nuryatul Afifah[1✉], Andreas Priyono Budi Prasetyo[1], Priyantini Widiyaningrum[2]

Biology Department, FMIPA, Universitas Negeri Semarang, Indonesia

Info Article	Abstract
	Learning Biology on the subject of reproductive system often only emphasizes biological aspects rather than reproductive health education aspects. This study aims to identify the effect of problem based learning (PBL) assisted with Facebook on learning achievement, reproductive health awareness, and the relationship of learning achievement with reproductive health awareness. The design of this research is a quasi experiment with a non-equivalent control group design pattern. The population is all students of class XI IPA SMA Negeri 1 Jakenan. This research used purposive sampling technique obtained from class XI IPA 2 (40 students) as an experiment group and XI IPA 3 (42 students) as a control group. The implementation of learning is measured by observation sheet and student responses to learning activities. The score of learning result obtained through posttest. The awareness of reproductive health is measured through the scale of reproductive health awareness. The data of this research were analyzed quantitatively with the help of Ms.Excel software and SPSS version 23. The results showed that PBL that assisted with Facebook had a significant effect on learning achievement and students awareness of reproductive health. According to the correlation test, there is a very strong positive relationship between student learning achievement and students' awareness of reproductive health.

✉ Correspondence:
Gedung D6 Lt.1 Jl Raya Sekaran Gunungpati Semarang
E-mail: nuraytul.afifah@gmail.com

INTRODUCTION

Nowadays students are studying biology with only one sub-topic reproduction system, but the aspect of reproductive health awareness is rarely discussed. That makes adolescent knowledge about reproductive health is inadequate. Only 10% of adolescent girls and 10.6% of boys aged 15-19 years have comprehensive knowledge about HIV-AIDS and less than 20% of girls or boys know one or more symptoms of sexually transmitted diseases (BPS, 2012). Research data showed that the number of new HIV infections from July-September 2013 touched 10,203 cases, with 14.7% of patients aged 20-24 years (Kemenkes, 2013). Abortion is also an issue of reproductive health due to free sex behavior. Every year the number of abortions in Indonesia is estimated to reach 2.4 million people (BKKBN, 2012). The lack of adolescent knowledge about reproductive health can significantly increase the risk of reproductive health.

Awareness of reproductive health is a problematic topic and needs to be addressed appropriately. Adolescent deviations on reproductive health caused of their ignorance about healthy reproduction. Generally, it is due to less knowledge, less motivation and less support to understand the healthy reproductive system properly. Adolescent knowledge of puberty has a significant relationship with hygiene behavior at the time of menstruation (Suryati, 2012). The knowledge possessed by teenagers provides a broad insight and provides an understanding of the importance of maintaining reproductive health. It should also be supported by student motivation for healthy living and adequate social and economic support. The cultivation of knowledge about reproduction health is necessary to increase the awareness of students in maintaining their reproductive health.

In order to improve the understanding of the material as well as providing appropriate reproductive health education is to apply the learning model. Biology learning has a role to encourage students to build their own concepts, through the scientific approach, is contextual, involving aspects of the everyday life of the students. Problem based learning (PBL) is student-centered that develop problem-solving thinking and skills through real-life problem analysis (Etherington, 2011 & Hosnan, 2014). Problems are given to tie students' curiosity for learning. PBLs focus on learning processes that interpret self-reflection, learning common issues and the overall outcome of cases determining their own answers (Marra et al, 2014). Through PBL-based learning can show the relationship between self-regulated learning (SRL) and self-efficacy (Demiroren et al, 2016). PBLs for sex education has been shown to be an effective way of promoting sexual knowledge and sexual behavior (Kim & Shin, 2016).

The consciousness is a state of understanding, a thing that felt or experienced by a person. There are 3 symptoms of consciousness that are symptoms of cognition or recognition, symptoms of feelings and symptoms of willpower (Atkinson et al, 1983). The healthy reproduction of adolescents is physical, mentally and socially wholly intact, not solely free of disease or disability related to reproductive systems, functions and processes, in men and women (BKKBN, 2012). The notion of healthy here does not merely mean disease-free or free from disability but also mentally and socially cultural. Awareness of reproductive health is a state of understanding of reproductive health to maintain reproductive health.

Learning outcomes are obtained based on inductive--deductive thinking ability to synthesize information. The results of this study are limited to the mastery of students' concepts of reproduction system material. Mastery of concepts by students is not just about recognizing a concept but students can connect one concept with another concept in various situations (Rizal, 2014). Understanding the concept is part of a larger concept is important because it allows us to deduce the characteristics of the larger category in the smaller category (Jacobsen et al., 2009). Understanding the concept is a very fundamental thing in learning because understanding and mastery of a material or concept is a prerequisite to master the next material or concept (Karim, 2011).

Based on these descriptions, this study aims to identify the effect of problem—based learning (PBL) assisted with Facebook on learning outcomes, reproductive health awareness, and the relationship of learning outcomes with reproductive health awareness. The implementation of the PBL model assisted with Facebook is expected to develop the lifelong learning skills of the students that can be used as a provision in real life and the students are able to connect the concept of learning with daily life.

RESEARCH METHOD

The design of this research is quasi experiment with a non-equivalent control group design pattern. The population is all students of class XI IPA SMA Negeri 1 Jakenan. This research used purposive sampling technique obtained from class XI IPA 2 (40 students) as an experiment group and XI IPA 3 (42 students) as a control group. The experimental class was received learning of PBL assisted with Facebook on reproduction system materials and control classes with a simple discussion model. The research data includes the implementation of learning, learning outcomes, and students' awareness of reproductive health. The implementation of learning and awareness of reproductive health were quantitatively analyzed while learning outcomes were tested on average (t-test), regression and correlation with the help of SPSS version 23 software.

The research instrument consisted of the observation sheet, student's responses to the learning process, pretest and posttest, and reproductive health awareness scale. The pretest and posttest questions were tested first to confirm the validity, reliability, differentiation, and difficulty of problems using ANATES version 4.0.9. For the scale of awareness of reproductive health is validated by the experts in the field. The research procedure consists of the preparation stage, the implementation stage and data analysis stage.

RESULT AND DISCUSSION

The Awareness of Reproductive Health

Students' awareness of reproductive health was measured by the scale of consciousness developed from the awareness of symptoms according to Atkinson et al (1983). Scores of students' reproductive health awareness that have been analyzed can be seen in Figure 1.
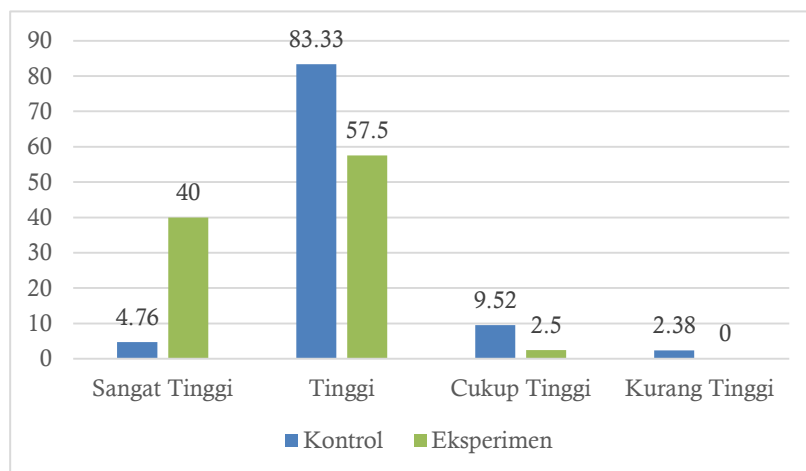

Figure 1 Comparison students' reproductive health awareness percentage of experimant class and control class.

The graph above shows that the percentage of reproductive health awareness score in the control class has a diverse distribution, whereas the percentage of total reproductive health awareness score in the experimental class is only scattered at very high, high and quite high criteria. From the selected sample (n = 40), the research method used (quasi-experiment) and the data that have been obtained can be mentioned that the implementation of PBL assisted with Facebook tends to have significant influence to the students' awareness of reproductive health.

The implementation of PBL assisted with Facebook in the experimental class tended to have a significant effect on students' awareness of reproductive health. The identified problems provide a real experience for students and stimulate students to organize the knowledge they have previously. The use of Facebook and giving problems helps students to open insights about reproductive health becomes wider. Students are led to understand the abnormalities in the reproductive system so that students have the knowledge and tend to be aware of healthy reproduction. Marra et al (2014) describes PBL has the characteristics of familiarizing students for self-directed and self-reflected. Self-directed is the ability to regulate self-thinking, feelings and actions to achieve educational goals, while self-reflected is the ability to reflect learning outcomes. With self-regulation and self-discipline, students are able to process the information obtained to be applied in the real world.

Knowledge and understanding form a person's consciousness, subsequent awareness will affect the tendency to behave and how one behaves. Knowledge of reproductive health is indirectly contained in the competency standards that describe the structure and function of certain human and animal organs, abnormalities and or possible diseases and their implications on mutuality. According to Green as quoted by Notoatmodjo (2007) explains that knowledge is a predisposing factor that affects a person's behavior, those with high knowledge are expected to have positive behavior.

The implementation of PBL assisted with Facebook delivers students to know and understand various issues related to the reproductive system. The contextual material helps students connect the content they learn to the contextual life in which content can be used. Students then find meaning in the learning process. As they strive to achieve learning goals, they make use of their previous experiences and build on existing knowledge (Ampa et al, 2013). The cultivation of knowledge and understanding of reproductive health is the importance of maintaining the health of reproductive organs on a daily basis and to give impact to students' awareness to maintain reproductive health.

In the end, it was found that the students' reproductive health awareness was higher in the experimental class than in the control class. High reproductive health awareness in the experimental class can be caused by several factors, such as teachers who are better in conveying the information clearly to the students, the level of creativity and intelligence of high students—students who are more actively seeking information outside Facebook about the reproductive system and reproductive health. Another factor that affects is the release of the experimental class to open a smartphone or laptop. In addition, to open the Facebook, students are free to find other sources on the internet so as to provide more than enough sources for the provision of knowledge of students. While in the control class is not given the facilities in such a way, the sources of student learning are only textbooks and teachers.

Students' Learning Achievement

Student learning achievement is obtained from posttest, then data from the experiment class and control class are tested on average (t-test) as shown in Table 1.

Table 1 The result ofl *t-test* independent data *posttest* control class and experiment class.

		Levene's Test for Equality Variances		oft-test for Equality of Means				Std. Error Diffe-rence	95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference		Lower	Upper
Post-test	Equal variances assumed	,042	,839	-5,115	83	,000002	-11,1766	2,1851	-15,52282	-6,83044
	Equal variances not assumed			-5,117	82,989	,000002	-11,1766	2,1842	-15,52099	-6,83227

Table 1. shows a significant difference between the PBL assisted Facebook in the experimental class and the simple discussion method in the control class. Supported by the research method used and the number of students (n = 40) with four meetings. From the analysis of data, it can be concluded that the class with the implementation of PBL assisted with Facebook tend to make a positive contribution to the experimental class.

The difficulty of students in understanding the concept is that most of the scientific ideas are not closely related to the daily life of the students, consequently, the student is forced to try to match his experience with the learning process at school (Richmond et al., 2010). Through examples of problems close to the life of students, will make students understand the concept of the fundamental and not just memorize the concept, so as to improve understanding of the concept of the material reproduction system. PBL is a learning that is based on real problems that need authentic investigation, so that through these activities will accommodate students to explore, discover and master the concept of learning materials (Trianto, 2011). Implementation of PBL can improve habits of mind, emotional intelligence, and mastery of concepts (Daryanes et al, 2016).

PBL is an innovative learning model which emphasizes contextual learning through complex activities. Learning contextual helps students connect the material they learned to their real-world situations and encourage students to make connections between their knowledge and application in daily life (Widarti, 2013). Through the PBL assisted with a facebook model, students are also treated to videos and articles that are able to attract students' attention to the deeper understanding of the reproductive and reproductive health systems.

Video learning has the advantage of presenting concrete learning objects so it is good to add to the learning experience. In line with Erlianti's (2017) study, the use of contextual learning based videos on reproduction system materials can improve student learning achievement in high school. Besides videos, researchers use several articles to be able to deliver students in connecting problems with the concept of learning. By using the article is also able to increase student literacy and able to improve student learning achievement. The development of an article enhancing learning model has been done by Solikhin (2015). The result is a learning model of circulatory system supplemented eligible article developed and have a significant effect on learning achievement.

The use of PBL model assisted with Facebook can improve students' learning achievement and students' awareness of reproductive health. In line with research that conducted by Herlambang (2013) and Ariani (2012) which shows that the implementation of the learning model of PBL assisted with social media can improve learning motivation and student learning achievement. The identified problems provide a real experience for students and stimulate students to organize the

knowledge they have before. By finding the concept of self-learning students will easier to understand the learning materials.

Student engagement during learning will trigger the students to be more active, enthusiastic, motivating and raising curiosity in learning activities. This is can be indicated from the curiosity of students by asking the various problems they find in everyday life. The enthusiastic students in learning make them exchange information with each other, participate and be active in learning through discussion so that complement each other information and build concepts together. Teacher's creativity in teaching and providing authentic assessment is also an important part to produce a successful learning. Several authentic assessment formats are used, such as graphic graphing (concept map, Venn diagram, Vee chart), portfolio, oral presentation, interview, skill observation list, self-evaluation, peer evaluation, etc. (Prasetyo, 2015). The teacher uses concept maps, diagrams, pictures and videos to be used as an assessment tool to find out the extent to which the students' abilities.

The implementation of the PBL model assisted with Facebook has some drawbacks despite the differences in learning achievement and awareness of reproductive health between control class and experiment class. Facebook is only used to upload material problems, videos and presentation materials that teachers use to explain the concepts. Discussion of reproduction issues remains in the classroom. Facebook in this learning is still accompanied by a textbook so that the use of Facebook by the students remains limited.

The next obstacle is that teachers and researchers cannot control each students using Facebook, teachers and researchers can only limit with the compaction time and learning targets of LDS that must be completed before the hours of completion. Teachers and researchers cannot control students to open an internet site while learning takes place. The next obstacle is the readiness of students to be able to access Facebook. Not all students can access Facebook properly during class time. The last factor is the economic status of students, so not all students have a smartphone or laptop, although there they are not all can connect to the internet.

Relationship between Learning Achievement with Student Reproductive Health Awareness

The awareness of reproductive health is a state of understanding of reproductive health to maintain reproductive health. Prasetyo (2001) points out, awareness of environmental issues means being evident mental issues means being environmentally knowledgeable and understand ing the informed actions required for finding the solution to the issues. So, the theory can be explained that the indicator of awareness is knowledge and understanding. In the field of psychology states that consciousness includes three things, namely perception, thought and feeling (Atkinson et al, 1983). Awareness can be interpreted as knowledge and understanding that includes perceptions, thoughts and feelings of a person. It can be said that knowledge and consciousness are related.
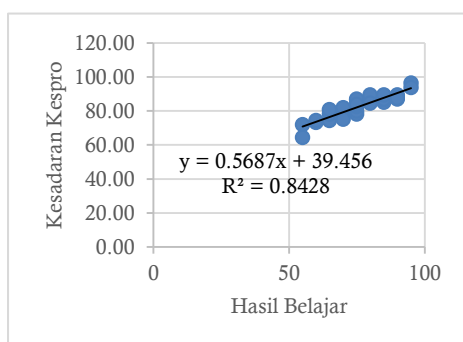

Figure 1 Relationship between Learning Achievment with Student Reproductive Health Awareness in experiment class.

Figure 1. shows that the value of learning achievement with positive reproductive health awareness is positive. Where the axillary value of student learning outcomes is high, the level of student awareness of reproductive health is also high. Pearson correlation index of 0.92 with the R2 value of 0.84 the relationship between learning achievement and awareness of reproductive health is very strong. Knowledge and understanding will trigger individual awareness. Awareness can be reflected in his attitude and behavior. Attitudes toward behavior are influenced by the belief that the behavior will lead to desirable or undesirable outcomes (Azwar, 2005).

Prasetyo (2001) explains that the indicator of awareness is knowledge and understanding. It can be interpreted that knowledge affects one's consciousness, because awareness built by knowledge and understanding. This opinion is supported by the research of Darmawan et al (2010) which showed the existence of the casual relationship between knowledge variables, behavior, and the role of positive and significant correlates to environmental awareness. In this study shows the relationship between knowledge and awareness. Roger's (1974) study reveals that before people adopt new behaviors, in that person a consecutive process begins with consciousness. Knowledge and understanding build awareness, the conscious condition will bring about the tendency to behave, then tendency will lead in taking action and behavior. In another sense before the formation of attitudes, behaviors, and actions first, have an understanding and awareness.

High knowledge of reproduction system materials generally contributes to the level of awareness of students to maintain their reproductive health. With the knowledge of the reproductive system a person knows and understands the reproductive system, so that will affect self-awareness to maintain the health of reproductive organs. Starting from the cognitive symptoms of the knowledge it possesses, students will recognize the structure and function of the reproductive organs. Furthermore, the psychology of students will enter the stage of willingness that all the actions, movements and behavior that comes from within himself. With the extensive knowledge, students are actually aware of how healthy reproduction is, but the willingness to do in terms of maintaining reproductive health depends on the will of the students.

Knowledge affects students' awareness of attitude, whereas healthy reproductive attitudes and behaviors are not always done. From the student interview after the completion of learning and post-test explains that not all knowledge and awareness is applied in everyday life. The reason for a healthy life was driven by economic factors and students' social environment. From the teacher also added that the economic factor became one of its influences.

CONCLUSSION

The implementation of problem based learning (PBL) model assisted with Facebook on reproductive system has significant effect on learning achievment and students' awareness of reproductive health in SMA Negeri 1 Jakenan. Furthermore, there is a very strong positive relationship between students' learning achievment and students' reproductive health awareness. From this research, the school is expected to apply problem-based learning (PBL) model assisted with Facebook to develop the lifelong learning skills as stock in real life. Associated with measured consciousness scale should be tested to determine the validity of the instruments.

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