Research-Based Learning Learning for Students in Higher Education

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Abstract

The purpose of this paper was to examine the theory in depth about research-based learning for students in higher education. Systematic Literature Review (SLR) was used as a method of analyzing a wide range of articles and literature was obtained through searching of data sources. The results of the analysis of various sources elaborated reviews about Research Based Learning (RBL) can strengthen students to be active in learning. RBL makes students; 1) have a strong understanding of basic concepts and methodology, 2) solve problems creatively, 3) have a scientific attitude that seeks the truth, is open and honest. RBL provides students with the opportunity to develop contextual concepts by discovering new things from the research process and based on student centered learning in higher education.

Keywords: Research-Based Learning, Students, Higher Education

INTRODUCTION

According to Mukaromah (2020), the learning model that leads to these benefits is Research Based Learning. According to Poonpan & Suwanmankha (2005) and Dafik (2015: 6) explain that Research Based Learning is a learning system that uses authentic-learning (learning using real examples), problem solving (problem solving), cooperative learning (cooperative learning), contextual learning (hands on and mind on) and inquiry approach (determining something) which is based on the philosophy of constructivism. Linguistically, the term Research Based Learning uses English, which means research or research-based learning. Research Based Learning is one of the learning models developed by constructivism. Research Based Learning is a learning model that leads to analysis, synthesis and evaluation activities and improves the abilities of students and lecturers in terms of assimilation and application of knowledge (Widyawati, 2010). Basically, according to Mukaromah (2020), the implementation of RBL has the main target, namely encouraging the creation of high-level thinking skills and encouraging students to become creative.

RBL is a learning model that makes problems in research groups the main discussion in lectures. A lecturer in a lecture does not only present old concepts, concepts that are not phenomenal, let alone not contextually appropriate to the development of the times or science itself, but a lecturer must present studies according to findings in accordance with the latest scientific developments in the study group. The implementation of learning is based on the philosophy of constructivism which is characterized by the application of a contextual teaching and learning approach, discovery learning, project based learning, and also includes four aspects, namely: learning based on problem posing (problems posed based on research developed by lecturers in the study group), learning based on recent prior knowledge, namely based on new and latest research results, determining problem solving procedures in accordance with modern research methodology, and finally analyzing and testing the correctness of the data. RBL learning also contains problem-based learning in it (Dafik, 2015).

METHOD

The method used in this study is Systematic Literature Review (SLR). This method is considered right to produce a synthesis or various fusion reliable academic literature and accurate (Chlakiadaki, 2018). Data collection is done with using google sholar, scopus, ERIC in the forms of article journals, books, reports and article seminar proceedings. All data that obtained is analyzed for presend in a review of this article thorough and structured. Systematic literature review is a type of research method that seeks to conduct identification, evaluation and interpretation of all research results related to a particular research question, topic, or phenomenon of interest (Kitchenham, 2004).

Systematic literature reviews will be very useful for synthesizing various sources relevant research results, so that the facts are presented to policy makers become more comprehensive and balanced (Siswanto, 2010). A literature research review was conducted for various objectives, including providing a theoretical background for research next, study the extent of research on a topic of interest, or answer practical questions by understanding what existing research says about the problem (Okoli & Schabram, 2010).

RESULT AND DISCUSSION

Research Based Learning (RBL) can strengthen students to be active in learning. This is in line with what Arifin (2010) said, Research Based Learning (RBL) makes students; 1) have a strong understanding of basic concepts and methodology, 2) can solve problems creatively, 3) have a scientific attitude that always seeks the truth, is open and honest. The priority characteristic of the Research Based Learning (RBL) learning model is not the lessons that must be mastered, but the mastery of skills about how to learn and trying to develop self-confidence in terms of learning. Students are accustomed to searching and finding themselves, so that students are accustomed to facing and solving problems.

Research Based Learning (RBL) is a form of learning that directly confronts students with a number of learning resources individually or in groups with all related activities. The target of implementing Research Based Learning (RBL) is to encourage the creation of high-level thinking skills in lecturers and students. Students are not only given knowledge and information but must be taken to a higher level, namely creating. Achieving this level in learning theory is known as achieving high-level thinking skills which is translated from the phrase High Order Thinking Skills (HOTS). The Research Based Learning (RBL) model is one of the steps to achieve effective learning. Research Based Learning (RBL) is a student centered learning (SCL) method that integrates research into the learning process. By using Research Based Learning (RBL), students can be trained to think critically, creatively, and carry out research activities such as conducting research, conducting searches, formulating hypotheses, collecting data and processing data, and drawing conclusions. (Trisnasih, 2013) concluded, "research-based learning provides students with the opportunity to develop contextual concepts that emphasize real situations with stages that must be passed by discovering new things from the process of conducting research."

According to Widayati (2010) research-based learning is a student-centered learning (SCL) method that integrates research into the learning process. Some research-based learning models include:

a. Enriching teaching materials with lecturer research results;
b. Using the latest research findings and tracing the history of the discovery of these latest developments;
c. Enriching learning activities with contemporary research issues,
d. Teaching research methodology material in the learning process
e. Enrich the learning process by involving students in research activities
f. Enrich the learning process by involving students in institutional research
g. Enriching the learning process with the values that researchers must have.

Research Based Learning (RBL) model can be used as a learning reform in higher education to improve the quality of learning and graduates who are ready to face the 21st century; work ethic, collaboration, good communication, social responsibility, critical thinking and problem solving (Lahamuddin, 2015). Research Based Learning (RBL) provides opportunities or opportunities for students to search for information, formulate hypotheses, collect data, analyze data and make conclusions on the data that has been compiled; In this activity, learning applies using a learning by doing approach. Therefore, Research Based Learning (RBL) opens up opportunities for developing learning methods, including:

a. Learning renewal integrates research results;
b. Learning using research instruments;
c. Active participation of students during research; And
d. Development of an inclusive research context (students study research procedures and results to understand the origins of synthesis).

Research Based Learning (RBL) model can be developed in accordance with the characteristics of scientific studies and the condition of the facilities available in the educational unit concerned. The strategy for implementing Research Based Learning (RBL) should really be considered so that the implementation of Research Based Learning (RBL) is effective and the objectives of Research Based Learning (RBL) are achieved.

The following are several strategies for combining learning and research that have been empirically developed:

a. Enriching teaching materials with lecturer research results. In this learning process, the results of the lecturer's research are used to enrich teaching materials. Lecturers can present the results of their research as real examples in lectures, which are expected to serve to help students;
b. Understand research ideas, concepts and theories. In this activity, values, ethics and research practices that are appropriate to the field of science being taught can be conveyed to provide inspiration to students.

Implementing this research-based learning model will provide benefits for students, lecturers and study programs. Learning using Research Based Learning (RBL) will make learning time more efficient, because it is integrated in the research process, and will be more effective because they discover the theory they are studying for themselves. The benefits of Research Based Learning (RBL) have been known for decades, some literature equates it with Project-Based Learning because there are almost no projects that do not involve research. The Project Based Learning model according to Ambarwati, Dwijnato, & Hendikawati (2015) is a learning model that uses projects/activities as a medium, where students carry out exploration, assessment, interpretation, synthesis and information to produce various forms of learning outcomes. According to Nugroho, Chotim, & Dwijanto (2013) describe that Project Based Learning is effective in improving creative thinking abilities, based on previous theory which explains that RBL is based on PBL, so this RBL is also expected to be able to familiarize and improve students' creative thinking, in this case students in learning Graph Theory.

Jenkin et. al. in (Yahya, 2010), explains the advantage of the Research Based Learning (RBL) model is that it gives students the opportunity to not only know the content of teaching materials, but they also have the opportunity to practice searching, forming hypotheses, collecting and helping them get better understanding and knowledge. Research Based Learning (RBL) can develop critical and creative thinking skills (Guinness, 2012). The various advantages of research-based learning are as follows:

a. Connecting theory, practice, ethics and values;
b. Provide a guarantee that the content of teaching materials includes research findings,
c. Increasing students' understanding that the choice of branch of science they study can make a positive contribution to society; And
d. Develop and improve students' skills and abilities which include:

1) Generic skills, such as critical thinking, analyzing, retrieving and evaluating information, and carrying out problem solving processes; And
2) Have excellent research skills and abilities to become a professional.

CONCLUSION

Research-based learning is to create a learning process consisting of analytical, synthesis and evaluation activities as well as improving the ability of students and lecturers to apply knowledge. From the explanation above, it can be concluded that the objectives of Research Based Learning (RBL) are as follows; timulate students' reasoning power and creativity according to their respective abilities and speed in direct connection with various sources of information in learning, increasing motivation, activeness and developing students' self-confidence in learning, providing opportunities for the socialization process for students to gain enriched knowledge and use tools, sources or places, and improving students' development in language through communicating with them about matters related to learning resources.

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