

THE ANALYSIS OF COMMUNICATION SKILLS ON BIOLOGY LEARNING PROCESS WITH CREATIVE LEARNING IN SENIOR HIGH SCHOOL

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ARTICLE INFO ABSTRACT

Received:

**Ferbruary,
26th 2022**

Revised:

**March, 15th
2022**

Approved:

**March, 16th
2022**

This article discusses how high school students' creative learning in Biology learning to improve Communication Skills. Creative learning is learning that puts the teacher forward in facilitating learning activities, so that the learning atmosphere is conducive. Communication Skills is the extent of the use of the mind in solving problems by using its thinking skills at a higher cognitive level. This type of research is development research (Research and Development), which is used as concrete evidence in increasing Communication Skills with creative learning involving 10 schools, both public and private schools, and 10 Biology subject teachers as a needs analysis. Retrieval of need assessment data using a questionnaire technique through Google Form given to high school biology teachers. The results of the need assessment show that teachers who always improve students' creative learning by 70%, implementation of the Problem Solving learning model by 30%. Teachers still have difficulties in implementing Problem Solving learning to improve creative learning by 80%. Conclusion SCICR learning can be used to increase Communication Skills and creative thinking in students. Teachers still have difficulties in implementing Problem Solving learning to improve creative learning by 80%. Conclusion SCICR learning can be used to increase Communication Skills and creative thinking in students. Teachers still have difficulties in

How to cite:

E-ISSN:

Published by:

Erika Arifiana, Suratno, Dwi Wahyuni. (2022). The Analysis of Communication Skills on Biology Learning Process with Creative Learning in Senior High School. Journal Eduvest. Vol 2(3): 523-529
2775-3727

<https://greenpublisher.id/>

implementing Problem Solving learning to improve creative learning by 80%. Conclusion SCICR learning can be used to increase Communication Skills and creative thinking in students.

KEYWORDS Communication Skills, Biology, Learning Process



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INTRODUCTION

The life of the 21st century is experiencing an accelerated flow of changing times, which is related to the development of science and technology. This of course requires superior and quality future generations to be able to compete in the current era of globalization. Especially in the field of education, many countries have developed good education systems to survive in the current era of globalization. Based on the results of the 2016 PISA, Indonesia ranks 62 out of 70 countries. From these results it is said that Indonesia still has problems in its education system, where Indonesian students still experience an inability to face a problem that requires critical thinking skills, creative skills, and high-level skills (Communication Skills) (Catal & Tekinerdogan, 2019).

Higher order thinking skills are determined by the extent of the use of the mind, so that students in solving a problem can use their thinking skills at a higher cognitive level. In Bloom's cognitive taxonomy, higher order thinking skills are in the C5-C6 domain (Sajnani, Mayor, & Tillberg-Webb, 2020). Communication Skills arise when a person receives new information which is then linked with one information with other information. The process of acquiring knowledge will run selectively and efficiently if a teacher applies a learning model that can achieve learning goals.

Creative learning can stimulate students to easily think in solving a problem from any point of view. Creative thinking skills are cognitive skills to generate and develop new ideas, new ideas as a development of previously born ideas, and different problem-solving skills (from various points of view). The ability to think creatively can be measured by giving tests on several aspects, namely fluent thinking, flexible thinking, originality thinking, and interpreting (Winata, Zaqiah, Supiana, & Helmawati, 2021). The government has also formulated 21st century skills in the 2013 curriculum which are contained in national education goals. The aim of National Education is how to create generations to face life in the future.

The learning process in obtaining knowledge will run selectively and efficiently if a teacher can apply a learning model that can achieve learning goals. The application of creative learning must be supported by relevant learning models such as the Problem Solving learning model. The application of the Problem Solving learning model can help students play an active role in learning activities, and can provide opportunities for students to increase their creativity (Albay, 2019). Based on the description above, the writer developed the SCICR (Stimulation, Classification, Investigation, Communication, and Reflection) learning model to increase Communication Skills and creative thinking in students.

RESEARCH METHOD

This study aims to analyze Communication Skills in students with creative learning in high school biology learning. This type of research is research development (Research

and Development) which is used to produce products in the form of a SCICR (Stimulation, Classification, Investigation, Communication, and Reflection) learning model which is effective for increasing Communication Skills and creative thinking in students in Biology learning. Need Assessment data was collected in the odd semester 2020-2021 using a questionnaire technique through Google Form which was given to high school biology teachers. Need Assessment data is used to find out the problems and needs that exist in schools. The results of the Need Assessment data are used to determine problems and needs that exist in schools.

RESULT AND DISCUSSION

1. Need Assessment

The results of distributing observation sheets given to 10 high school biology teachers showed the following results:

Table 1. Need Assessment

No.	Learning Activities	Teacher Response (%)
1	Improve the creative thinking skills of students in Biology learning	70%
2	Implementation of Problem Solving learning model	30%
3	Having difficulty implementing the Problem Solving learning model	80%
4	Experiencing difficulties in improving students' creative thinking skills with a learning model	70%

The results of the Need Assessment show that teachers can improve the creative thinking skills of students in Biology learning by 70%. As many as 30% of the teachers stated that they had implemented the Problem Solving learning model in high school biology learning. Teachers experience difficulties when implementing the Problem Solving learning model by 80%. As many as 70% of teachers stated that they had difficulty improving students' creative thinking skills with a learning model.

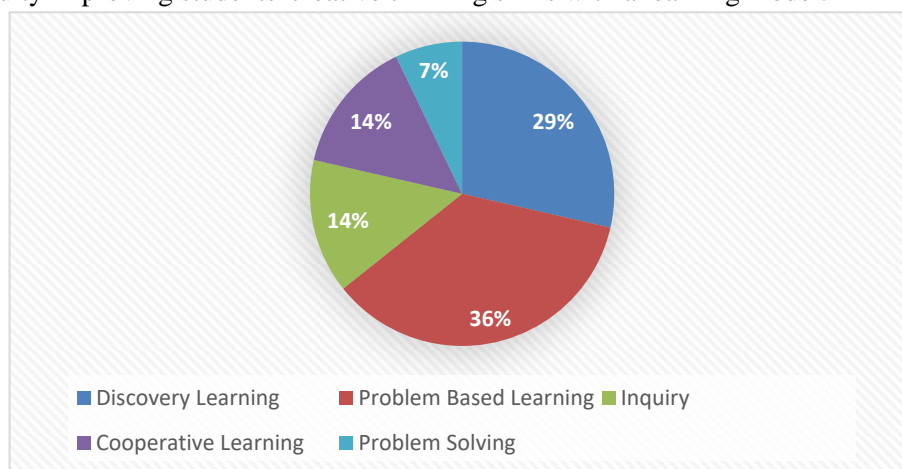


Figure 1. Learning Model in Class

The results of the teacher's Need Assessment on the use of learning models in high school Biology learning show that the most widely used Problem Based Learning model is getting a percentage of 36%. Meanwhile, the application of the Problem Solving learning model only gets a percentage of 7%.

1.1 Results of The Development of The Learning Model

This research is a development research that produces a new learning model, namely SCICR (Stimulation, Classification, Investigation, Communication, and Reflection). This research design uses 4D. This learning model was developed based on the Problem Solving model and scientific approach. The syntax in the SCICR learning model can be seen in Table 2.

Table 2. The Syntax of developing the SCICR learning model

Syntax of Learning	Learning Activities	
	Teacher's Activity	Student's Activity
<i>Stimulation</i>	Teacher give authentic problems to the students and guide students solving problems	students solve problems from the teacher and students pour ideas, idea and his opinion
<i>Classification</i>	The teacher provides a phenomenon that contains problems according to basic competency and indicators	students identify the phenomena displayed by the teacher to find problems, and students clarify the problems found
<i>Investigation</i>	Teachers assist participants and organize learning tasks in solving the problems through collecting data from various sources.	students work together in groups to solve problems and present the results of the discussion
<i>Communication</i>	The teacher provides feedback, on the results of group work of students.	students submit the results of discussion of answers to problems from the teacher and receive feedback, evaluations from the teacher
<i>Reflection</i>	The teacher reflects on the contribution of everyone in the learning process and gives appreciation to students	students provide a review of the learning carried out and receive appreciation from the teacher.

2. Discussion

1 Need Assessment

The results of the Need Assessment show that teachers always improve students' creative thinking skills in Biology learning by 70%. As many as 30% of teachers apply the Problem Solving learning model. As many as 80% of teachers experience difficulties when implementing the Problem Solving learning model. As many as 70% of teachers have difficulty improving students' creative thinking skills using the learning model. In this condition, full attention is needed to improve Communication Skills and creative

thinking of students in learning Biology in particular, because one of the skills demands in the 21st century is creative thinking (Istiyono, Dwandaru, Setiawan, & Megawati, 2020).

Communication Skills is expected that students can achieve various competencies, including critical thinking, creative and innovative thinking, the ability to work together and be confident. These five things are the target of Indonesian Education, namely 21st century skills because of the low rankings of the Program for International Student Assessment (PISA) and Trends in International Mathematics And Science Study (Listiani & Sulistyorini, 2020).

The results of the Need Assessment indicate that the application of the Problem Based Learning model most often used when learning Biology is 36%. Meanwhile, the application of the Problem Solving learning model is only 7%. The reason the teacher rarely uses the Problem Solving learning model is having difficulty improving creative learning in students. Based on the above problems, the researcher developed a new learning model, namely the SCICR which was developed from the Problem Solving learning model and the Scientific approach to increase Communication Skills and the ability to think creatively in students (Wati, Lesmono, & Prastowo, 2019) (Jarvis & Baloyi, 2020).

2. Learning Model System of SCICR

2.1 Syntaxmatic

Syntax is a pattern that describes the sequence of the overall stages which are generally accompanied by a series of learning activities.

2.2 Social System

The social system is the interaction of students with other students and students with their environment. Students are encouraged to cooperate and respect each other's thoughts when other friends share their opinions. Learners are free to express opinions, ideas, and questions in the discussion. This learning can help students to be able to work together and rebuild the experiences they have with the new knowledge they have learned and to be applied in everyday life (Hooshyar et al., 2020).

2.3 Reaction Principle

The principle of reaction in the SCICR Learning Model is that the teacher acts as a facilitator of learning, such as helping students connect concepts, implementing concepts, directing groups. Other teacher activities include coordinating students to discuss the results of interaction exercises, observing students while presenting the results of discussions in front of the class, and clarifying the information presented by the community. Furthermore, the teacher provides feedback or evaluation. In the learning process, teachers motivate students to learn by providing positive feedback, to develop competencies (Johnson, 2017).

2.4 Supporting System

The support system for implementing the SCICR learning model must be owned by teachers of specific or actual problems, resources and materials for item development. The instructor also offers detailed workbooks and student discussion papers. Students must actively seek and explore knowledge through various literatures (Aini & Ridwan, 2021).

2.5 Instructional Impact

The impact of the SCICR learning model is that students are actively involved in the learning process to make learning more meaningful. Students are able to solve

problems through discussion. Discussion activities will trigger a sense of cooperation and mutual respect for one another. In addition to the practical work that will be carried out, students will be more thorough and disciplined (Zulfiani, Suwarna, & Sumantri, 2020).

2.6 Indirect Impact

The impacts are other learning outcomes produced by a teaching-learning process as a result of creating a natural learning atmosphere without guidance from the teacher.

CONCLUSION

Based on the research that has been done, it can be concluded that The SCICR learning model was developed based on the Problem Solving model and the Scientific Approach. The syntax of the SCICR model is Stimulation, Classification, Investigation, Communication, and Reflection. The SCICR model was developed to improve students' creative thinking skills and HOTS. The elements of the SCICR learning model consist of syntax, social systems, reaction principles, support systems, instructional impacts, and accompaniment impacts.

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