



PROFILE OF COMMUNICATION SKILLS IN BIOLOGY FOR XI GRADE STUDENTS OF “Y” SENIOR HIGH SCHOOL IN MADIUN REGENCY

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Abstract

Communication skill is one of the important competencies which needs to be trained continuously to compete in ASEAN Economic Community (AEC). Communication skills can be trained in education. In Indonesia, this skill is one of ten future needed competencies for every student. The purpose of this research is to analyze the communication skills of students in biology class for XI grade of Y Senior High School in Madiun Regency. This research used the descriptive method. The method of collecting data in this research was using non-test approach by analysis of learning implementation using non-participatory observation and documentation in pictures, audio, and video. The measurement of students' communication was obtained through scoring instrument with twelve indicators. They consist of 1) various data description, 2) descriptive relation data, 3) various meaning of data, 4) exploring the content of material with different ideas, 5) data validity, 6) differentiate data and conclusion, 7) clarifying questions, 8) ensuring friends' question, 9) responding friends' statement, 10) separating ideas, 11) revising opinion from friends' input, 12) concluding interesting conclusion. The analysis of data used quantitative descriptive approach. The result of the analysis showed that from twelve indicators, only two indicators appears from students' communication skills in learning biology. Those were indicator 8) 41.2% and indicator 9) 58.8%. Based on the analysis, it can be concluded that students' communication skills in biology class from XI graders of Y Senior High School in Madiun Regency was relatively low. Based on the result of the research, there should be a development of learning design which can improve students' communication skills.

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INTRODUCTION

The 21st century offers to live without any boundaries and widespread of internationalization (PIPP, 2006). Strategies are needed to answer and face this. Thus, people are needed to be prepared with 21st-century skills to improve their competence in competing for globalization (Turiman, Omar, Daud, & Osman, 2012). One of the important skills of 21st century is communication skills (NCREL, 2003; Turiman, Omar, Daud, & Osman, 2012). Beside for facing 21st century, communication skills are also important to compete in ASEAN region for the sake of ASEAN Economic Community (AEC). Vital roles of communication skills in facing AEC are empowered through different fields, particularly in education. The results of some research show that government in different countries in ASEAN region push the villagers or in the city to communicate well that it can help them improve their living quality in facing AEC era (Choomthong, 2014). Communication skills should also be prepared for working fields as the most important requirement. This statement is proved by the survey of National Association of Colleges and Employers United State of America in 2012 to 457 university. The survey shows that communication skills are placed on the first rank of working requirements. Based on the survey, these skills have highest scale scoring of 4.69 in the scale of 1-5. Communication is not only important for facing 21st century, AEC, or working requirement, but communication is also important in education and how to implement it in the learning process.

Communication skills is one of the important psychomotor skills and become inseparable part from education. The importance of this skill makes it included into science education curriculum in different countries worldwide, like Israel, New Zealand, Singapura, Taiwan, Canada, United Kingdom, Australia, United States, and Korea (Jeon & Park, 2013). Not only to developed and developing countries in this world, but communication is also needed as an important component in Indonesia's education in 2013 curriculum even if this skill is indirectly used and directly applied in 2013 curriculum, particularly in learning biology. Nonetheless, the hopes of implementing communication skills in 2013 curriculum well contradict to the facts in reality. It is proven by research conducted by (Paristiowati, Slamet, & Sebastian, 2015) showing that

communication skills of the students are not optimally empowered from the result of 52.76% and 64.67%. These results were not exceeding the optimal communication skills score of 70%. The less optimum of communication skills shows that there is a gap between hope and reality from Ministry of Education and Culture to the contradictory facts.

Some factors cause this problem, one of the factors is the improper and less maximum execution of learning activity in the classroom. The implementation of the learning process in the class should be an effective tool to empower students' communication skills. It is shown by experts' opinions stating that communication skills of students in science can be improved and applied in active participation in the learning process by discussion, debating and group presentation (Bell & Carr, 2014). Besides, the creation and innovation in creating the design of lesson plan can be an alternative way to improve students' communication skills. The integration of design and lesson plan is centered on students and creative and innovative learning method development which fulfill the required stuff for 21st century which focuses on mastering the global technology of communication and facing challenge and competition (Arsad, Osman, & Tuan Soh, 2011).

Based on this statement and previous research result, the learning process in the class give big contribution in train and empower communication skills of students. The concept and scenario of learning process play important roles in empowering students' communication skills. It shows that teachers indirectly play important roles in empowering students'. Based on the importance of communication skills and its empowerment through the learning process, there should be an observation and analysis to the execution of learning process in biology class for XI graders.

METHOD

This research used the descriptive method. The research was done by observing and take a look to the learning process in the class. The observation was done without any treatment of the researcher, whether the addition, decrease, change, or manipulation to the learning process. Based on the general procedure of the research,

the method of collecting data was using no test through observation and documentation. Methods of observation was done by analysis of learning implementation by non-participatory observation. In this research, the researcher did not do anything to the learning process (Sukmadinata, 2012). The methods of documentation were done according to the problems and focus of process to the research systematically (Sukmadinata, 2012). The documentation used in this research was pictures, audio, and video. This research was done in "Y" Senior High School in Madiun regency, particularly in biology class. The research was done in October-

November 2016. The research was done in biology class in "Y" Senior High School in Madiun regency in the material of human bone structure and human blood circulation.

The instruments used in this research was used and validated to measure communication skills of students in Taiwan. The instruments of students' communication skills consist of twelve indicators in four aspects, expression, evaluation, response, and negotiation (Tuan Soh, Osman, & Arsad, 2012; Por Chang, Chen, Guo, Cheng Y., Lin C., & Jen T., 2011). Table 1 shows the instruments used in this research.

Table 1. Instrument of Students' Communication Skills

ASPECTS	INDICATOR	The Total of Indicator's Appearance (Book Edition)	
		I	II
Expression	1. Able to describe data with different ways		
	2. Able to show the relation between data		
	3. Able to understand the meaning between data in different ways		
Evaluation	4. Able to see the content or data through different ways or perspective		
	5. Able to show the truth of different data or opinion		
	6. Able to differentiate facts and conclusion		
Response	7. Able to clarify data or statement with unclear statement		
	8. Able to ensure statement from friends		
	9. Able to respond unclear statement from friends		
Negotiation	10. Able to separate different ideas from friends or themselves		
	11. Able to revise their opinion based on friends' input		
	12. Able to conclude the discussion from group discussion		
TOTAL			

Source: (Tuan Soh, Osman, & Arsad, 2012; Por Chang, Chen, Guo, Cheng Y., Lin C., & Jen T., 2011)

Working procedures of this research was observing and take a look at the indicators of communication skills in learning to start from learning activity/steps which starts from apperception or evaluation. The observed objects were teachers and students, specifically students' activity and involvement in the learning process to the use of communication skills based on the indicators of the scoring instruments. The next steps were collecting the data and grouping the indicators in the learning process. The group of data was then analyzed in quantitative descriptive. The data of indicators' appearance was then counted in percentage to know the potential of communication skills' performance in every indicator and timed with 100% with criteria. The formula of the analysis can be seen as follows.

Percentage=

$$\frac{\sum \text{The appearance of Potential in each Indicator}}{\sum \text{The total of potentials}} \times 100\%$$

The guidance to the category of communication skills' potentials can be seen in Table 2.

Table 2. Category of Communicative Competence Potentials

Scoring Percentage (%)	Categories
81 – 100	Very Good
61 – 80	Good
41 – 60	Average
21 – 40	Low
0 – 20	Very Low

Source: (Sundayana, 2014)

RESULT AND DISCUSSION

The result of the analysis to the potentials of communicative competence's indicator in biology class for XI grader of "Y" Senior High School in Madiun regency can be seen in Figure 1 as follows.

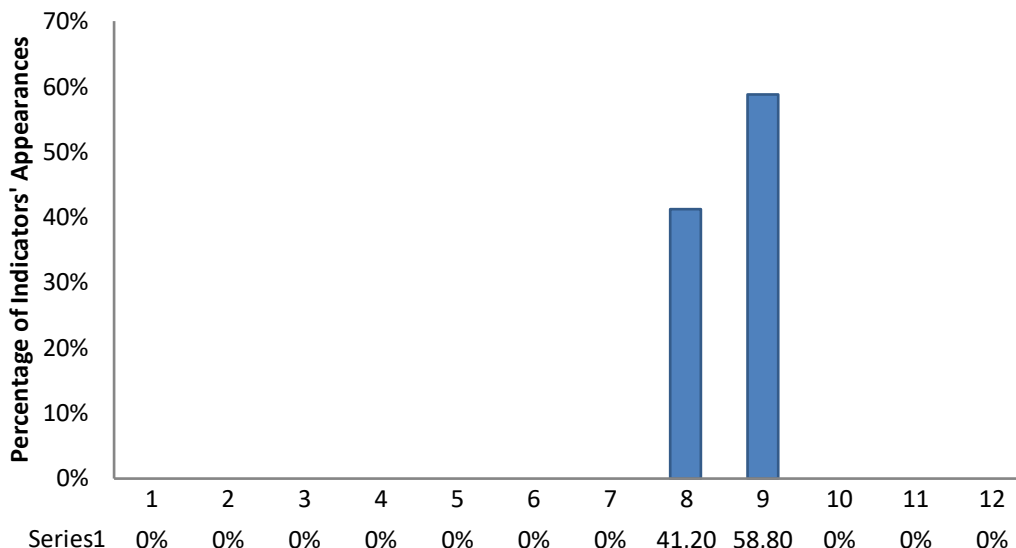


Figure 1. The Appearance of Communication Skills in Learning Process

Based on the analysis, from twelve indicators, only two indicators appear. Those two indicators are the eighth indicator (able to ensure the statements from friends) with a percentage of 41.2% and ninth indicator (able to respond friends' unclear statement) in the total of 58.8%. Both indicators are categorized as average, while the other indicators are categorized as very low with 0%. This low result was because there was no any material or learning activity appeared based on that 10 indicator of communication skills. These

data of appearances of percentage and category in communication skills showed that the potential of communication in biology class for XI graders in "Y" Senior High School in Madiun regency was low and should be empowered and improved.

Beside the analysis of observation, the documentation also shows students activity which can be included as empowering and improving their communication skills. Those activities can be seen in Figure 2 and 3.



Figure 2. Group Presentation



Figure 3. Students' Questions and Answer

The research was done in “Y” Senior High School in Madiun regency by observing biology class for XI graders. The appeared indicators were the eighth indicator with 41.2% categorized as average. It was because seven activities of students were in line to the indicator in the learning process. The suitability of this indicator was obtained because students’ can stimulate other students to pay attention to the materials by creating an activity of ensuring their friends in the classroom. This activity made students able to communicate interactively by delivering the presentation of learning materials in front of the class, so there would be a feedback exchange between presenter and material presented to the audience. Besides delivering the materials in front of the class, the presenter group had to ensure the audience that their presentation is based on the true material. The audience could understand the material easily and quickly.

The ninth indicator appeared in the percentage of 58.8% of average. This percentage came because 10 students’ activities are in line with students’ communicative skills. The suitability of activities and the ninth indicator was obtained because students actively respond the materials from the presenters. The response from the audience came because they did not understand the materials. The responses were given in questions, opinions, helps, or inputs addressed to the presenters. Students became very active in class due to the interaction that later will improve students’ communicative skills.

The other ten indicators were 0% or very low. It was because the learning activities from the apperception to the evaluation did not involve those indicators. The analysis of learning process showed that the teachers dominated the learning process. Even if the design of the activity was presentation delivery by students; somehow, teachers still dominated the class. The scenario of learning activity was also incorrect because the students were only presenting materials with no other activity. It made the learning activities became ineffective and not interesting. Students who were given a short time to prepare the slides were directly transferred the material from the book to the power point, making the delivery became a boredom. The communication process was also only in one-way due to teacher’s domination.

Learning process became the central thing to empower students’ communication skills. It was

because learning process in the class allow teacher to prepare and design based on the improvement of students’ communication skills. Besides, the supporting element and complement to the materials can be used to stimulate students’ communication skills, like, learning model and method, learning media, and infrastructure. The result of the research showed that students’ communication skills can be developed by the teacher using a different model in the learning process (Chrzanowski, Cieszyńska, & Ostrowska, 2015). Apart from learning model, learning methods was also impactful to students’ communication skills. Research proved that the integration of learning process which is centered to student and the development of creative and innovative learning process by teacher can fulfill the requirement needed in 21st century to communicate and face the challenge and competition (Arsad, Osman, & Tuan Soh, 2011)

Besides, learning independently and students’ communication skills can be improved by learning experiences from innovative media and materials from teachers (Sriarunasmee, Techataweewan, & Mebusaya, 2015). Other research also said that students’ communication skills in science can be improved by the use of innovative learning media applied by the students in the process with discussion, debate, and presentation (Bell & Carr, 2014). As the aforementioned, learning design is very important to empower students’ communication skills. The result of the research showed that learning design done in the laboratory with group experiment, result presentation, reinforcement to students and teacher, group discussion, and evaluation were important to create interaction and responses between groups. Thus, students can cooperate and communicate well in the class. It can be seen from students’ responsibility to their tasks, conducive discussion atmosphere, involved in decision-making process, respecting the opinion, group decision, delivering ideas clearly and effectively, choosing words with good intonation, and responding others’ opinion positively (Paristiowati, Slamet, & Sebastian, 2015).

Communication skills have a positive impact to students’ personal ability. With communication skills, students will be able to improve their interpersonal relations. Possessing

good skills in communication will make students able to deliver a message or learning material correctly (Erozkan, 2013). Besides communicating well, students will be able to create good relation and communication in their group in the learning process. The creation of good communicative relation in the group will be helpful for students in the working fields in the future (Akindele, 2012). Another research also said that good communication would help students build their confidence and self-conception independently (Yahaya & Ramli, 2009).

CONCLUSION

Based on the analysis, it can be concluded that learning process of biology class for XI graders of "Y" Senior High School in Madiun regency was not optimal, since only two indicators appear leaving other ten indicators in the learning process; thereby, it is not empowering students' communication skills. Based on the analysis of indicator representation to the learning process, the communication skills was not developed, and there should be an improvement to the implemented learning design. Based on the results of the research, there should also be improvements to learning components and learning design development which can improve students' communication skills.

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