



Analysis of Critical Thinking, Creativity, Communication, and Collaboration Skills (4C) for Junior High School Students

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Abstract. The location of this research was conducted at SMPN 02 Koto Baru. This research uses descriptive quantitative research. The population in this study were students of SMPN 02 Koto Baru, and the sampling technique was using all populations was 32 students. The data collection technique is done through observation. Analysis of the data used is the index number. The results showed that the Critical Thinking, Creativity, Communication, and Collaboration (4C) skills of SMPN 02 Koto Baru students obtained 44.2% on Critical Thinking skills, 43.6% on Creativity skills, 47.2% on Communication skills, and 45.5% on Collaboration skills. Based on the research results above, it can be concluded that the overall level of 4C skills (Critical Thinking, Creativity, Communication, and Collaboration) of SMPN 02 Koto Baru students is in a low category.

Keywords: Skills · Critical Thinking · Creativity · Communication · Collaboration

1 Introduction

In the era of globalization, the development of science and technology (IPTEK) is very fast and sophisticated, the role of the teacher is needed to improve the character of students. Changes in the progress of science and technology are part of the characteristics of globalization. Therefore, improving the quality of education is needed to have students who can think creatively, think critically and solve problems, communicate, and collaborate or what is known as the 4C.

Students in schools need changes in skills in the 2013 curriculum. Therefore, relevant parties such as schools are needed to make students always ready to face the challenges of industrial technology development 4.0. For that, every society needs the ability to face the challenges of developing industrial technology 4.0. This curriculum also requires

educators to improve student skills, both hard skills and soft skills, in learning in the world of work to compete with other countries. The teacher prepares all things related to the preparation of students in facing the world of work and the challenges of the development of industry 4.0, for example, curriculum, lesson plans, and models or methods that are combined with 21st-century learning. By improving student skills in the 21st century, students can seize opportunities and answer challenges faced in the era of advances in science and technology and industrial technology 4.0. These skills are needed to meet challenges and achieve success in the 21st century.

The success parameters are based on students' skills to interact and have sufficient information to deal with difficult problems to solve, adapt and innovate in responding to new challenges and turning things around, expanding new technological knowledge. Children have not been able to express their desires in realizing themselves and facing big problems facing them. Therefore, children need skills to answer their problems. All these skills can obtain if students can improve learning plans in which some activities stimulate their critical thinking in finding solutions to the problems they face.

2 Literature Review

2.1 Communication

This sub-topic describes the relevant theories and research related to this research.

First, theoretical studies are related to 21st-century skills, namely creative thinking, critical thinking and problem solving, communication, and collaboration. Communication is a process of sharing information with humans. Therefore, human communication is involved in intrapersonal and group contexts. States that communication is a powerful weapon in interacting between individuals and others, such as activities in the learning process and the workplace [1]. In other words states that communicating can improve speaking ability, which contains emotional and social and has the opposite response [2]. Communicating is an activity that everyone always carries out under any conditions. Thus, communication plays a role in human life. Through communication, the message is conveyed well.

Communication connects the person communicating and the other person communicating. The communicator receives the message, and the communicator gives the message. Interaction is an effort to communicate that does not only use words. Still, it can use body language, such as laughing, closing your eyes, waving your hands, and expressing one's emotions. Meanwhile, the message is conveyed in the person communicating, and the communication partner understands the content of the message conveyed [3].

In childhood is the appropriate age to improve children's language. Because at this time, children more quickly receive stimulation from outside and from within the form of motor, intellectual, social, emotional, and language aspects. Learning experiences can design to observe and listen to support the improvement of cognitive aspects in children. In the era of globalization, it is necessary to find a way to communicate well with other people. Through good communication, they can compete with other countries. Good communication is communication can provide a change in attitude towards others in communicating. Good communication aims to make it easier to receive messages given by the communication partner and the person communicating so that language

can understand properly. Another goal of good communication is to provide feedback to avoid misunderstandings in communication [4].

The teacher prepares students to communicate well in the learning process through language. The language used by students will have an impact on students and teachers themselves. Bad words will have an impact on receiving bad messages as well. Therefore, it can lead to misunderstandings in communicating with children. The use of good words in communication can have a positive influence on children. Children will get satisfaction if the goals achieved are clear so that the child's self-confidence can increase by itself.

2.2 Collaboration

State that if educators can be well involved in the learning process in groups in discussion, they will impact student learning outcomes [5]. The tendency to learn in groups by discussing is more effective than in lectures because students are easier to remember well. States that collaborative learning is a learning method that uses social interaction as a means of knowledge. States that educators must trust students to perform in ways that the teacher has not necessarily determined ahead of time "and provides a definition Collaborative learning therefore implies that (educators) must rethink what they have to do to get ready to teach and what they are doing when they are actually teaching."

The learning process is categorized into collaborative learning; it can be from a group. For example, a group of students can help with homework, that collaborative learning is not the same as learning at school. Thus, collaborative learning can be informal because it can be done outside of school [5]. Based on the description above, it can conclude that collaborative learning is learning that requires the involvement of students in a group to expand knowledge and learning objectives in interacting inside and outside the classroom so that students more easily accept learning. Students are required to collaborate in learning so that they can share information to understand the meaning of collaborating between students. The collaborative is used to improve students' self-ability in adapting according to the conditions they face.

2.3 Critical Thinking and Problem Solving

Everyone has intelligence in thinking. Through thinking can get the memory to understand the lesson well. Critical thinking involves finding solutions, making decisions, investigating assumptions, and carrying out scientific research. Critical thinking is the ability to evaluate the quality of judgment against the opinions of individuals and others [6]. Critical thinking is needed by someone to understand and find information related to oneself and others. The goal of critical thinking is to gain a detailed understanding. The purpose of critical thinking is to think that you can find solutions to the problems at hand [7].

2.4 Creativity and Innovation

Suggests that creativity is an idea and human thought that is innovative and understood [8]. That creativity is the ability to produce a unique and different image from others

in the aspect of art or find new methods. In addition, creativity can be stimulated by creative behavior, such as:

1. Fluency is the ability to express ideas and ideas to finding solutions.
2. Flexibility is the ability to produce ideas to find solutions beyond existing problems.
3. Authenticity is the ability to respond well.
4. Detail is the ability to provide structured ideas according to actual conditions.
5. Sensibility is sensitivity in finding solutions to responses based on a situation [9].

According to [9], develop children's creativity through several factors, namely:

1. Can stimulate cognitive, personality, and psychological aspects of children.
2. They provide comfortable conditions and situations so that children can increase their creativity through sight, hearing, and touch.
3. They are helping children improve their creativity through teacher creativity.
4. Provide comfort for children at home who parents assist by increasing their creativity.

Innovation is an idea, study, or method carried out by an individual or group that includes achieving existing problems [10].

Second, relevant research related to this research is as explained below. Examines the 21st Century Competency Profile: communication, creativity, collaboration, critical thinking in prospective biology teachers [11]. The research objectives are: to know the 21st-century competencies, namely communication, creativity, collaboration, and critical thinking. The method used in this study is survey research with data collection techniques, namely questionnaires at four universities for biology education students in the 2018/2019 academic year totaling 120 people. The universities in question are Tanjungpura University Pontianak, Kapuas Sintang University, Muhammadiyah University Pontianak, and IKIP PGRI Pontianak. The results showed that the collaborative aspect with a percentage of 78.51% was in a good category, followed by the negative aspect.

3 Methods

This research uses survey research. This research theme focuses on communication, collaboration, creativity, and critical thinking. This study used a population of all students at SMPN 02 Koto Baru, Dharmasraya Regency, Padang. The number of samples from the entire population is 32 students. This research uses descriptive quantitative research. The population in the research of data collection techniques is done through observation. Analysis of the data used is the index number. The Research Instrument used in this study was taken from the Buck Institute of education, consisting of 50 items. Then, the 50 question items were not all used, only four aspects of critical thinking, communication, collaboration, and creativity and the student's condition in the class (Table 1).

4 Result and Discussion

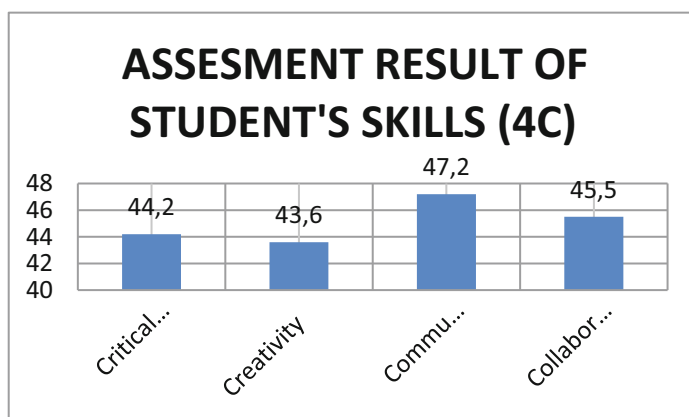
In this subchapter, a similar study addressing with this research is Utami entitled Contribution of Cooperative Learning Model in IPS Learning to the Development of 4C 21st Century Skills Learners. Utami's research results positively contribute significantly to

Table 1. Criteria for Range of Values Competence in Critical Thinking, Creativity, Communication, and Collaboration Skills (4C) [12]

No	Criteria for Range of Values 4 Competencies	
	Criteria of Competence in Critical Thinking, Creativity, Communication, and Collaboration (4C)	Value Range
1	Very Good	85–100
2	Good	70–84
3	Enough	55–69
4	Less	50–54
5	Very Poor	0–49

the development of 4C skills, namely critical thinking, communication skills, collaboration skills, and creativity, with the results of hypothesis tests and theoretical analysis in SMPN learners in Bandung. The results of this study are relevant to the results and discussions in this study, it was obtained skill 4, namely critical thinking, collaboration, communication, and creativity shown in Fig. 1 [13].

According to the data above, these four competencies are critical thinking, creativity, communication, and collaboration. Aspects of communication, collaboration, critical thinking are lower than the aspects of creativity. Communication obtained a percentage of 47.2%, categorized in the range of very low scores. Collaboration gets a percentage of 45.5%, categorized in the very low-value range. Likewise, the critical thinking aspect gets 44.2%, and the creativity aspect gets a percentage of 43.6%, categorized in the very low-value range. The creativity aspect gets the lowest percentage compared to other aspects. This creativity is because the parameter of creativity is to create new things. In comparison, a person's success is obtained from his creative skills. This creativity

**Fig. 1.** Percentage of Competence in Critical Thinking, Creativity, Communication, and Collaboration

requires efforts to increase students' creativity to express new ideas and ideas from existing works.

In the aspect of communication, the category is the highest compared to other aspects. Parameters in this aspect are students' skills in answering statements in front of many people. The shortcoming in this aspect of communication is that mastery of the material also impacts the ability to answer questions based on context. Communication skills include skills in giving clear opinions to the interlocutor [14]. Communication skills are skills needed in the development of technology and industry 4.0. This skill can give a clear message to the interlocutor in the form of ideas and ideas in the learning process. These ideas and ideas need to be developed through interaction and communication.

Likewise, in the collaboration aspect, the percentage in the value range is very less. This collaborative skill is needed because it can be decisive in the world of work. This skill is related to communication. In this aspect, students can involve themselves in groups to complete the task of discussing with friends who have different backgrounds in academic skills, gender, and culture. Work on time, cooperate with others, and responsible for members to complete assigned tasks [15].

5 Conclusions

The Critical Thinking, Creativity, Communication, and Collaboration (4C) skills of SMPN 02 Koto Baru students obtained 44.2% on Critical Thinking skills, 43.6% on Creativity skills, 47.2% on Communication skills, and 45.5% on Collaboration skills. Based on the present study, it can be concluded that the overall level of 4C skills (Critical Thinking, Creativity, Communication, and Collaboration) of SMPN 02 Koto Baru students is in a low category.

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