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EFFECTIVE EDUCATIONAL INDICATORS OF MULTI-VECTOR APPROACHES IN FORMING COLLABORATIVE SKILLS OF STUDENTS BASED ON PEDAGOGICAL METHODS OF INNOVATIVE EDUCATION

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ABSTRACT

The purpose of this research is to identify students' collaborative skills through learning sharing and jumping task on the topic of redox reactions. Collaborative skills are skills that must be possessed by each student in accordance with the demands of the 2023 curriculum. This research used descriptive analysis method. The data were obtained through recording and observing. Transcript Based Lesson Analysis (TBLA) was used to analyze the transcripts.

KEYWORDS

Collaborative problem solving, team work, method, learning, education.

INTRODUCTION

In the 21st century, skills developed in the 2023 curriculum are students required to develop four skills, one of them is collaborative skill. Collaborative skills are the ability to communicate and collaborate

effectively with various parties [1]. Students must have collaborative skill to learn one another from their friends to improve their knowledge, as in the current curriculum used, teacher only acts as a facilitator [1].

Students are able to interact intensively either with their friends or teacher by having collaborative skills, these interactions can help them achieve the learning goals [2], collaborative skill can create collaboration between teacher-students and student-student [3].

The Indicators of collaborative skills identified in this study, namely: 1) Listen to other people well,

2) Be able to speak or argue, 3) Appreciate and Respect opinion of other people , 4) Work together to solve problems, 5) Discuss assignments with friends well, 6) Show concern for friends, and 7) Be able to guide others to achieve goals [4,5].

METHODS

Based on the results of observations in one of the senior high schools in Bandung showed that the collaboration process has occurred but it is not optimal. This can be seen during the learning process, some students discussed with their friends about outside the learning material, some students played mobile phone, and some students even fall slept, in other words, students have not been motivated to study. In addition, learning is still dominated by teacher explanations, only few students responded teacher questions with short answers. Therefore, it is needed to design an interesting learning to optimize collaborative skill in learning.

Learning Design that applies sharing and jumping tasks can provide benefits for all students. One of the benefit is students can learn from other students [1], and the process can trigger collaborative skills in each student. In line with that, in the previous study, the design of sharing & jumping task can improve the quality of learning as seen from the quality of the assignments,

might occurrence dialogue and collaboration as well as the activity and enthusiasm of students.

The concept of oxidation numbers to identify redox reactions is still considered a fairly difficult concept by students. It can be proven by one of the studies which states that most students are able to answer questions about the concept of oxygen release and binding, whereas for the concept of oxidation number and its application to the redox reaction, not all students are able to answer and the score decreases [6]. Based on the description above, this study aims to identify collaborative skills through the implementation of sharing and jumping task on the topic of redox reaction.

The method used in this study was descriptive analysis. The participants in this study was students at grade 10th in one of the senior high schools in Bandung. The instrument used was a non-test instrument using the sound recording of learning process and the observation sheet. The data obtained consist of learning transcripts analysed using Transcript Based Lesson Analysis (TBLA), then verified the indicators of collaborative skills that appeared in every group.

RESULTS AND DISCUSSION

Learning consists of three activities, of which students predicted the reason for the process of rusting, shared activity for determination of the oxidation number of charged substances, compounds and elements, and identified the redox reaction including determine the reductor and oxidator, and at the final activity or jumping activity, students identified the redox reactions in alkaline battery.

Sharing and jumping task learning is expected to help develop students' collaborative skills during the

learning process. The results of the study show that sharing and jumping task learning provide benefits for all students both low-intelligent students and high-intelligent students. Moreover, students also not only discuss about topic but also students can learn from each other, which eventually lead to collaborative skills [1].

Information:

Indicator 1: Listen to other people well Indicator 2: Be able to speak or argue

Indicator 3: Appreciate and Respect opinion of other people Indicator 4: Work together to solve problems

Indicator 5: Discuss assignments with friends well Indicator 6: Show concern for friends

Indicator 7: Be able to guide others to achieve goals

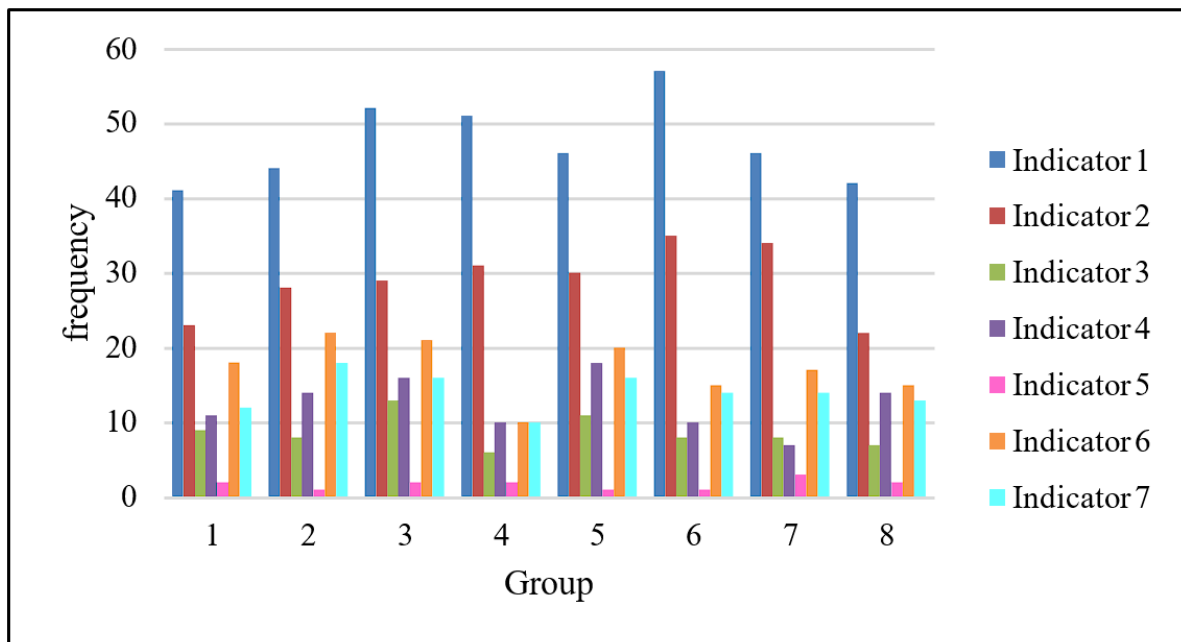


Figure 1. Identification of Collaborative Skills Indicators in Sharing Task Activities

Figure 1 shows the results of identification of collaborative skills in sharing task activities. Overall, according to Figure 1, the most frequent indicator is indicator 1 that is “listen to other people well”. Whereas the least indicator appears is indicator 5 that is “discuss assignments with friends well”. The appearance occurred because of several factors including the characteristics of students in groups and

the characteristics of learning itself that did not require students to discuss their assignments with friends. This is caused by every student got different questions.

It can be seen in Figure 1 that seven indicators of collaborative skills have been well identified. Indicator 1 is the most often identified because of the initial attitude to collaborate namely be able to listen well

and argue in response what has been listened [4]. Indicator 1 is most identified in group 6. It can be seen from the transcript that there is a process of listening to each other, which is evidenced by the response when other friend asked. When friend asked or spoke, not just one student but all group members listened well. This listening relationship will build an effective learning process [1]. Through this listening relationship, it can trigger the emergence of other indicators, namely indicator 6 that is “show concern for friends” which is shown by trying to answer the question of friend who is still in trouble.

Indicator 5 is identified at least in every group. This can happen because of the characteristics of learning itself that did not require a lot of division of tasks because everyone has got different LKS questions, the division

of assignments during sharing task learning is included dividing assignments to teach other friends who have difficulty. It can be seen from the transcript that the students do the sharing and discussing their assignments, and by doing so they were able to show one of their collaborative skills in their group. From these explanations, other collaborative skills can be identified, namely indicator 4, work together to explain to friends in order to understand and finish the assignment. The process of sharing and discussing solvation for assignment and collaborations carried out by students can help achieve learning goals, which results in an increase in students' understanding of the material, student learning abilities, interpersonal relationships between students and students or teacher, and lead to more positive attitudes toward learning [2].

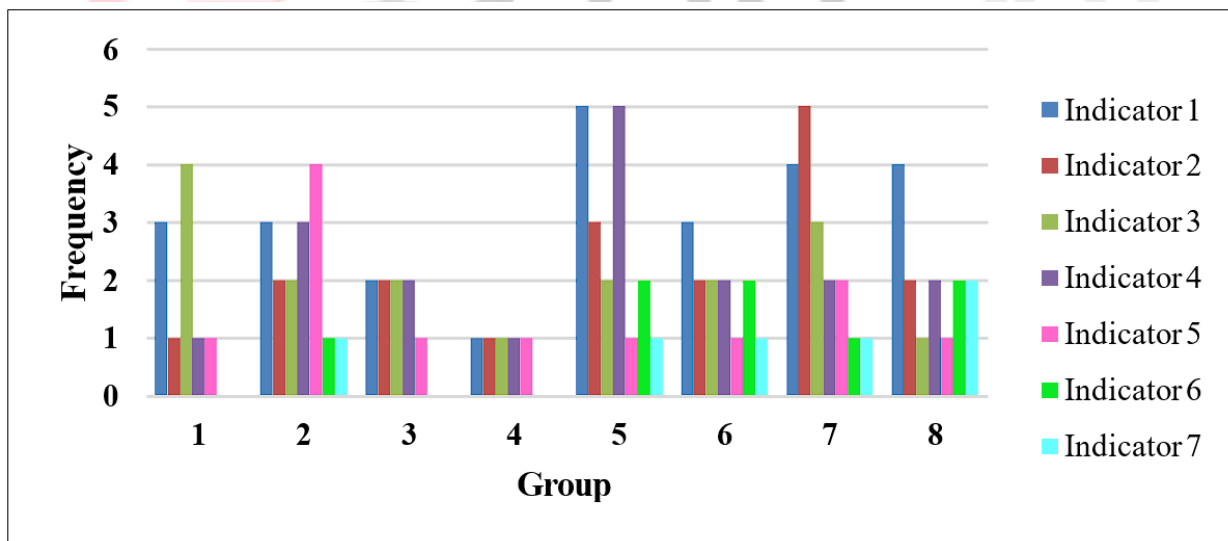


Figure 2. Identification of Collaborative Skills Indicators in Jumping Task Activities

Figure 2 shows the results of identification of collaborative skills in jumping task activities. For the collaborative skills, there are two indicators in this jumping task (6,7) in three groups (1,3,4) that do not

appear. Factors cause this all are first, because of unpredictable time allocation, so students can only do ten minutes because of their delay in filling in the LKS in the previous activity. This has made students feel in

a hurry which results in a lack of interaction and good collaboration between students. Second, students are too focused on the mobile phone to find answers, and thirdly because students have begun to not focus on doing what the teacher instructed in the last hour.

At the jumping task activities, three common indicators (indicators 1, 2, and 4) are less and one collaborative indicator (indicator 5) is better than at the sharing activity, especially at group two. It can be seen from the transcript that students in the group 2 from the beginning of jumping process have been able to share the assignments well in their groups. It happened because the same questions in the LKS are given by the teacher to every students, so students are more share many assignments to answer the same question. In jumping task activity, it needs to be emphasized that not only the cognitive aspects of students experience jumping, but also the affective aspects and skills of students can also experience jumping [5].

CONCLUSION

It is obvious that through the implementation of sharing and jumping task learning on redox reaction materials showed that seven indicators of collaborative skills have been well identified. Indicator 1 that is listen to other people well is the most frequently identified indicator whereas indicator 5 that is discuss assignments with friend well is the least identified.

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