The Role of Facilitator Playing a Game-Based Teaching Material in Collaborative Learning

— Analysis of Interaction—

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Abstract. The purpose of this research is to identify the role of the facilitator playing the developed teaching material to make the collaborative learning activities by analyzing the interaction of participants. In high school in Japan, students have lots of chances to learn collaboratively with others, especially in inquiry-based learning. Contribution to the group in collaborative learning is not only making a statement but also various roles and ways of contributing to the group, such as taking the minutes of the discussions and breaking the ice to be easier to speak. Each student has a different idea about collaborative learning, positive and negative, so learning collaboratively with others is not always easy. Thus, the authors developed a card game teaching material to recognize and understand the heterogeneity between students. In this research, the authors focus on the facilitator of the group and the role of that to make group members speak easier.

*Keywords: Collaborative Learning, Facilitation, Game-Based Learning, Teaching Materials Developmen*t

Research Background and Objective

In high school in Japan, students have lots of chances to learn collaboratively with others. Since national curriculum standards have been revised in 2022, the opportunities to learn through collaboration with others will increase especially in inquiry-based learning. Lots of research about the effectiveness of collaborative learning has been done in school. For example, Hida (2014) identified that the heterogeneity between the group members improves problem-solving performance.

Although collaborative learning is expected to have many positive effects, it also has problems. For example, teachers are often confused about how to design an environment of collaborative learning that allows students to accept different values. Even though some teachers have worked for a long time, they also have difficulties and anxieties about its effects. In addition to it, regarding students' anxiety and worries about collaborative learning, there are concerns about the failure of collaborative learning when there are members who do not make their statements. For them, it is important to create relationships between group members such as understanding each other's different ideas.

Then, structured group encounter (SGE) effectively encourages students to become aware of the heterogeneity of individuals and understand that (Katano, 2003). The reason why SGE is effective is that SGE is an activity focusing on self-disclosure through games. Communication is produced within a given framework through a common task, and students become aware of their differences from others. In addition, they can compare their feelings and thoughts by sharing opinions after the SGE experience, which is leading to understanding the heterogeneity (Kokubun et al., 2012). The authors pay attention to the structure of SGE and develop card game teaching materials referring to

"Uninhabited Island SOS" (Shibata and Kishi 2021) so that the students understand heterogeneity in collaborative learning.

In this research, the authors analyze how students recognize and understand the heterogeneity in collaborative learning through playing the developed game. In addition, the authors focus on the role of the facilitator to activate interaction among participants. The facilitator takes the role of eliciting various opinions from others and making the discussion more active and smoother. Shirai et al. (2012) point out that the role of facilitating the discussion is quite important to learn collaboratively and solve problems. The authors analyze when, how, and what facilitators implement to promote mutual understanding of heterogeneity.

Research Methods

Outline of Practice

In this study, the authors developed card game teaching material and conducted pilot practice with 11 high school students in April 2022. The authors divided students into groups of 4 to 5 including facilitators. Although the students were the same age and from the same high school, they had not known each other. The authors shared the research purpose and how to play the game at the beginning, then each group experienced the game along with the outline.

Data Collected and Data Collection

The authors collected data at this pilot practice by recording the conversation while students play this game and interact with other members. The authors make the transcript of the conversation and analyze it qualitatively. In addition, a questionnaire survey was conducted to clarify whether the experience of the developed card game-type teaching materials promoted the recognition and understanding of the heterogeneity of the students.

Discussion and Conclusion

The authors found that card game teaching material encourages students to express their own opinions and recognize the heterogeneity. In addition, the authors identified the crucial facilitator's roles in the practice, such as listening and responding warmly, revoice, linking different ideas, and completing students' ideas together with others.

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