

Suggestion of a Method to Cultivate the Ability of Reflection

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Abstract: The purpose of this research is to propose a method of cultivating reflecting skill as one of the important competencies in Japanese education. The author focused on one student who took part in an information class at High School S and who changed as shown through the contents of reflections. Result of the analysis showed that the content of the student's reflection changed from "report" or "impression" of the content of the class to "reflection", "self-analysis", and "goal setting" in the class. This result suggests that continuing to reflect, giving the student diverse viewpoints, and teacher's evaluation of the contents of the reflection are effective in improving the student's ability to look back to learn from experiences.

Keywords: active learning, self-assessment, reflection, rubric

INTRODUCTION

Japanese high schools are paying attention to learning methods such as active learning where students learn by themselves. In this context, attention has been focused on meta-cognition, the ability to look back on learning. In 2012, the perspective of education changed from "what teachers teach" to "what students learn." In the statement, it is noted that it is essential for learners to look back in order to "learn through experiences."

This suggests the importance of reviewing lessons that emphasize student experiences, such as active learning and service learning, which have attracted attention in recent years.

Miyamoto et al. (2015) quantitatively analyzed and clarified how the teaching materials and methods developed to foster meta-cognition during science experiments contributed to the meta-cognitive abilities of students. Ichiyasu et al. (2015) developed a teaching method to foster meta-cognition in physical education, and studied whether this method is effective in fostering meta-cognition.

In addition, there are few studies focusing on the process of how students actually acquire the ability to look back from these previous studies, although teaching methods to develop their ability to look back are being considered. This study focuses on each student, clarifies how to acquire the ability to look back, and discusses it in light of the contents of the class.

RESEARCH DESIGN & METHOD

The purpose of this research is to explore ways to develop the ability to look back at high school information classes. To this end, the study conducted a

review of about a year of lesson practice. The student described a review of the class at the end of each hour's class. The author used Google Classroom, an application provided by Google, to collect students reflection for one-year. In addition, the author created a look-back loop as shown in Table 1, from which the teacher gave the students a score and comment.

Table 1. Reflective Rubric

Reflective rubric					
Perspective / Evaluation	SS	S	A	B	C
Self-analysis / reflection	What you can do / What you could not do + Reason for it + Improvement plan against what you could not do	What you can do / What you could not do + Reason for it	What you can do / What you could not do	Impression of class	Nothing is written, wrote thing that there is no relation to class
Awareness in class		Writing something noticed related to the objectives and aim of the lesson by friend's remarks / teacher's remarks	write what noticed something related to the goal or purpose of the lesson	writing something noticed	Nothing is written

Items were drawn from two perspectives: (1) self-analysis and self-reflection, and (2) awareness in class. Furthermore, (1) from the viewpoint of self-analysis and self-reflection, from the viewpoint of SS to C (See Table 1), and (2) from the viewpoint of awareness in class, from S to C. In addition, SS was evaluated on a total of 9 points, with 5 points, S on 4 points, A on 3 points, B on 2 points, and C on 1 points, and feedback was provided to the students each time.

At that time, the feedback was provided by adding comments on each student's review. The student set about five minutes before the class began, and at that time he read the scores and comments from the first author, who was a teacher. The students read the comment and score written by the teacher at the beginning of the next class, and they took the lesson into consideration.

RESULT

Analysis revealed a change in the student's review. The generated categories are shown in [] and the original data described by the student is shown in “.” The content of the student's review changed from [Content of class], [Remarks on class], to [Introduction], [Self-analysis] and [Target setting] of the student him/herself.

With regard to the contents of the class and the impressions of the class, there were such descriptions as “Making slides for introducing other. I enjoyed thinking about design” (May 11) and “I enjoyed learning about various World Heritage sites” (June 1).

Subsequently, the content changed gradually, such as [Introduction], [Self-analysis], and [Target Setting]. For example, in the [Introduction] and [Self-Analysis], “What we could not do was not writing the structure or design of the page at all. I think it was because the image of the website was too tight.” (January 11) and “The fact that the structure of each page was too hard to think of although it was decided in order according to the theme” (January 18). “In addition, we have set a goal of making a group presentation even better than usual” (November 16) and “by next week, I would like to thoroughly examine the structure of the website” (January 11).

Students then describe the content of the report, including the [Target Setting] in the next class. From these results, it can be said that from the descriptions of just [impressions of classes] and [comments on the contents of classes], [reflection], [self-analysis], and [goal setting] that the student was able to look back and reflect in depth.

CONCLUSION

This research showed that a student reflection review improved after reflecting on lessons. In this class practice, the teacher used a Rubric and Google Classroom. In addition, the teacher evaluated the student's reflection and returned reflections with his comments. This change did not occur immediately, but gradually changed over time. In other words, by continuously reviewing the lessons at the end of each class, it is probable that the student's reflection gradually improved the content of the review.

In addition, the teacher evaluated the lessons written by the students using scores and returned comments, which seemed to enable the students to gradually notice how to look back at lessons. The teacher's comment suggested what he could not do and why he should review what he had done and become aware of this in the next review.

The student noted, “I don't know a little about what I noticed, but I'm going to review even better if I can sort out the lesson a little more in my mind.” The teacher provided advice on how to improve their reflections. This is a comment from a point of view that

students did not notice in the past. This may have enabled students to incorporate new perspectives and to look back more deeply on what they learned.

This suggests that it is effective to continue to look back, to give students a variety of perspectives, and to have teachers evaluate the content of the review. It is also important to analyze the descriptions of other students in the future.

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