
[JJ] Evening Poster | G (General (Education and Outreach)) | General (Education and Outreach)

[G-05]Geoscience education from elementary school to university students

convener:Masatsune Hatakeyama(Seiko Gakuin High School)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

We will provide and discuss various educational practices (teachings and procedures) for elementary, junior high school, high school and university students. We also welcome outreach reports for all grades. In addition, especially for liberal arts level geoscience education of undergraduate, we will consider the problems and future prospects of our current situation.

[G05-P05]Reports of active learning in Geoparks and areas familiar to students

-Two presentations from an Introduction to Physical Geography-

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1.Contents and invention of active learning

This report is about two presentations (13 presenters) from the author's course an Introduction to Physical Geography at International Christian University (ICU).

The course consisted of nine 140-min lessons. During the first four lessons, the author lectured about the geological development of the Japan's islands and the Kanto plain. These lectures were given to help students understand the geographic and geoscientific meanings of Japanese Geoparks.

Furthermore, during the fifth lesson, a presentation was conducted on the topic 'Geotour plans based on Geoparks'. In this lesson, students chose either Japanese Geoparks or World Geoparks, and introduced its meaning and attractive tour spots. Groups of four or five students made posters and gave 10-minute presentations with a 5-minute Q&A period at the end. In advance, the students undertook mutual assessment in accordance with a grading rubric. In lessons 6 through 9, a presentation was conducted on the topic 'Geography of our town'. This topic required students to present information about a place that they knew well, through the lens of geographic and geoscientific understanding. Regarding these, each student made a PowerPoint presentation and used it for a 10-minute speech with a 5-minute Q&A period.

2.Lesson effectiveness survey results

At the end of the course's final lesson, a survey was administered to the students to determine the course's effectiveness. The survey had the following responses to the first two questions: 'A: Strongly Agree,' 'B: Agree,' 'C: Neutral,' 'D: Disagree,' 'E: Strongly Disagree.' The two questions were '(1) your knowledge obtained in the lesson has been enhanced' and '(2) you have become more interested in geography.' The responses showed that nearly all the students responded to questions (1) and (2) with either 'A: Strongly agree' or 'B: Agree', with the exception of one student who responded to question (2) with 'C: Neutral' for question (2) for the 'Geotour' presentation. Particularly for the 'Geography of our town' lesson, 69% of the students 'Strongly Agreed' to question (2), suggesting that surveying

familiar areas develops student's academic interests.

Next, the methods students used for inquiry-based learning were surveyed. The survey had the following responses in addition to an "Other" option: "A: Information websites," "B: Papers," "C: Books," "D: Museums," and "E: Field surveys." The results showed that the percentage of students who responded with "A" was the highest: 92%. In addition, the percentage of students who responded "B" was the second highest: 69% for "Geography of our town" and 77% for "Geotour." For the "Geotour" presentation, it is worth noting that the student's response to "E: Field surveys" was 0%, but was 46% for the "Geography of our town." For the "Geography of our town" presentation, results showed that students actively searched in familiar areas for such attractive points as found in the "Geotour." One can imagine that the combination of the two presentation lessons brought about positive learning conditions. Regarding the time of preparation, an average of 6.3 hours was spent on the "Geotour" presentation's preparation, an average of 7.5 hours was spent on the "Geography of our town" presentation's preparation. Finally, the benefits of inquiry-based learning were surveyed. Regarding the "Geography of our town" presentation, the survey response "to link to one's own experience" had the highest percentage: 80%. Followed by, "to listen to the presentation of others" at 77%. Additionally, "to have an opportunity to investigate something independently" was 73%. Regarding the "Geotour" presentation, the results were very similar, although the response "to review what was learned" was high: 50%. It can be said that this fact demonstrates the possibility that teaching the geological development of Japan's islands is useful when considering the meaning of Geoparks.