

## Relative number of science and mathematics teachers at lower secondary schools in Osaka City, Japan

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In Lower Secondary Schools, national Curriculum Standards Reform was implemented from 2002 and the paragraph 'Lower secondary schools will conduct more of outdoor observations and exploratory activities. Students are found naturally and does the observation, the experiment, which had a purpose' was added to the conventional basic policy (The Ministry of Education, Culture, Sports, Science and Technology, 1998). In this regard, the outdoor observations become necessary. However, this guideline is difficult for the observation and the experiment in the outdoors when the teachers do not have enough outdoor experience. The teachers with a background in the fields of earth science and biology, which are the outdoor science, become necessary. However, the number of earth science teachers in the lower secondary schools is too low. The earth science teachers are not given enough employment opportunity till now. Therefore, this study investigates the number of teacher with the earth science background in all of the 129 lower secondary schools (3095 teachers) in Osaka City, Japan. A questionnaire survey was conducted in which 27.1% responded.

The number of science teachers is around 15.6%, which is reasonable while considering the total number of all subjects. However, a high anomaly is observed in the percentage of teachers in different fields of science (physics, chemistry, biology and earth science). The number of mathematics teachers is around 5.2%. The number of teachers with the earth science background is about only 0.57%, which should be raised up to around 4% in order to keep in balance to other fields of science. This shows that there is urgent need to provide more employment opportunities in lower secondary schools to the applicants with earth science background.