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Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Practice and Effects of Climate change education for university students

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Many countries have or are planning to have, climate-change education projects in order to build sustainable societies. The U.S. Global Change-Research/Climate-Change Program has developed climate-science literacy that has been disseminated into assorted projects; whereas Japan's next national curriculum emphasizes on building a sustainable society. However Japan's national curriculum covers only elementary and secondary schools in Japan. We have been using global-change learning modules within this curriculum that were developed by the UCAR in U.S.A.

There are five learning modules selected. These are: "The sun-earth system", "Climatic variation in Earth history", "Cloud and climate change", "Stratospheric ozone depletion" and "Effects of changing climate on weather and human activities". They are compiled within a textbook and translated into Japanese; from which the 'Earth System' has been taught at the J. F. Oberlin University.

The effect of the associated lectures had been assessed by pre- and post- questionnaires that were used by the United Kingdom's Risky Business climate-change project. Statements such as "Climate change is happening now." are presented to assess the student's conviction. On average, our lecture does strengthen a student's conviction with a portion strongly agreeing, rising from 14 percent to 22 percent.

Twelve policy statements are presented, such as 'Invest more money in science and technology' toward a climate-change remedy for the students' assessment. On average, 48 percent said they might vote for these policies in the pre- questionnaires followed by 60 percent in post questionnaires. However, the assessment could not find a significant change with either "definitely against" and "definitely for". Perhaps this could be due to the national traits of the Japanese.

We teach Climate Change within the framework of science; hence we do not say "Climate change is happening now." We impartially show the observational results to the students in our lectures. And then we asked them to judge, to determine the variability of climate or 'climatic change'. We also explain and discuss the future projection with uncertainty. The students' response per question is more complicated after learning about the uncertainty and the confidence level of climate change. The difficulty of climate-change education is further discussed via more-detailed analysis of the questionnaires.