

# Impacts of Education for Sustainable Development (ESD) on Students' Awareness and Behavior at Kyoto University

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## 1. Research background and objectives

As with many institutions of higher education, Kyoto University (KU) is carrying out many initiatives to make its campus, curricula and policies more sustainable, and this includes providing courses focused on sustainability as part of an Education for Sustainable Development (ESD) approach.

This research will examine formal education of ESD at KU, because assessment of sustainability-related curricula is important for improving the quality of ESD. There are two objectives of this research: to examine the influence of courses with sustainability-related content on students' awareness and action towards sustainability, and to consider what kind of education will lead students to take actions towards more sustainable lifestyles.

## 2. Research Methodology

Pre-course and post-course surveys were conducted for five sustainability-related courses offered to undergraduate students at KU in order to examine students' pro-sustainability awareness, knowledge and behavior before and after taking the courses. The five courses differ in terms of course design and sustainability content, thematic linkage of lecture topics, and degree of interactive contents.

The questionnaire responses for each course were analyzed to understand the impact of the courses on students' awareness (knowledge and attitudes) and behavior (daily practice and willingness to advocate on sustainability issues). A comparison of the results across all five courses was also conducted.

## 3. Main Research Results

A total of 68 students completed both pre-course and post-course surveys in the five courses.

The results showed that students' knowledge has been expanded by taking these courses. Significantly, before taking the courses, most of the students had a fairly narrow understanding of sustainability that focused primarily on its environmental aspects, but after finishing the courses, their perceptions were broadened to encompass not only environmental aspects but also social, economic and other aspects of sustainability.

Evaluations of pro-sustainability awareness also increased in three courses out of the five. However, students' behavior was changed in only two courses out of the five. These two courses had interaction-based content and students were influenced by interaction with other students, more than with lecturers.

## 4. Conclusion

The results suggested that experience-based courses can be effective in achieving the initial ESD goals of increasing pro-sustainable awareness and behavior, although advocacy increased very little. New student-centered learning approaches and a hub for sharing teaching experience and resources are recommended to enhance the ESD outcomes at Kyoto University.