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Educational Program to Learn Environment of the Catchments in Cooperation with Organizations Outside of the University

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Dept. of Environmental Systems Engineering, College of Technology, Toyama Prefectural University has been developing an educational program for the students concerning environment of the catchments incorporating the educational assistance from organizations outside the university. The program has been selected as one of the excellent practices of junior college education as “Good Practices” by Japan Ministry of Education, Culture, Sports, Science and Technology. In this report, we introduce the educational program and our practice, and show the evaluation of the program according to the questionnaires.

One of the significant features of this educational program is that the program is aiming an understanding of the water circulation from view points of both water quality and water quantity. It is also a great advantage for the program to use various approaches such as engineering, technology, ecology and social science to solve problems in the catchments. The program consists of as many as 38 subjects with 65 units dealing with environment of the catchments among 50 specialized subjects with 84 units in the curriculum.

In order to make the program practical, the educational assistance outside of the college is effectively incorporated into the program. "Field exercise", which consists of a field trip and a field investigation, is carried out for the second grade student of our junior college. "Field exercise" together with the graduation study requires comprehensive knowledge, and lies in the core of the program. Field trip includes the bus trip visiting facilities notable for water circulation, such as dams, head gates, water works and so on. In the field investigation, students investigate the water quantity and qualities of the surface waters, soil properties and vegetation on the watersheds, and biological species living in the field to evaluate the environmental condition. Both in the field trip and the field investigation, the assistance of other organization outside the college are intentionally taken into the implementation of the program to have advices about the functions of the facilities we visit and about the environmental back ground of the field we investigate. A national government, 5 local governments and a private company cooperated in “Field exercise” in the educational year of 2006.

According to the questionnaires which asked to the students the effectiveness of “Field Exercise” for understanding the water circulation, 90 % of the students answered “positive”, while 10 % were negative.

In the educational year of 2006, we expanded the environmental education to the Faculty of Engineering of Toyama Prefectural University operated by the same local government, Toyama prefecture, as our junior college. The students of both the college and the university visited some private companies operating up-to-date facilities to reduce wastes and to treat wastewater. The practical exercise was named “Eco-tour” done in the same manner as the field trip. “Eco-tour” also achieved a good effect on learning the latest technologies challenging to sustainable development of the society. We are still improving the educational program in cooperation with the organizations outside of the university for effective understanding of the environment of the catchments.