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## THE EFFECTS OF ENVIRONMENTAL AND ADVENTURE EDUCATION PROGRAMS ON THE WILDERNESS ATTITUDES OF JAPANESE EARLY ADOLESCENTS

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The environmental education and adventure education movements in Japan started at the end of the 1980s. Until that time, Japanese outdoor education focused on recreational activities and group living experiences, unlike American outdoor education, which focused more heavily on environmental education and adventure education. Recent environmental concerns have created a need for increased environmental education, and practitioners have pointed to a severe lack of adequate programs in this area (Abe, 1995; Shibata, 1992). Additionally, outdoor and environmental educators have highlighted the benefits of adventure activities and outdoor experiences on developing positive environmental ethics (Okamura, 1996; Tsukahara, 1993).

The conceptual framework for this study is that outdoor education represents the integration of environmental education and adventure education (Bisson, 1998; Bunting, 1990; Donna, 1996; Priest, 1986). The purpose of the study was first to compare the effects of environmental and adventure education programs in a resident camp setting on the wilderness attitudes of Japanese early adolescents.

Participants were campers aged 10-15 years old who were enrolled in a seven-day residential camp program. A crossover experimental design was used, in which half of the treatment group ( $n=36$ ) participated in the environmental education program before the adventure education program, and the other half ( $n=37$ ) participated in the programs in reverse order. The control group ( $n=43$ ) consisted of students the same ages who did not participate in the camp programs. The instrument, the Wilderness Cognitive and Affective Attitude Test, was designed by the researcher and had three sub-scales: forest, soil, and water. The test was administered a total of five times: as pre- and post-tests for each

program during the camp, and as a follow-up administered one month after the camp.

The results indicated that the treatment group demonstrated significant increases in all of the wilderness cognitive attitude sub-scores, as well as the total score after the environmental program; increases were also seen in one of the wilderness affective attitude sub-scores and in the total score after the adventure education program. Additionally, the treatment group demonstrated significant increases in both cognitive and affective attitude scores immediately after the camp and had maintained these increases one month later, while the control group did not. The results suggest that the environmental education program strongly influenced positive wilderness cognitive attitudes, and that the adventure education program influenced a positive wilderness affective attitude. Implications are that the resident camp designed to enhance participants' attitudes toward wilderness and environmental ethics should include both an environmental and adventure component in order to obtain consistency between the wilderness cognitive and affective attitudes.

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