

Outdoor Science Education refers to learning activities that occur outside of traditional classrooms in camps, on the school grounds, or within the community (Broda, 2007). Outdoor education can also mean education in, about, and the study of the “out-of-doors” (Ford, 1986; Priest, 1986) and is one example of a situated learning experience (see also) and informal science learning (see also).

Before classrooms, textbooks, and professional educators, students acquired knowledge from direct personal experiences (Hammerman, 1978) including those in the out of doors. According to Broda (2007), outdoor education is a type of experiential learning (see also) that uses authentic (real-world) experiences blended with “learning by doing” (see discovery learning). Outdoor education is focused on what happens outside of buildings “for the purpose of developing knowledge, skills, and attitudes concerning the world in which we live” (Ford, 1986, p. 3). Hands-on learning (see also) through direct participation is common in outdoor education and may be independent on the part of the learner or teacher-mediated.

Outdoor education has four dimensions: extension, development, content, and teaching methodology. The first dimension, *extension*, consists of knowledge of and concern for the environment that extends formal learning activities beyond the classroom into the community, natural environment, or other locations related to the topics being studied. Ford (1986) suggests that we teach that humans have a responsibility for stewardship or care of the land, facts and concepts regarding the interrelationships of all ecosystems to improve literacy, how to make sound decisions based on scientific facts, how to live comfortably outdoors, how to recreate leisurely in the outdoors with minimal impact on the environment, and how to be life-long learners of outdoor education and to know that outdoor education is a continual education experience.

The second dimension, *development*, focuses on personal growth through problem-solving (see also), challenge and adventure. The third dimension, *content*, emphasizes teaching the traditional subject matter related to the out-of-doors such as ecology, biology, environmental awareness, skills used in the outdoors, and human relationships (Bunting, 2006; Ford, 1986). The final, *teaching methodology*, refers to instruction using teaching tools that enable students to make connections between their outdoor experiences and learning activities such as reflective discussion and journaling (see science notebook) (Bunting, 2006). (LW)

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