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5. (Re) emerging concepts for environmental stewardship and sustainability

From environmental problems to sustainable development and towards resilience – Development over time of a university program in environmental science aiming for action competences

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Introduction: During the latest decades society has developed from an environmental awareness, with reactive thinking, of the “pre Brundtland age” into having sustainability as the goal for human development after the Rio declaration. Lately, within the environmental scientific sphere, the concept of resilience is increasingly superimposed on the sustainability paradigm. It is seen as important both for understanding of the present situation as well as a necessity for societies to survive in times of rapid change. During this period from “pre Brundtland” until today when resilience is in focus, the environmental science program of Ecotechnology started, developed and changed in response to changes in society. A goal, from the very beginning of the educational program, has been to empower students to take action. The types of action and how action competence has been perceived, has changed over the three decades the program has been running.

Objectives: Environmental science and sustainability is often difficult to teach since it demands an interdisciplinary approach stretching over the traditional faculty division of natural, social, and engineering sciences. At Mid Sweden University these three branches have been integrated in Ecotechnology education for 30 years. The purpose of this paper is to describe the interdisciplinary teaching with special focus on the development of the student’s action competence for sustainable development, in the light of how the environmental issues have developed.

Methods: The paper has a descriptive approach exploring the experiences from the 30 years of interdisciplinary teaching.

Results: Different teaching methods and strategies have been employed over time, partly in sync with changing overarching societal goals.

Conclusion: Some observations are 1) a key element to develop action competence is to push students to a self-propelled learning behavior rather than traditional teaching of facts, 2) to not too easily provide the students with answers will develop problem solving skills, 3) “doing-before-reading” teaching is more time consuming but seem to give deeper knowledge.

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