

Keynote Speech

## **Thinking Like an Ocean: Marine Education Principles that Ensure Coexistence between People and Nature**

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Recent advances in science and technology are giving researchers and economists unprecedented capabilities. Aquaculture and mariculture, for example, contribute to our seafood supplies, but such technologies place great demands on our fresh-water and oceanic systems, and they present great challenges to society. Is our global society learning to make wise and responsible decisions about how new technologies affect our fresh water and oceanic systems? Will the leaders of tomorrow have a more mature perspective than do the leaders of today, to make informed and sensitive decisions about long-term, societal and global issues?

Our schools worldwide are not generally producing environmentally literate students capable of functioning as citizens in a technological age. Increasingly, people feel alienated from technology and resource issues, and they see that leaders and educators are either ignoring fundamental issues or not responding positively to them.

If we update our visions of education now, we can offer powerful information about the earth's complex water system, of marine and aquatic resource issues, of science-technology-society connections, and of the values that we associate with resource issues. Such curricula must add strategies for helping students make reasoned judgements at both the personal and the societal levels in a fast changing, interdependent world.

### **Some Questions for Marine Educators**

Talking with teenagers and young children in schools, I notice how often they wish to avoid thinking about the future: "I'll never live to be an adult." I'm too frightened to think about it." "I can't do anything anyway, we might as well party." Likely the biggest obstacle in the environmental education movement is the feeling of powerlessness that many young people experience.

How can schools best help young people face the daunting prospect of adult life in the twenty-first century? What skills, capacities and insights do students need to understand and cope with a rapidly changing world?

### **A Holistic Model**

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A holistic model of marine and environmental education suggests an interplay between three outer realities--our “close reality (the personal and local), our intermediate reality (regional and national) and our distant reality (the wider or global world). The three are interwoven; each dependent on the others for its particular form and direction.

Positive early “close reality” feelings of love and respect for nature influence our approaches to knowledge and action. If we want our children to take up the all-important challenge of working to sustain both human communities and the environment we must encourage them to experience nature and value it positively. We must also model interest in understanding and protecting complex natural systems. Schools need to offer opportunities for students to study, reflect upon and discuss possible, probable and preferred futures.

The following principles are intended to help teachers at all grade levels design units of study that foster coexistence between people and nature:

- Provide students with direct experience with the environment providing a deeper understanding of natural systems and the impact humans have on those systems.
- Describe the various marine and aquatic ecosystems accurately, making connections to global systems.
- Awaken in students a sensitivity to the beauty and value of the natural world.
- Provide opportunities for students to decide what constitutes responsible action toward the environment and begin to practice it.
- Address both the real opportunities and the false expectations for managing our marine resources through advances in science and by applying technology.
- Acknowledge the contributions of indigenous cultures to long-term sustainability--knowledge proven effective over long periods of time can be extremely important.
- Develop monitoring skills.
- Give pupils opportunities to identify and articulate their own viewpoints and the viewpoints of others and to make decisions and accept the consequences.
- Teach a reverence for the past and future.