EDITORIAL INTRODUCTION

Education for Sustainable Development: Changes and Challenges

The United Nations Decade of Education for Sustainable Development (UNDESD), 2005-2014, strives to incorporate key concepts of sustainable development into educational policies and programs of the UN, other international agencies, ministries, non-governmental organizations (NGOs), community-based organizations, research institutions, the media and the private sector. The implementation scheme is being developed via a consultative process supervised by UNESCO. Twelve years after the 1992 Earth Summit in Rio de Janeiro, UNDESD draws attention to the important role that education may play in promoting sustainable development.

Education for sustainable development, as defined by UNESCO, is not merely a synonym for environmental education. Rather, it is the educational process of accomplishing sustainable human development--including economic growth, social development and environmental protection--in an equitable manner. Thus, educational programs for sustainable development may include both formal and informal initiatives for poverty alleviation, human rights, gender equity, cultural diversity, international understanding, and peace. Challenges exist in implementing these concepts within education, such as incorporating sustainable science into curricula; strengthening collaboration between different levels of education; and compensating for the unequal access to information and knowledge in different parts of the world.

This issue of CICE, published in collaboration with United Nations University Institute of Advanced Studies, explores ways in which education for sustainable development has been conceptualized and implemented in various historical and geographic contexts. By providing a platform for international perspectives on these issues, CICE seeks to broaden understandings of existing challenges, and how these are being addressed by academics and practitioners.

In **"holistic yet tangible": Embracing the Challenge of Complexity for Education for Sustainable Development**, Patrick Hanley examines the utility of an ecosemiotic approach to the epistemological relationship between humans and nature. He explores the applicability of a pragmatic method for making value judgments, in order to identify ways for ESD to meet the challenges of complexity.

Biodun Ogunyemi reminds us that the UNDESD poses disparate challenges to different nations and regions of the world and offers insight into the case of Nigeria in **Mainstreaming Sustainable Development into African School Curricula: Issues for Nigeria**. In analyzing the challenges for Nigeria, he suggests that success with current efforts will require the political will to learn from past mistakes and borrow from best practices across the globe.

Miki Yoshizumi and Takaaki Miyaguchi note that no single model exists for realizing ESD. They examine key elements of a successful Japanese ESD program in relation to the UNESCO framework in **Realizing Education for Sustainable Development in Japan:**

The Case of Nishinomiya City. The authors suggest that creating a mutual learning environment is central to any model for achieving sustainable development.

In **Education for Sustainable Development and the Question of Balance: Lessons from the Pacific**, Kathryn A. Jenkins and Bertram A. Jenkins address the ways in which ESD, operating in conjunction with certain Environmental Education models, can work to solve specific issues confronting developing countries in the Pacific, where unsustainable mining, logging and fishing practices threaten the culture, health and economy of local communities.

Finally, Richard Capozzi's essay, **Sowing the Seeds: Moving Curriculum and School Culture towards Education for Sustainable Development**, explores how ESD manifests itself in current educational thinking and how sustainability could be better integrated into the school experience. He argues for the development of a model small school founded upon the principles of ESD--a school that fosters an egalitarian culture that respects difference; the integration of technology and design, business, and core academic disciplines; a sense of community and place; values that contribute to building a culture of peace; and respect for life and the environment.

Taken together the articles and essay illustrate some of the ways in which academics and practitioners are responding to the conceptual and practical challenges of education for sustainable development. In doing so, they are effectively changing approaches to sustainability, from education *about* sustainable development to education *for* sustainable development.