A Whole New Green Day for Dalhousie

photo used with permission

by Tarah Wright
Associate Director (Undergraduate) College of Sustainability

Over the past three decades humanity has become increasingly aware of the growing number of problems that threaten human and ecosystem health. The ramifications of environmental degradation have led many governments and international agencies to highlight the need for human development to be based on principles of sustainability.

A sustainable society is "one that can persist over generations, one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or social systems of support" (Meadows et al.). While a sustainable future cannot be achieved through changes and actions in one sector alone, education is a key component in working towards this goal. According to the United Nations Educational, Scientific and Cultural Organization, "the goal of (higher) education is to make people wiser, more knowledgeable, better informed, ethical, responsible, critical and capable of continuing to learn. Education, in short, is humanity's best hope and most effective means in the quest to achieve sustainable development" (UNESCO, 1997).

Yet universities have been criticized for their unsustainable behaviour. David Orr (1995) argues that environmental problems are not the work of ignorant people, but "largely the result of work by people with BA's, B.Sc.'s, LLB's, MBA's and PhD's". Ecological footprint models show us that it is the well educated people of industrialized countries who use the majority of the earth's natural resources and who contribute the most to the world's sustainability problems. In fact, many scholars criticize higher education for producing disciplinary leaders incapable of addressing critical sustainability problems, because they are blindly contributing to them. Why is this? It seems that the academy is very good at fragmenting and sectoralizing information so that one discipline has no understanding of its impact on the other. For example, a student graduating from a business degree might understand the financial benefits of oil extraction, but not the full environmental, political, and social ramifications and costs (and vice versa for a student in political science or biology).

"Educating for a sustainable future requires a different approach from traditional delivery methods of teaching..."

So what role can the university play in creating a sustainable future? Einstein once observed that "the significant problems we face cannot be solved at the same level of thinking we were at when we created them." This is why Dalhousie University has launched the Environment, Sustainability and Society (ESS) program to be offered through the College of Sustainability (the first of its kind in Canada) and is the most significant and far-reaching change to the way Dalhousie educates its students in recent memory.

Educating for a sustainable future requires a different approach from traditional delivery methods of teaching to promote a full understanding or appreciation of sustainability issues as a whole and so that students learn how to translate knowledge into positive action. In the ESS program, we are not only changing some of the content that we teach, but also challenging traditional notions of how to teach. Professors in the program are drawn from six faculties and dozens of academic disciplines. Each core class in the ESS program will be team taught so that students are exposed to multiple ways of approaching sustainability.

ESS students, while sharing a common passion for the planet, will also come to the program from a wide variety of backgrounds. Instead of creating a stand-alone program (which could be interpreted as another silo), the ESS program requires students to combine their studies with another discipline. Depending on their specialty, students work towards a Bachelor of Arts, Bachelor of Science, Bachelor of Management,

Bachelor of Community Design, Bachelor of Computer Science or Bachelor of Informatics. The program brings students from different disciplines together to work on solving common problems and to infuse them with a new eco-conscious way of thinking. It also allows students to pursue their passions in different areas (theatre, computer science, planning, business, etc.) and enables them to make a difference in any profession they chose.

Classes in ESS will emphasize teamwork, problem-based, and experiential learning. Experiential learning is a student-centered approach that focuses on process and the development of independent thought. It has been described as "a process through which a learner constructs knowledge, skills, and value from direct experiences" (Luckmann 1996). Dewey believed that for learning to be effective it should shift from the memorization of a body of knowledge to a process of inquisition, knowing, and understanding (Dewey 1960). Kolb (1984) contributes by introducing the cycle of learning. For Kolb, complete learning begins with a concrete experience upon which a learner reflects to find meaning (reflective observation). The learner draws conclusions (abstract conceptualization) through reflection and discourse and finally enters a phase of active experimentation where ideas and conclusions are tested. This process ultimately leads to new experiences and the cycle continues. The Kolb model will inform instructors in the ESS program. Concrete experiences will involve field work, academic readings, laboratory experiments, and games. Reflective observation will be achieved through the writing of journals or group discussion. Abstract conceptualization will occur when students apply and test ideas in papers, projects, and model building. Finally, active experimentation is facilitated through case study, more field and laboratory work, and simulations. This ultimately will lead to the introduction of new experiences and the cycle will continue.

The introduction of experiential learning into the ESS classroom will have implications for

instructors, learners, and the planet. First, introducing experiential learning into the classroom fundamentally changes the traditional role of the professor from knowledge expert to facilitator of experiences. ESS professors will shed their didactic cloaks and become participants in the learning process. Their role will be to ask questions that encourage students along individual learning paths, offer advice and information, and provide relevant experiences for learning. While ESS instructors will maintain a sense of connection and continuity within and between courses through curriculum design they will nevertheless enter the classroom with the realization and understanding that students have previous experiences that affect who they are and that can contribute to the learning of others.

Bringing experiential learning into the classroom means that both students and teachers become active learners. Research into the use of experiential learning in the university classroom has shown that student motivation and satisfaction is increased through active participation in learning (Acosta 1991; Cranton 1989; Baslow and Byrne 1993). Another benefit of using experience in the classroom is the increased ability of students to transfer salient learning to other settings and situations. Students who are involved in their learning through experiential techniques are better able to make connections between their education and their daily lives than those who learn in the context of traditional pedagogies. (Cantor 1995; Cranton 1989; Knowles 1977).

Perhaps the planet as a whole will benefit most from bringing experiential learning into the ESS classroom. Research shows that university students who learn through active and experiential learning are more likely to translate their learning into action. It is very easy for students to keep a scholarly distance from changes in global temperature, the disappearance of species, or the effects of poverty on the lives of fellow human beings. Experiential learning opportunities will help students to develop a sense of empathy for society, the natural environment, and an understanding of how to solve sustainability problems through hands-on learning. After four years, students can expect to graduate as critical thinkers, communicators, researchers, and effective team members. They will be leaders who will approach all they do with an understanding of sustainability and will contribute to a new generation of leaders.

References

Acosta, V. (1991). Integrating Experiential Learning and Critical Inquiry in Health Education. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Baslow, R, & Byrne, M. (1993). Internship Expectations and Learning Goals. *Journalism Educator,* 47(4), 48-54.

Cantor, J. (1995). *Experiential Learning in Higher Education: Linking Classroom and Community*. (Report No. 7). Washington, D.C.: The George Washington University, Graduate School of Education and Human Development.

Cranton, P. (1989). *Planning Instruction for Adult Learners*. Toronto: Wall & Thompson.

Dewey, J. (1960). *On Experience, Nature, and Freedom*. New York: The Liberal Arts Press, Inc.

Knowles, M. (1977). *The Modern Practice of Adult Education: Andragogy Versus Pedagogy*. New York: Association Press.

Kolb, D. (1984). *The Process of Experiential Learning. Experiential Learning: Experience as a Source of Learning and Development*. (pp. 20-60). Englewood Cliffs, NJ: Prentice-Hall.

Luckman, C. (1996). Defining Experiential Education. *The Journal of Experiential Education*, 19(1) 6-8.

Meadows, D.H., Meadows, D.L., & Randers, L. (1992). *Beyond the Limits: Global Collapse or a Sustainable Future*. Earthscan, London.

Orr, D. (1995). "What Is Education For?" in D. Orr *Earth in Mind* (pp. 7-15). Washington: Island Press.

UNESCO. (1997). Thessaloniki Declaration. Gland: UNESCO.