

Research Symposium Strand

## Using Pedagogy of Place in Conservation Education

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Environmental education is not limited to formal learning opportunities. This study explored the influences of an environmental education program on the attitudes and conservation practices towards sustainable living of young adults. Two hundred and thirty nine resident-students from the University of Lethbridge were exposed to a customized education program including methods and ways to conserve energy and water, and a forum for discussion of current environmental issues. Motivation was defined as the key to getting students to conserve energy and water; therefore, we used the Motivation Toward the Environment Scale (MTES) to evaluate these parameters. No statistically significant differences were found between the pre and post surveys. Certain trends and patterns were identified indicating a small positive impact on the students' attitudes and behaviour towards conservation.

### INTRODUCTION

Within our post-secondary institutions, education cannot be limited to the classrooms and laboratories. Education needs to expand to include teaching the students a sense of responsibility for their actions and ethics throughout their daily experiences. Post-secondary institutions can lead by example and promote sound sustainable management within their own operations. The students' time in college and/or university is an excellent opportunity to instill value, and lasting impressions that will help them develop into environmentally literate citizens.

It is well established that knowledge alone does not lead to environmental action or the development of pro-environmental behavior . The goal of environmental education is to instill in learners knowledge about the environment, positive attitudes toward the environment, competency in citizen action skills, and a sense of empowerment . As suggested by Evans, Gill & Marchant , environmental education's aim is to offer long-term solutions to environmental problems.

The importance of creating environmental awareness is not a strategy but an immediate plan of action . Creating ecological awareness through teaching about

environmentally responsible behavior is important at all educational levels and needs to address three essential factors in behavioral change – information, motivation, and behavioral skills .

As part of a larger educational system, environmental education programs have been instrumental and adaptive in their efforts to establish and attain both short-term and long-term goals. Their flexibility is observed through the successful application towards both simple and complex problems, ranging from installing a water efficient showerhead, to designing a Platinum LEED facility . McNaughton suggests that teaching and learning experiences should develop positive attitudes and values about the world within which we live and nurture skills that enable us to be confident to take action for our communities and environment.

### Pedagogy of place

To provide a meaningful educational experience for students and teachers, institutions are continually updating resources, facilities, teacher training and learning environments. Though such changes are limited by economics and policy, there are two educational platforms that complement each other to form a Pedagogy of Place. The two affected educational platforms are place-based pedagogies to provide relevance and social and ecological experience in one's community and critical pedagogies, to develop theoretical foundations and challenge cultural assumptions . According to Woodhouse & Knapp , place-based education includes both conventional outdoor experiences and experimental methodologies, while Knapp promotes the inclusion of immediate surroundings with lived experiences.

Schools, colleges, and universities hold pedagogical power within their walls but the outer walls of these institutions are often overlooked as a source of education. The dynamic between learning and place is powerful and part of the learning experience in these establishments . Within our post-secondary institution, education cannot be limited to the classrooms and laboratories. Institutions need to lead by example. This can be done in part by being civically responsible in their design and construction of facilities as well as through on going operations. Post-secondary students are our future leaders. Their time in college and/or university is a great opportunity to instill values, and lasting impressions

that will help them develop into environmentally responsible adults. Many young people obtain the level of education and training that will provide the foundation for their incomes making them eager to learn .

This however, is only one foundation. As suggested by Orr , university and college campuses need to rethink the design of the places where learning occurs. Students have the opportunity to learn about the various levels of relationships between people and places through architecture, engineering, landscaping and their impacts on the local environment. Since many universities are liberal education oriented institutions; the freethinking open-minded character of their individual programs needs to be expanded to include multidisciplinary ethics and critical thinking to illustrate responsibility for actions. As proposed by Orr , the act of building is an opportunity to stretch the educational experience across disciplinary boundaries and across theory and application. Post-secondary institutions need to lead by example and to promote sound sustainable management within their own operations and their own walls by revealing the relationship between ecology and economy. The end goal of pedagogy of place is to prepare people to live, work and sustain the very places they once observed through the educational lens.

## METHODOLOGY

This study focused on attitudes and behaviors regarding water and energy conservation on a university campus, more specifically in the residences. Participants were residents of the two main residence buildings (Kainai and Pikani) located in Aperture Park on the campus of the University of Lethbridge. Both residences are coed and accommodate 239 students ranging from 19 to 21 years old. The group involved in this initiative was diverse. The study was conducted over a six-month period where resident-students participated in an environmental education program. The program consisted of exposing the participants to information on water and energy issues through conservation tips on the closed-circuit television network. Participants were asked to complete two surveys; one in early October, 2005 and another at the end of March, 2006. Both surveys contained measures relevant to the current study of attitudes and behaviors related to sustainability.

The Motivation Toward the Environment Scale (MTES) was the basis of the survey. MTES consists of subscales that measure an individual's level of intrinsic, extrinsic, and a motivation for environmental behaviors . The scale is composed of twenty-four items divided into six subscales , which represent the motivation construct identified by . Participants rated the 24 statements to which they agreed or disagreed using a Likert-type scale (1- strongly disagree to 7- strongly agree).

## FINDINGS

A 49% participation rate in the 'before' survey provides a good representation of the resident-student population. The 'after' survey, which had a 10% participation rate makes the data collected less representative of the overall attitudes and behaviours.

An increase in the identified regulation motivation was observed between the initial and final surveys. An approximate 5% increase the students' awareness toward the environment and their issues had an impact on their personal values. As proposed by Kollmuss & Agyeman , people need a basic knowledge about environmental issues and the behaviors that causes them to act pro-environmentally in a conscious way.

A 6% rise in introjected regulation motivation was observed. Since this type of motivation is linked to people's guilt and anxieties, we speculate that a sense of responsibility toward the state of the environment intensified due to the educational program. A 26% drop in external regulation motivation was actually positive since it indicates that students shifted their behavior from reward oriented to personal satisfaction. Within Bloom's taxonomy the affective domain has been reached but we cannot identify to which level. Affect, as well as cognition, is a key indicator of how a person will interact with the environment as observed by Pooley and O'Connor .

A positive drop of 10% in amotivation was detected. Since amotivation deals with the "I don't care" type attitude, the decrease indicates that the responding students showed a sense of connection and awareness of the environment. With a positive attitude towards the environment, it reflects the positive participation in this conservation program, agreeing with Krauss .

Utility meter readings during study period

The meter readings for both electricity and water consumption were used to validate the survey findings. The Utility department provided the data for the Kainai and Pikani residences over the past three years. A 12% water saving from the previous year was noted for the Kainai residence. Over 1% in electricity saving was observed for the Kainai residence and a more significant savings of 6% was noted for the Pikani residence.

## RECOMMENDATIONS

Throughout this study, students and staff provided feedback leading to these recommendations concerning forms of communication, training, and environmental initiatives.

More 'green' programs should be created for the resident-students as well as the whole campus. It cannot be assumed that the students will conserve or recycle anything on their own without some guidance. The information provided to the students needs to remain positive, and in context.

A training session should be added to the resident advisors' training week prior to the start of the academic year to inform them of the recycling program, water and energy conservation, and other green initiatives on campus.

The University of Lethbridge has begun to integrate environmental education programs within new projects. The Regional Health and Wellness Centre (RHWC) is one example of utilizing pedagogy of place to help educate students, staff, faculty and the community as to its "green" features. The RHWC is a silver LEED building thus promoting water efficiency, light pollution effect, daylight uses, and many other sustainable features. If this opportunity is used to its full potential, it will re-enforce the power of the learning experience as stated by Rohwedder and establish a dynamic relationship between learning and place.

## REFERENCES