

# **Ten-Year Reflections on Context-Based Learning in the Outdoor Classroom: Enhancing Teacher Learning Outcomes and Holistic Development**

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## **Abstract:**

Recent advances in the scholarship of teaching and learning have made significant contributions to the quality of students' educational experiences in Canadian universities. This article examines critical contributions of context-based learning as an effective medium in which to support field-based scholarship in outdoor education. Context based learning (CBL) provides an integrated and holistic approach to student development by drawing upon authentic learning environments, communities of practice, and experiential pedagogy. Action research methodology was employed to investigate CBL experiences, over a 10-year period, in a graduate-level outdoor education course at the University of British Columbia. Data in this study suggest that CBL: organizes field-based scholarship around issues relevant to learners; ensures that learning experiences are grounded in local communities and closely simulates learners' life experiences; and, is effective for achieving complex higher order learning outcomes and holistic student development. Context-based learning is viewed as an individual and social contextual process.

## **Key Words:**

Context-based learning, authentic learning environments, communities of practice, experiential pedagogy, teacher wellness.

## **Introduction**

Research shows that there is a need for innovative and responsive learning experiences in university curricula (Cox, 2004; Hubball & Albon, 2007). University students benefit from a meaningful and relevant curriculum that fully engages them in the learning process. All too often, however, university programs are developed in the

absence of contemporary curriculum and pedagogical theories in higher education (Baldwin, Persing & Magnuson, 2004). As a result, university programs typically rely on traditional methods of knowledge acquisition such as the transmission of facts and abstract problem-solving in largely graphic/text-based teacher-directed classroom settings. An excessive reliance on lecture-based methods is too often inadequate to address complex higher order learning outcomes and holistic student development.

Context-based learning (CBL) has the potential to provide meaningful and relevant curricula offerings by resituating student learning in the context of authentic learning environments, communities of practice and experiential pedagogy. Students in CBL courses can expect to develop valuable life skills such as critical thinking, self-directed learning, decision-making, effective communication and team building skills, and global citizenship (Gilbertson, Bates, McLaughlin & Ewert, 2006; Hubball & West in press). Very little research has investigated CBL processes and outcomes in university curricula contexts. This paper examines CBL experiences in a 3-credit graduate-level course on health promotion, wellness and life skills at the University of British Columbia, Canada. This annual field-based scholarship course is offered to teachers, instructors, and workplace and community leaders who are enrolled in graduate programs across campus. This study has implications for CBL experiences in multidisciplinary settings.

## Context-based learning

Context-based learning (CBL) is central to contemporary adult learning theories and rests on an assumption that learning is fundamentally situated and inherently social in nature (Cox, 2004; Hansman, 2001; Cobb & Bowers, 1999). That is, one cannot separate what is learned (e.g., field of study) from how it is learned and used in complex situations. Thus, CBL focuses on authentic learning environments (e.g., community and workplace settings) that provide critical cues for cognitive processing; the interactions of learners within a community of practice; and it incorporates learners' developmental needs and circumstances through experiential pedagogy (Hansman, 2001).

*CBL: Authentic learning environments.* Scholars have debated the merits and challenges of authentic learning environments particularly since the institutionalization of learning during the industrial revolution. Literature from diverse disciplines has espoused the virtues of rich and complex authentic learning/training environments with more recent attention afforded to issues such as 'place-based' learning, 'situated' learning, 'context-based' learning, 'service' learning, 'sustainability' learning, etc (Hansman, 2001; Lave & Wenger, 1991; McMillin & Dyball, 2009; Smith, 2007; Todd & Brinkman, 2008). Research points to the challenges faced by many institutions when attempting to bring the real world into the classroom in comparison to the challenges of taking students into the real world classroom to learn (Blair, 2009; Cooper, 2004, 2005; Smith, 2002; Stewart, 2008). Essentially, authentic learning environments are real-world places where people live and work and provide critical contextually-bound cues for developing knowledge, attitudes, skills and experiences (Keighley, 1997). For example, these settings are rich in complex issues, and they offer challenges and problems to solve from historical, social, economical, political, cultural, ecological and environmental perspectives. Authentic learning environments also provide powerful life experiences since they are inextricably linked with peoples' lives, identities, communities, livelihoods,

as well as in some cases, spiritual and emotional connections, and significant environmental and sustainability challenges (Tal & Orly, 2009; Simmons, 1998). Authentic learning environments can include (but are not limited to) the following settings: neighbourhoods, regional communities, workplaces, forests, beaches, rivers, pools, gardens, museums, and/or field trips in urban, coastal and rural settings.

*CBL: Communities of practice.* According to Wenger (1998), a community of practice (COP) is a group of people who share an interest in a domain of human endeavor and engage in a process of collective learning that creates bonds between them. Thus, building on the richness of authentic learning environments in CBL, the notion of a community of practice (COP) draws upon the developing knowledge and expertise (individually and collectively) from within groups to solve real world problems, such that the sum of the whole far exceeds that of the individual parts (Earles & Chase, 2001). Tuckman and Jensen's (1977) stages of group development provides a useful framework to develop and to analyze the effectiveness of a COP (Hubball & Albon, 2007). This framework suggests that groups progress through the developmental and, at times, awkward iterative problem-solving stages of forming, storming, norming, performing and adjourning. The *forming stage* refers to the process and dynamics that occur when a group is first introduced, either at the start of a course or subsequent meetings. The *storming stage* refers to the process and dynamics that occur as group members negotiate roles, responsibilities, task clarification and solutions to problem solving situations. The *norming stage* refers to the process and dynamics that occur as the group begins to function in class routines and is able to bring tasks to completion. The *performing stage* refers to the process and dynamics that occur as the group functions to its full potential and efficiency in satisfactorily bringing tasks to completion. The adjourning stage refers to the process and dynamics that occur as the group function comes to an end, either in the final phases of each subsequent meeting or for the closure ceremony of a whole course.

*CBL: Experiential pedagogy.* The benefits of learning from experience and collaboration are not unfamiliar concepts in the education literature (Dewey (1938). Experiential pedagogy is necessary to capitalize the benefits of communities of practice in authentic learning environments fully. Essentially, experiential pedagogy focuses on the art and science of facilitating quality learning experiences in these unique and rich settings (Gardner, 2000; Kolb, 1984; Tan, 2007). Learning-centred principles thus guide experiential pedagogy. For example, it requires instructors to be responsive to students' (individually and collectively) learning needs (e.g., interests, backgrounds, prior experiences, goals and barriers to participation), and draw upon an eclectic range of active learning strategies in carefully planned, positive and authentic learning environments. Students (individually and collectively), are also expected to take an active role in these unique and challenging learning experiences by utilizing prior (and developing) knowledge and expertise in order to think like leaders (i.e., when planning, participating and evaluating) and develop critical understandings and effective responses to the realities and dynamics of simple to complex real-world problems whilst still enjoying the intrinsic benefits of learning in natural settings (Beard & Wilson, 2004).

CBL, therefore, has the power to achieve complex higher order learning outcomes, enhance holistic (i.e., physical, mental, social, emotional, spiritual, resourceful,

environmental) student development, and engage students on a level that is not possible in traditional classroom settings. As part of a broad offering of learning-centred education, CBL has enormous potential to provide meaningful and relevant curricula that serves to enhance student engagement and retention while addressing core learning outcomes and furthering the aims of higher education (Senge & Scharmer, 2008). For the purpose of this study, CBL processes and outcomes were examined over a 10-year period, in an annual graduate-level course (PETE 585) on *health promotion, wellness and life skills* in outdoor settings at the University of British Columbia, Canada. The following research objectives were designed to examine CBL processes and outcomes in this field-based scholarship course to investigate whether and how:

1. a community of practice developed in authentic [outdoor] classroom settings to enhance student learning.
2. experiential pedagogy was applied in authentic [outdoor] classroom settings to enhance teacher learning outcomes and wellness.

### **Course context for investigation**

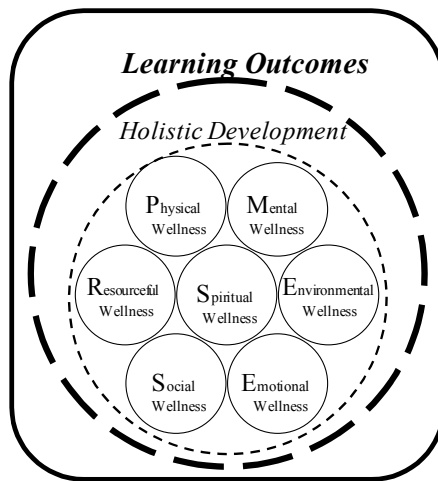
First, it is useful to describe the course context for this investigation. PETE 585 *Health Promotion, Wellness and Life Skills in Outdoor Settings* is a 3-credit graduate-level course for teachers, instructors, and workplace and community leaders at the University of British Columbia, Canada. This 3-week intensive summer course (including one overnight camp field trip) began in 2000 and is offered annually through the UBC Department of Curriculum and Pedagogy. The course is capped with 15 students and it provides an interdisciplinary and holistic approach to health promotion, wellness and life skills in outdoor settings. Students elect to take this course from all disciplines across campus (e.g., nursing, geography, social studies, music, physical and health education, arts and sciences, medicine). With an emphasis on field-based scholarship, students examine concepts of wellness and learning communities as critical foundations for curriculum and pedagogy within and across disciplines.

By the end of this course, graduate students are expected to have demonstrated the following course learning objectives (CLO's): 1) apply and integrate pedagogical content knowledge in the context of teaching health promotion, wellness, and life skills in outdoor settings; 2) think critically about contemporary issues related to wellness and learning communities in diverse contexts; 3) demonstrate professionalism toward class participation through personal, social and environmental responsibility; 4) develop a critically reflective practice regarding health promotion, wellness, and life skills in an outdoor context; 5) design, facilitate and assess critical thinking and problem-solving in the outdoor classroom through safe and effective experiential learning methodologies; and, 6) develop research methodologies to investigate health promotion, wellness, and life skills in outdoor settings. Student learning is assessed using a variety of individual and collaborative methods (e.g., presentation of an outdoor resource portfolio [CLO's 1,4]; journal reflections [CLO's 1-6]; professionalism [CLO's 1, 3-5]; a major paper on program development and evaluation research [CLO's 1-2, 5-6]; and a peer-led workshop presentation [CLO's 1-2, 4-6]) with clearly defined criteria.

Context-based learning principles guide the course's pedagogical approach. The following diagram provides a conceptual framework for course implementation.

### **CBL in the Outdoor Classroom**

*[Authentic Learning Environments, Community of Practice, Experiential Pedagogy]*



**Figure 1 Conceptual framework for PETE 585: CBL in the outdoor classroom**

For example, guided by the course learning objectives, students engage in a community of practice in carefully planned authentic learning environments. Further, through experiential pedagogy, an eclectic range of active learning strategies (including leadership projects, multiple intelligences, field-based scholarship and diverse assessment practices) are employed. Students, (individually and collectively), are also expected to take an active role in their learning by utilizing prior (and developing) knowledge and expertise in order to think like leaders and develop critical understandings and effective responses to the realities and dynamics of complex outdoor contexts, whilst still enjoying the intrinsic benefits of learning and wellness in natural settings.

## **Method**

This study employed action research methodology to examine whether and how context-based learning, over a 10-year period, was implemented to meet the diverse needs and circumstances of teachers in a graduate-level outdoor education course at the University of British Columbia. Action research methodology is a distinctive form of practice-based inquiry with an explicit transformational agenda in higher education (Friedman, 2008; Senge & Scharmer, 2008). Essentially, action research methodology internalizes theory and practice through a systematic and cyclical process of inquiry that involves hypothesis testing, planning, observing, analysis, and action.

To address the above research questions, a variety of qualitative methods were used to collect data over the period 2000-2009 (Bogdan & Biklen, 2006). These methods included focus group interviews, formative and summative student evaluation surveys, course syllabi analysis and instructor's critical reflections, and analysis of individual course learning assignments pertaining to course learning outcomes. Graduate students enrolled in this course were experienced teachers, instructors, and

workplace and community leaders. The co-researchers and authors of this paper include the course instructor and a course participant. For the purpose of this study, the student group will be referred to as teachers, and the most current course offering (2009) will be used to examine question 2 in terms of applications of experiential pedagogy in authentic [outdoor] classroom settings to enhance teacher learning outcomes and wellness. Annually, each July, a new cohort of teachers met for this course on Tuesdays and Thursdays for 2.5 hours, as well as for partial and full weekend learning experiences (including one overnight camp field trip).

Data collection with respect to Question 1 focused on the course instructor's annual daily teaching logs, course reflections and course pictures to monitor the ways in which the different assignment groupings (i.e., workshop, camp, and tree communities) progressed in terms of group processing and assignment effectiveness. Second, using one representative cohort (2009), teachers in camp community groupings were asked to reflect on their own experiences of Tuckman and Jensen's iterative group-processing framework and record written strategies to facilitate efficient progressions through these cyclical stages. Using the one-minute paper technique, teachers were also asked to provide critical feedback each week about the effectiveness of their assignment groups, as well as overall course experiences.

In order to address question 2, an analysis of course syllabi, course pictures, instructor reflections, and formal student course evaluations was conducted over a 10-year period to investigate course transitions, critical pedagogical connections between course goals and CBL experiences, alternative processes and outcomes of CBL, and overall course effectiveness outcomes. Second, using one representative cohort (2009), individual teacher's learning assignments were examined to investigate the extent to which course learning outcomes were achieved. Finally, the representative cohort was required to critically reflect on personal wellness experiences and record written strategies using the one-minute paper technique to facilitate wellness applications. Tuckman and Jensen's (1977) stages of group development framework was used to analyze whether and how a community of practice developed in authentic [outdoor] classroom settings to enhance student learning. The 2009 course syllabus and Hubball & West's (2008a) faculty wellness framework were used to analyze whether and how experiential pedagogy was applied in authentic [outdoor] classroom settings to enhance teacher learning outcomes and wellness. The range of qualitative data thus obtained was analyzed for common and isolated experiences and for major themes (Bogdan & Biklen, 2006; Davidson, 2001).

## Results

For effective applications of CBL, it is critical to understand the ways in which a community of practice (COP) can develop, as well as how experiential pedagogy can be applied in authentic settings. The following data reflect COP developments and applications of experiential pedagogy in an outdoor classroom setting.

*Results Objective 1) whether and how a community of practice developed in authentic [outdoor] classroom settings to enhance student learning?* Tuckman and Jensen's (1977) stages of group development (forming, storming, norming, performing, and adjourning) provided a useful framework to analyze whether and how a community

of practice (COP) developed in authentic [outdoor] classroom settings to enhance student learning. It is important to note that, as part of the COP, the authors/co-researchers were actively engaged in this process as instructor and teacher participants through dialogue, class discussions and reflection on course pictures and experiences. An analysis of representative teacher responses to anonymous formative and summative course evaluation questionnaires, as well as instructors' reflections and field notes suggested that teachers became progressively more engaged and comfortable with the demands and processes of CBL. This was particularly evident with a shift from the initial apprehension to the increasing cohesion and positive dynamics that developed within the class as it progressed through the forming, storming, norming, performing and adjourning stages of group development.

The *forming stage* of the COP typically occurred on day 1 of the course with introductions, and then continued at the start of each subsequent meeting with increasing efficiency as teachers became more familiar with each other and the initial class routine to recap questions, readings, the day's agenda and its importance for further development. For example, teachers were initially welcomed to the course and congratulated for being able to register in it since enrollment is annually filled within 30-minutes of being posted on the telereg system, and 3.5 months prior to commencement. To some extent, this issue captures the word-of-mouth reputation and popularity of this course among graduate students, and certainly contributes to the initial positive energy and trust for teachers to engage in CBL processes. With the exception of the first and final course meeting in a university classroom, authentic learning environments occurred in a local university neighborhood community centre and garden plot, in an aquatics centre; on a local gulf island and forest day trip, on a local beach venue, in a local museum garden and historic first nations site, and on a distant gulf island venue that included an overnight camping field trip. During the forming stages, several teachers commented on the usefulness of initial interactivity during meetings, the recognition of teachers' expertise within the group, the expectation to work and demonstrate leadership roles in different learning communities (i.e. workshop, camping and trees) throughout the course, and the enthusiasm for the plethora of exciting and challenging learning experiences presented in authentic learning environments. Representative cohort reflections from teachers' initial experiences centred on the 'group climate' and excitement for upcoming CBL encounters:

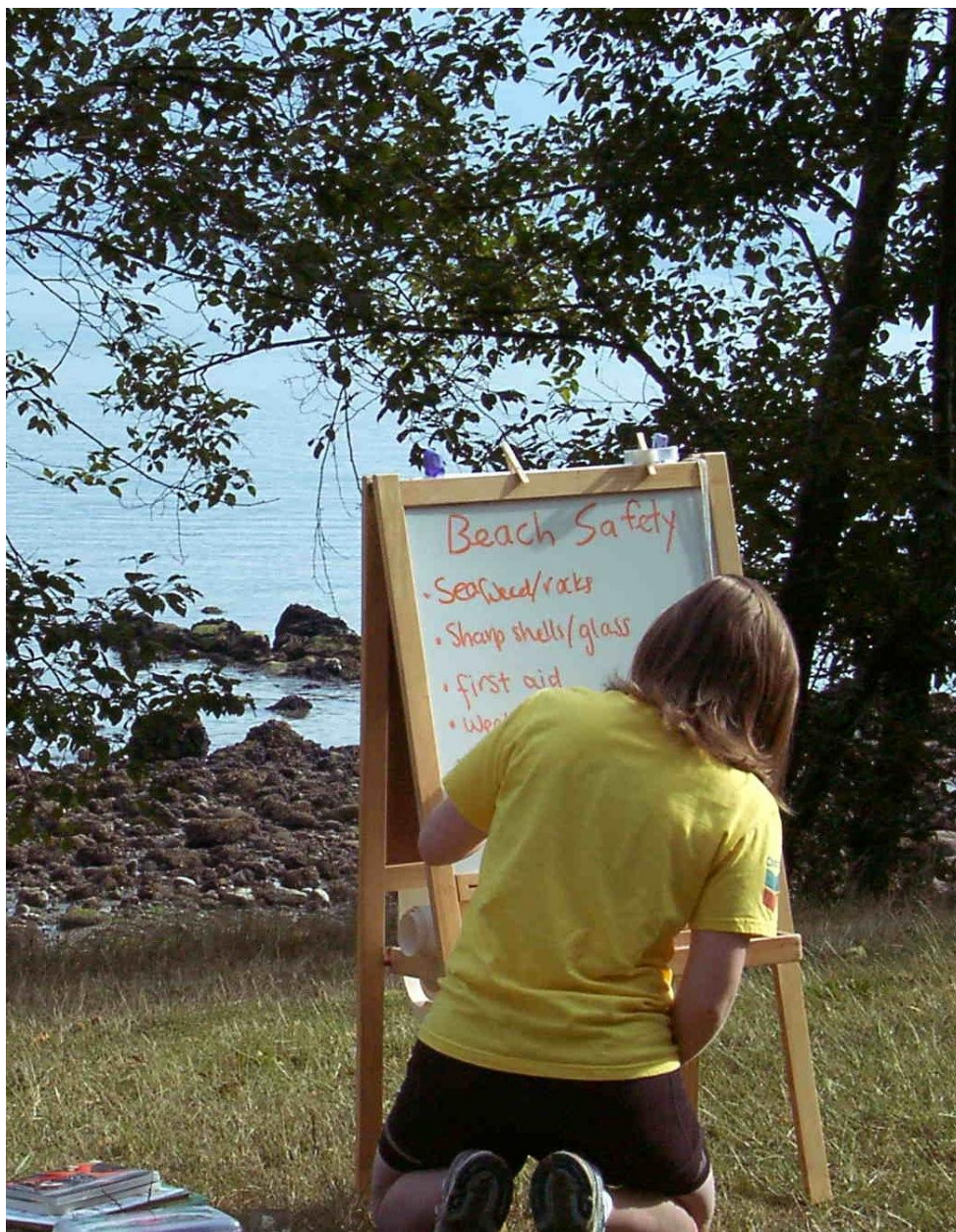
*From Day 1 we quickly got to know our class mates and quickly realized that, in the different groupings we were assigned, we had to organize working roles and contact numbers and/or transport to ensure that all group members knew where the next outdoor learning venue would be and also how each of us was getting there – e.g., walking, bus or car pooling... I really liked the idea of the 3 different working groups throughout the course and eventually being able to work with everyone ...The positive and welcoming course atmosphere made everyone aware of everyone's name, the diverse backgrounds and expertise within the group, and how the classroom community contributed to learning outcomes...Inspiring class locations with such natural beauty...The instructor got us started straight away with reflections and interactive discussions about our experiences as a sort of bridge to the immediate off-campus location for learning.*



The *storming stage* of the COP typically occurred after the initial forming stages as the class moved into the somewhat awkward, contentious, challenging and new problem-solving phase in the authentic learning environments. In this phase, teachers were sharing and assessing prior knowledge and expertise within the group, as well as thinking critically about new course material and/or theoretical frameworks (e.g., holistic wellness, multiple intelligences) that could inform potential resolutions to real life problems (e.g., environmental stewardship, effective teamwork) in particular learning environments (e.g., community vegetable garden plot, island field trip). Further, specific biases, challenges, likes and dislikes surfaced; and roles, responsibilities and ground rules were (re-) negotiated including course assignment clarifications. Generally, comments from teachers, at this stage in the course, indicated some of the frustrations, problems, tensions and challenges that needed further attention:

*It would be helpful to spend some time at various class meetings to share and discuss our projects and to see an example of what a final product looks like in terms of theoretical frameworks for developing and evaluating outdoor*

*programs...in such an intensive course, I really need to be clear when assignments are due as I'm taking another summer course too and it becomes a hectic period with other things/people that I have to juggle in my life, especially the weekend field trips...It would be helpful to have ready-made maps for each of the outdoor learning locations – this could be placed on a course WebCT site...The readings are really good and helpful but I'd prefer them in advance of class meetings rather than as follow-up material.*



*Norming Stage.* Following the storming stages, and typically in the early to mid-phase of the course, outdoor classroom routines were established, which were reflected in teachers' acceptance of more responsibility for active learning contributions. For example, various organizational roles (equipment, transport pooling, and working group leadership) were volunteered by teachers; course assignment expectations and

developments became functions of discussion, goal setting and time management; and the social environment became more familiar and relaxed as teachers had a greater sense of interdependence with outdoor CBL processes and outcomes. The one-day island field trip was designed purposefully 1-week ahead of the more distant and challenging two-day field trip at a different gulf island (though beginning at the same ferry terminal). This situation has many safety, as well as pedagogical, benefits. For example, the course instructor was able to further develop and assess the group's (and individual's) organizational readiness to participate in full outdoor CBL environments and the first one-day trip provided an important simulation and successful experience to enhance group confidence prior to the progressively challenging and more complex distant overnight CBL field trip experience. At the mid-stage formative anonymous course feedback, teachers typically commented about the usefulness of the group progressions and positive scaffold experiences that were presented in authentic learning environments:

*Working in different groups with different classmates is a great part of the course...I enjoy hearing from different perspectives...I like the small group sizes of 3-4 and amazingly we are able to achieve quite a bit in a short period of time...I appreciated our workshop debrief and feedback about its strengths and suggestions for improvement...the Bowen island [first] field trip was great, I didn't realize it was so accessible from Vancouver and had so many learning experiences to offer - I'm definitely going to bring my school group here to do a forest and beach project...I haven't been kayaking for years and it certainly gave me a confidence boost and inspired me on Bowen for next week's longer island kayak experience.*



*Performing Stage.* This was a progressive extension from the norming stage and typically occurred from the second week of the course on. In this phase, the class demonstrated increasing and high levels of proficiency toward CBL processes and outcomes as well as a heightened sense of connectedness with the outdoor context. For example, aided somewhat by clearly defined assessment criteria contained in the course syllabus, teachers in various working groups demonstrated increasingly confident and articulate verbal responses to questions and discussions around field-based scholarship projects; the quality of reflective statements about multifaceted wellness concepts included in journal reflections became more focused; and, the level of leadership toward teacher workshop presentations and critical group contributions tended to progress to a sophisticated levels of analysis around strengths and weaknesses of CBL processes and outcomes. In general, teachers particularly commented on the impact of the classroom community on their own learning and how far the whole group (and each individual) had traveled and grown in terms of their own expectations:

*The sense of community in this course is palpable. I think it's mainly because we've all worked with each other successfully in pretty challenging environments...I have developed a great confidence to do more fun outdoor things and attend to my own wellness...I really appreciated having the focused time to get to know my class mates so well...I enjoyed the 'flow' of discourse in this course, especially as we all become more familiar with each other...our camping community group had such a laugh together...the kayaking adventure around Newcastle Island was incredibly beautiful and challenging - everyone pulled together, helped, struggled a little and was very positive and supportive...as a group we've come a long way in 3-weeks!...we were really pleased with our leadership workshop and that our peers appreciated it so much after all we'd put into it.*



The *adjourning stage* typically occurred at the closure of each class meeting with questions, answers, summaries, reflections, and “where next” discussions. The adjourning stage was a natural closure phase to the whole course and is typically filled with mixed feelings (e.g., fatigue/energized/subdued, sense of accomplishment/disappointment, relief/sadness etc). Further, it is also an important opportunity for groups to share snacks and refreshments and relive course experiences, share critical and funny incidents, assess overall course strengths and weaknesses, as well as consider further opportunities for networking and outdoor experiences. On the final day of the course, pictures and course DVD highlights were shown by the course instructor and posted on the course website to further celebrate collective and individual accomplishments. Data suggest that the context in which we learn has the ability to influence how we view the subject matter and its relevance. For example, written responses from teachers’ anonymous course feedback (summative), typically commented about the value of the authentic learning environments, the classroom community and quality of teaching and learning experiences:

*...can't believe it's all over, feels like it was only yesterday since we started in this classroom yet in other ways feels like we've been together for ages...I feel very tired after the 3-weeks though thoroughly satisfying...wish I could do more courses like this in my Masters program...this course should go on for longer...had to scramble till late last night putting the final touches to my project and resource portfolio...fantastic course, I learned so much in 3-weeks...I'll surely miss my classmates in this course but I've made many new friends...I especially enjoyed the on-site readings, reflection time and field-based scholarship activities in wonderful settings...I learned a lot in this class, it was one of the best courses I've taken in my Masters and have gotten lots of new ideas for my thesis.*



### ***Improvements to developing a community of practice in this outdoor context***

Various aspects of the course can and have been improved each year with new passing groups, ideas and changing circumstances. For example, data suggest that in terms of developing communities of practice in this context, previous changes for teachers have included increasing the different number of working group experiences, increasing course leadership opportunities (e.g., partner and small group), increasing the number of formative course feedback experiences, increasing the number of field-trip sites, decreasing the number of course assignments, and increasing the use of technology (e.g., course DVD and WebCT access). Data suggest that the following strategies would further enhance teacher learning: providing maps of the different learning locations would enable individual working groups to better organize their group members' transport requirements (if necessary) and ensure that each member was clear about time considerations and how to travel to the off-campus location. In the early (storming) stages of group development, it would be better if some time at the outdoor locations was given for working groups to discuss their individual writing projects and get preliminary feedback and a peer-review on drafts. Further, data suggest that during the second field trip, better guidance could be provided to camp communities about the quantity of food necessary for the 2-day day trip since, despite very conscientious attitudes toward sustainability, too much excess food went to waste. This strategy would also assist with a reduction of weight carried by camp community members during the long hike to the camp-site.

*Results: Objective 2) whether and how experiential pedagogy was applied in authentic [outdoor] classroom settings to enhance teacher learning outcomes and wellness.* There are many ways that CBL was connected to course learning outcomes. For example, on a structural level, the course syllabus introduced on day 1 identified not only the pedagogical approach for the course but also how each of the five assessment methods and clearly defined evaluation criteria were connected to particular higher order learning outcomes. An analysis of ten course syllabi, from 2000-2009, indicated that the number of course learning objectives had been reduced (10 to 6) and more refined toward higher order learning outcomes (e.g., critical thinking, effective leadership and communications). Also, course assessment methods and evaluation criteria reflected increasing levels of integration with course learning outcomes and authentic CBL experiences (individual and collaborative).

Experiential pedagogy engaged teachers in field-based scholarship through a wide variety of methods including reading and discussions, authentic assessment practices (self, peer, group and instructor feedback), classroom research projects, leadership workshop presentations, and effective questioning strategies (Hubball & West, in press). Generally, the range and quality of teachers' assignments were very impressive. Peer-led leadership workshops (40-minutes interactive), for example, which were facilitated at outdoor course venues, focused on environmental arts and crafts, first aid, camp organization and nutrition, outdoor aquatics and seashore and marine life topics. In light of the course learning outcomes, the following excerpt provides a representative example of the quality of a teacher's outdoor leadership plan and reflection paper

following implementation of an interactive workshop (assessed separately but integral to this assignment) at the site of a local beach environment.

### **SEASHORE AND MARINE LIFE LEADERSHIP WORKSHOP**

#### **Learning Outcomes**

- *Identify and describe the intertidal zones at the seashore*
- *Demonstrate beach etiquette and an understanding of conservation for marine organisms*
- *Critically examine marine organisms and environmental impacts in the intertidal zone*

*5-10 minutes – Prior learning assessment and beach safety talk*

- ❖ *Prior learning assessment – Predict the tide flows*
- ❖ *Wear proper footwear – soft soled shoes with a closed toe are best*
- ❖ *Set boundaries in which the students are allowed to explore*
- ❖ *Set up a buddy system to help eliminate the possibility of losing one student*
- ❖ *Carry a well-stocked first aid kit. Algae on rocks can slippery; barnacles and mussels are sharp*
- ❖ *Explore in groups and honour the buddy system; never explore alone*

*5-10 minutes – Interactive observation/analysis: Protecting seashore life forms*

- ❖ *Turn the rocks back over slowly so you do not crush animals living on, beside, or under the rock*
- ❖ *Do not remove attached organisms (limpets, chitons, etc.) from rocks*
- ❖ *Leave the specimens in their natural habitat and do not move animals*

*20-25minutes - Participatory Activity*

- ❖ *Introduction to the intertidal zones: spray / splash zone, high intertidal zone, mid intertidal zone, low intertidal zone (Refer to the seashore zones supplementary handout)*
- ❖ *The transect: a mapping technique for the study of intertidal zones*
- ❖ *Working in small groups, each group is assigned to an intertidal zone to locate and identify marine organisms (refer to the life in seashore zones supplementary handout)*

*5-minutes - Closure*

- ❖ *Sharing what was learned, key references*
- ❖ *Question and answer session around key learning outcomes*
- ❖ *Brainstorming further learning and interesting study projects in this context*

*Workshop Reflection:*

*The practice of compiling resources to support this experiential leadership workshop further solidified the importance of incorporating theory into every learning experience. I found that acknowledging the material as theory added a new layer to my understanding of intertidal zone exploration. I enjoyed presenting to a peer-adult group, as I usually explore the seashore with children. I found that despite the differences in age and experience, similar questions were asked and similar responses offered to my questions. While it surprised me, it also opened my mind to the possibility of similar programs for community groups or other organizations. The importance of educating people about conservation issues and proper beach etiquette was reinforced in my mind today when my classmates demonstrated their interest in the subject, and a keenness to know*

*more. Their interest in the seashore was encouraging because I feel that it is so important to incorporate marine awareness and conservation into the curriculum. I felt that our workshop was successful mostly due to the context in which we were teaching. Without the beach, our leadership workshop would not have been nearly as successful or inspiring for us as teachers or learners.*

Outdoor education is interdisciplinary by nature, and learning in context has the ability to identify and address a myriad of connections through experiential pedagogy. In light of the course learning outcomes, teachers were required to develop field-based research projects (6-page scholarly essays) by integrating course readings and their experiences at carefully selected outdoor venues. Scholarly papers focused on the theoretical underpinnings for program development and evaluation in a range of authentic settings (Baldwin, Persing & Magnuson, 2004). Topics included school-based and youth leadership programs; university, workplace and community wellness programs; healthy school communities, and cross-curricular school garden projects. The following excerpt provides a representative example of the quality of a teacher's 6-page field-based research paper.

### CROSS-CURRICULAR SCHOOL GARDEN PROJECT

*...researchers have found that school gardening, when used in an integrated learning context, has "increased science achievement and behavioural improvement in schools" (Blair, 2009, p.33)...By making environmentally sustainable choices, students in this project will become environmental stewards and also have the power to act as role models for their peers and families...The goal of this project is to have students gain awareness about the choices they make as consumers, and the impacts that their choices may have on the environment...cross-curricular activities in this project incorporate mathematics, writing, biology, research and presentation skills....Teachers often use experiential activities, such as field trips, and yet they seldom have the pedagogical knowledge and experience to create any impact on the student's learning (Tal and Orly, 2009)...According to Priest (2001), when evaluating experiential learning programs, one must identify what satisfaction, learning, or change is obtained versus what was expected...researchers have found that an overemphasis on factual knowledge in outdoor programs has led to weakness in processing skills and critical thinking (Blair, 2009)...useful pedagogical frameworks enable teachers to conduct field trips and provide students with the opportunity to discuss and reflect upon their work (Tal and Orly, 2009).*

### Garden Project Research Questions

1. *To what extent did student's behaviour change after a year of activities based on sustainable eating awareness?*
2. *To what extent did other staff members and peers become more aware of the issues as a result of the activities?*

*...According to Owen (2001), the timing and methods by which you collect data is key to program evaluations. To carry out this program evaluation, varied data forms would include focus group interviews with students and staff, a review of student's nutrition journals and a review of subject area scheduling calendars for class time in the school garden area. Further study possibilities...References.*

Throughout field-based scholarship experiences, teachers typically remarked how very struck they were by the powerful value of reflection and holistic wellness in these authentic learning environments (Hubball & West, 2008b; McGowan, 2000; Reed, 2006). Holistic wellness is influenced by interconnected and critical domains within the broad social context (macro level) and personal experience (micro level). Personal wellness occurs at a micro-level and includes physical, mental, social, emotional, spiritual, resourceful and environmental domains (Hubball & West 2008a). In an outdoor context, Physical wellness refers to optimal levels of physiological functioning (e.g., hiking in the great outdoors); Mental wellness refers to optimal levels of cognition and psychological functioning (e.g., problem-solving in outdoor leadership situations); Emotional wellness refers to optimal levels of self-control and contentment (e.g., increases in self-esteem from success-based outdoor learning encounters); Social wellness refers to optimal levels of interpersonal functioning (e.g., effective 'tree' working group communities); Spiritual wellness involves a complex process toward heightened awareness and connectedness with self, others and all things in the natural environment (e.g., 'friendly silence' reflections); Resourceful wellness refers to optimal levels of applied life skills (e.g., navigation and organizational skills); and, Environmental wellness refers to optimal levels of environmental engagement (e.g., being in the fresh air and wilderness settings). In terms of the development of holistic wellness, teachers generally commented that the CBL processes in the authentic learning environments were particularly effective:

*...The myriad reasons that each individual chose to register for this class were shared and explored throughout our three weeks together; however, our motivations for participating fell short of the knowledge and skills we gained in such a short period. While every component of the course resonated with aspects of my own life, the exploration of wellness as an integral life skill was enlightening...Being introduced to a multiplicity of wellness domains as an integral aspect to healthy living was enlightening...I have continued to use wellness applications in my own life, and in my teaching...friendly silence reflections occurred most often in a green space, which encouraged environmental wellness and appreciation...Connection with the environment and the associated responsibilities to yourself and others while participating in outdoor activities enabled the group to consider spirituality as "a journey of the heart" (Anderson, p.15, 2007)...My peers and I have spent three weeks in a journey through the domains of wellness and I know that the journey is not over. Personally, the concept of wellness, and the associated domains has already affected my approach to pedagogy and to life. I am eager to incorporate the applications we learned in PETE 585 into my teaching and my own personal wellness.*

In addition to the quality of teachers' work, the success of this course over a ten-year period was reflected in the word-of-mouth course reputation and full student enrollments within minutes of this course being posted on the university's telereg system, as well as impressive annual students' course evaluation data (mean range 6.83-6.91/7.00) and co-authored course scholarship projects. Moreover, data suggest that CBL processes enhanced teacher learning outcomes and wellness in the PETE 585 outdoor context. In particular, the recognition among class members of different teacher strengths

(knowledge, abilities, skills, expertise and disciplinary backgrounds) was an important ingredient to the cohesion and success of this classroom community. Furthermore, conducting CBL activities at various off-campus local venues created a sense of 'field-trip bonding' among teachers, provided social and academic support networks, and added an authenticity to this field-based scholarship course.

### **CBL challenges, transitions and improvements for next time:**

Facilitating CBL in the outdoor classroom can be problematic and challenging. Problems can arise through poor implementation of CBL (e.g., mismatch of teaching and/or learning style and/or poor preparation of teachers and students for utilizing CBL methodology and holistic learning experiences). The complex logistics of organizing CBL and field-based scholarship (transportation, appropriateness to conduct class at selected venues, safety considerations, and distribution and use of related scholarly articles), as well as the additional energy required of both teacher and students to engage in it, can be too overwhelming for some, and therefore present significant barriers.

As to be expected, not all theoretical constructs from CBL were implemented in practice in this course, as intended. Although the annual students' course evaluation data is impressive, this course continually refines and evolves from one year to the next. Based on the valuable suggestions from new groups, critical instructor reflections, as well as the necessity to respond to ever-changing and dynamic outdoor environmental conditions, this course is in constant transition with on-going improvements and innovation (including co-authored course scholarship projects). Thus, in addition to the annual 'tweaking' of the course syllabus (e.g., refining course learning outcomes and assessment practices, weekly sub-themes, and evaluation criteria), the following suggestions will further enhance teacher learning and wellness outcomes in this course.

First, day 1 of the course could better prepare teachers for CBL expectations by providing information about related processes (e.g. teamwork, communications, data collection, problem definition, decision-making, planning, goal-setting, active performance, and reflective analysis). This would help ensure a smoother transition into the outdoor learning experiences on day 2. Second, it will be beneficial to request that teachers provide regular 1-minute paper feedback about course strengths and weaknesses in order for the instructor to respond more quickly to course concerns and enact possible changes in the context of the 3-week intensive course. Logistically it may not be possible to engage all teachers in the regular 1-minute paper feedback. Therefore, how to obtain representative feedback from teachers would become an important consideration. Finally, data suggest that increasing numbers of teachers would like to utilize the WebCT platform as a mechanism to further support field-based scholarship in this course by posting examples of assignments and selected readings, as well as for teachers to share and exchange useful program resources and contact information.

### **Conclusion**

CBL is gaining interest among university instructors in a wide range of disciplines. CBL provides an exciting opportunity to further explore the possibilities and outcomes of

(re) situating traditional classroom learning environments. By drawing on integral components (authentic learning environments, communities of practice and experiential pedagogy), this paper highlights critical contributions of CBL as an effective medium in which to support field-based scholarship. Data in this study suggest that CBL: organizes field-based scholarship around issues relevant to learners, ensures that learning experiences are grounded in local communities and closely simulates learners' life experiences, and is effective for achieving complex higher order learning outcomes and holistic student development. CBL processes and outcomes presented in this outdoor context are transferable to a broad range of disciplines and field-based scholarship settings. CBL, however, is not a panacea for effective teaching and learning. As part of a holistic approach to student learning experience, CBL provides a unique framework to enhance learning outcomes and field-based scholarship. Context-based learning is viewed as an individual and social contextual process.

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