

**THREE APPROACHES TO OUTDOOR EDUCATION:  
A WHITEHEADIAN INTERPRETATION  
OF THEIR POTENTIAL FOR PRACTICE**

A Thesis Submitted to the  
College of Graduate Studies and Research  
in Partial Fulfillment of the Requirements  
for the Degree of Master of Education  
in the Department of Educational Foundations  
University of Saskatchewan  
Saskatoon, Canada

By  
Yubo She

© Copyright Yubo She, August 2010. All rights reserved.

## **PERMISSION TO USE**

In presenting this thesis in partial fulfillment of the requirements for a Postgraduate degree from the University of Saskatchewan, I agree that the Libraries of this University may make it freely available for inspection. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by the professor or professors who supervised my thesis work or, in their absence, by the Head of the Department or the Dean of the College in which my thesis work was done. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the University of Saskatchewan in any scholarly use which may be made of any material in my thesis.

Requests for permission to copy or to make other use of material in this thesis in whole or part should be addressed to:

Head of the Department of Educational Foundations  
University of Saskatchewan  
Saskatoon, Saskatchewan S7N 0X1

## **ABSTRACT**

This thesis considers outdoor education as a pedagogical approach which enables students to explore the natural world and learn its value when guided by an adult, be they teacher or community member. In order to provide a full account of this distinctive pedagogy, the thesis critically examines three approaches to outdoor education: a discipline-based approach used in a course on phenology at Capital Normal University in Beijing; a multidisciplinary approach currently utilized at the Outdoor School in Saskatoon; and a place-based approach as exemplified in the CO-SEED project (Community-Based School Environmental Education project) in the United States. The theoretical framework used throughout the thesis is the philosophy of education of Alfred North Whitehead coupled with concepts from his philosophy of organism. It is within this framework that each approach is interpreted and its strengths and weaknesses explained.

Based on consideration of the three examples and on an analysis of the literature concerning outdoor education, I argue that outdoor education is not fully recognized by educators as a way for students to learn to appreciate their connection with nature. The educational value of outdoor education has yet to be acknowledged, and as a result students with little or no regular outdoor experience tend to feel alienated from nature, and are losing any sense of connectedness and rootedness to the places where they live. By way of contrast, outdoor education has the potential to restore students' appreciation of nature.

I propose that a place-based approach to outdoor education is the most inclusive and adequate of the three approaches. At the same time, this approach would benefit from a full understanding and integration of Whitehead's key concepts of the rhythmic cycles of growth, internal relations, wisdom, value, and the art of life. Together they would strengthen place-based education, making it an effective approach to outdoor education.

## ACKNOWLEDGEMENTS

It is a pleasure to thank those who made this thesis possible. First and foremost, I sincerely thank my supervisor, Professor Howard Woodhouse, who has supported me throughout my thesis with his patience and knowledge whilst allowing me the room to work in my own way. I attribute the level of my Master's degree to his encouragement and effort and without him this thesis, too, would not have been completed or written. Through his guidance I have gained new ways of interpreting texts and an appreciation for precision, a complement to my own sense of wonder.

Special thanks to Professor Robert Regnier, who has served as a member of my thesis committee and has asked probing questions throughout, and to Professor Marcia McKenzie, who chaired my thesis proposal oral and provided insightful comments. I would also like to thank Professor Tim Molnar for agreeing to be the external examiner and read the thesis during the holiday season, and Professor Maggie Kovacs for agreeing to chair the thesis oral. Many thanks also to Professors Dianne Miller and Michael Collins for their understanding, advice, and efforts to secure me funding. And thanks to Kim Archibald for providing me with valuable references about the Outdoor School in Saskatoon.

I am grateful to the College of Graduate Studies and the Department of Educational Foundations for providing financial assistance through scholarships that were invaluable to me.

Lastly, I would like to thank my family and friends for supporting and encouraging me to pursue this degree. It is to them I dedicate this work.

## TABLE OF CONTENTS

PERMISSION TO USE .....	i
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	iii
TABLE OF CONTENTS.....	iv
CHAPTER ONE: REALIZING THE POSSIBILITY OF OUTDOOR EDUCATION.....	1
1. Introduction.....	1
2. Structure of the Chapter.....	4
3. Thesis Statement.....	5
4. Statement of the Problem.....	7
5. Significance of the Problem.....	11
6. Philosophical Framework.....	15
7. Methodology.....	21
8. Chapter Summary.....	24
Notes.....	26
CHAPTER TWO: OUTDOOR EDUCATION AT CAPITAL NORMAL UNIVERSITY.....	27
1. Introduction.....	27
2. An Outdoor Component in the Course on Phenology.....	28
3. The Underlying Theory of the Outdoor Component: A Discipline-based Approach to Outdoor Education.....	28
4. Understanding My Own Experience.....	30
5. Whiteheadian Elements in My Outdoor Experience.....	31
6. A Critical Interpretation of My Experience of A Discipline-based Outdoor Education.....	33
7. Conclusion.....	36
CHAPTER THREE: OUTDOOR EDUCATION AT SASKATOON OUTDOOR SCHOOL.....	37
1. Introduction.....	37
2. Saskatoon Outdoor School.....	38
2.1. Location and Background.....	38
2.2. Goals.....	39
2.3. Program.....	39
3. The Underlying Theory of The Saskatoon Outdoor School Program.....	42
4. Whiteheadian Elements in the Outdoor Program.....	49
5. An Interpretation of the Saskatoon Outdoor School.....	54
6. Conclusion.....	60
Notes.....	61

CHAPTER FOUR: PLACE-BASED EDUCATION AND THE IMPORTANCE OF WHITEHEAD’S CONTRIBUTIONS.....	62
1. Introduction.....	62
2. Place-based Education.....	63
3. The CO-SEED Project (Community-Based School Environmental Education Project).....	66
3.1 Mission and Overview.....	66
3.2 The Projects: Examples.....	67
3.3 Goals of CO-SEED Project.....	70
3.4 CO-SEED: A Conclusion.....	72
4. Whitehead’s Important Contributions to Place-Based Education.....	74
4.1 Contemporary accounts of place-based education.....	74
4.2 Whitehead’s critique of mechanistic materialism and the aims of education.....	75
4.3 The rhythm of education.....	76
4.4 Internal Relations in Outdoor Education?.....	78
5. Value, Wisdom, and the Art of Life.....	82
6. Conclusion.....	85
Notes.....	89
REFERENCES.....	90

## Chapter One

### Realizing the Possibility of Outdoor Education

Lead your child out into nature, teach him (sic) on the hilltops and in the valleys. There he will listen better, and the sense of freedom will give him more strength to overcome difficulties. But in these hours of freedom let him be taught by nature rather than by you. Let him fully realize that she is the real teacher and that you, with your art, do nothing more than walk quietly at her side.

—Pestalozzi

#### 1. Introduction

After a long day of backpacking, a group of six of us finished collecting different species of plants for their genes in two locations using maps and a compass. No blackboards, no walls, no bells, no lockers. The Wuling Mountain was our classroom. We were on a two-week field practice in a Botany course to study different species of plants and the characteristics of their environment. One of us suggested that we sit down under the trees to have our dinner and take a break. We just ate a simple meal with steamed buns and cucumbers. Too tired to say a word, we kept quiet and waited for the stars to come out. I can still feel the sense of peace in that moment. I was taken up with smelling a *Spiraea trilobata*, hearing a bird, tasting a *Rubus crataegifolius*, or feeling an ant crawling on my finger. “Wow, look over there, there is a star coming out!” a girl said with excitement. I suddenly realized that a clear night with shining stars still has the magic to inspire us with awe. Could it be because we realize that the universe is our womb, that nature is our home, the source of our being? We are made from her.

I began to be interested in environmental issues in High School. I thought that everyone is responsible to protect Mother Earth the unique place where we live. When we destroy the earth, we are destroying part of ourselves. Later, I went to Capital Normal University in Beijing to study Geographic Science, and experienced a wonderful time in those four years. It was in a course of phenology<sup>1</sup> that I learned about periodic plant and animal life cycle events and how they were influenced by seasonal and inter-annual variations in climate.

I also learned about nature through many science courses such as geology, hydrology, climatology, natural history etc. Having taught in the classroom, I realized both the benefits and limitations of this approach. Some precious experiences in the outdoors, however, made me feel that nature is always different and impressive, alive and fresh. An experience of investigating the flower buds of cherry trees affected me particularly deeply.

This outdoor project was conducted between March and April of 2005, the best time for viewing the development of cherry buds. We began to watch the different species of Japanese Cherries, including *Prunus sargentii* and *Cerasus lannesiana*, when their buds were beginning to expand from the middle of March. The growing process of the cherry buds was impacted by many variables, like the weather, soil condition, air quality, and other species living around the trees. During this period of almost two months, we observed the ongoing changes on a daily basis. Because the park was near our school, we could continue observations on our own time. At lunch or after school, we went to see the cherry trees with friends from other classes. When we noticed the beautiful blooming flowers in the park, we felt as if they had bloomed the previous night, or a few minutes before our visit. Prior to this we seldom had the opportunity to pay close attention to the ongoing changes taking place in the flowers, they tended to be an intellectual abstraction rather than a concrete reality. As Whitehead puts it, “we neglect to

strengthen habits of concrete appreciation of the individual facts in their full interplay of emergent values, and...merely emphasize abstract formulations which ignore this aspect of the interplay of diverse value” (1925/1953, p.198). For Whitehead, value is “inherent to the emergence of reality” (Regnier, 2007, p.12) and is part of the “creative advance of the universe.” This means that the process of becoming embodies the emergence of new values, especially when an entity experiences self-actualization as “the ultimate enjoyment of [its] actual being” (Whitehead, 1926/1996, p.100). My own appreciation of the value of the cherry trees was made possible by feelings towards them, which brought “the subject into a direct relationship with the quality of the object that elicits and enhances them” (Woodhouse, 1995). My feelings towards the cherry trees provided me with “vivid apprehensions of value” (Whitehead, 1929/1957b, p.40) in entities that were achieving their full self-development. When I finally saw the cherry blossoms in full bloom, I experienced a feeling similar to the joy shared with old friends in celebrating their achievements, and a living connection was established between the cherry trees and me. Such an experience “stems from self-enjoyment...namely those concrete and intense feelings that connect to the world beyond” (Woodhouse, 1995). Concrete experience helped my colleagues and me become aware of, and learn to appreciate, the diverse values at play in the process of growth of the cherry blossoms.

At the beginning, some of us were impatient with the minute changes of the little cherry buds. Gradually, we were fascinated by the magical changes taking place, for the buds we saw day-by-day were larger in width and length. I do not know how to describe how happy and surprised we were when we found new buds coming out that were not open the day before. Words could not express the emotional and aesthetic feelings we had. After a while, we even began to give different names to identify the cherry trees we were responsible for investigating,

and preferred to use their nicknames every time we worked with them. As time passed by, we became more familiar with them and cared about their well being.

What we did was not a one-time-only recipe for an experiment, where either you get the right result or you do not. It was an ongoing series of experiences where we cared about the little cherry buds' process of growth. It was evident that we students responded better to the real thing with all of its vivid properties than to an abstraction. Learning shifted from tedious terms and information to the relationships between flower buds and their surroundings; between us and nature. By understanding these relationships, we were no longer learning discrete concepts and descriptions, but we were alive<sup>2</sup>, as were the cherry buds. When the real flowers and buds right in front of us bloomed, we gained emotional and aesthetic experiences worth far more than experimental outcomes. If the slow changes of the cherry buds had been taught in the classroom, the content would probably have been tedious. There is a vast difference between learning about flora in the classroom and being out among the cherry trees where students can experience their beauty, the warmth of the sunlight and the cool breeze. In this context, we students experienced nature on the basis of our feelings, emotions and our intuition.

## **2. Structure of the Chapter**

This chapter began with a description of the joys of my own outdoor learning experiences as a university student in China. This experience was important because it impressed upon me the importance of learning from outdoor experience, which is much more comprehensive than learning from books. I present the thesis statement in the next section. In the fourth section, I state that the problem analyzed in this thesis is that outdoor education is not fully recognized as a

way for students to learn to appreciate their connection with nature. I argue that outdoor education should be more frequently used in sensitizing students, as well as teachers, to appreciate the value of the natural world. In the fifth section, I show that the need for outdoor learning is significant, because students who have little or no regular outdoor experience tend to feel a sense of alienation from nature. This, in turn, conditions them to see nature as something to be controlled and dominated rather than loved and preserved. In the sixth section, I provide a philosophical framework of the thesis as a whole based on Whitehead's educational philosophy, specifically the rhythmic cycles of growth, and his organic philosophy. Both are important for understanding the kind of pedagogical relationship suitable for outdoor education. The seventh section describes the methodology of the thesis, and the last section outlines the chapters.

### **3. Thesis Statement**

In this thesis I propose to establish the following points:

1. Outdoor education, "education in, for, and about the outdoors" (Donaldson & Donaldson, 1958), should be used more frequently in sensitizing students and teachers to the value of the natural world.
2. I review three approaches to outdoor education currently used in schools, universities, and communities; and I interpret each approach in terms of the key concepts of the rhythmic cycles of growth and internal relations proposed by Alfred North Whitehead (1929/1957b; 1929/1957a):
  - i. A discipline-based approach to outdoor education in chapter two. This approach uses a particular discipline like geography or phenology as its theoretical basis. It

is the approach I experienced first hand as an undergraduate at Capital Normal University in Beijing.

ii. A multidisciplinary approach to outdoor education examined in chapter three. This approach involves drawing appropriately from several disciplines to construct new understandings of complex situations in outdoor teaching. The example I use is that of the Outdoor School in Saskatoon.

iii. A place-based approach to outdoor education considered in chapter four. This approach is based on the concept of place (Smith, 2002; Sobel, 1993), and is “inherently multidisciplinary, experiential, and emerges from the particular attributes of a place” (Woodhouse & Knapp, 2000, p.4). It provides students with the knowledge and experience needed “to sustain the cultural and ecological integrity of the places they inhabit” (2000, p.4). The example of place-based education that I use is the CO-SEED (Community-Based School Environmental Education) project in the United States.

3. I advocate a place-based approach to outdoor education as the most inclusive and adequate of the three approaches. This approach is also true to my own experience as someone who appreciates the natural world. I also argue in chapter four that the CO-SEED project, however valuable as an approach to outdoor education, would benefit from a fuller understanding not only of Whitehead’s concepts of the rhythmic cycles of growth and internal relations, but also his notions of wisdom, value, and the art of life. Together, they would strengthen place-based education, making it an effective approach to outdoor education.

#### **4. Statement of the Problem**

Outdoor education is a general term that is frequently applied to programs and activities that take place in the outdoors. While each author has a slightly different emphasis in their approach to outdoor education, I use the following working definition provided by Priest (1986) in this thesis:

Outdoor education is the blending of both adventure and environmental approaches into a program of activities and experiences. Through exposure to the outdoor setting, individuals learn about the relationship with the natural environment, relationship between the various concepts of natural ecosystems, and personal relationships with others and with their inner self (1986, p.13).

Although outdoor education is often synonymous with environmental education<sup>3</sup> and adventure education<sup>4</sup>, it contains elements of both. The emphasis of outdoor learning is placed on the relationships concerning the human and natural worlds<sup>5</sup> (Priest, 1986).

The problem that I address in this thesis is that outdoor education is not fully recognized as a way for students to learn to appreciate their connection with nature. The importance of outdoor education has not been generally acknowledged and identified as having much educational value. The potential of outdoor education is undervalued by many parents, teachers, administrators, policymakers and non-profit organizations (MDNR&MDE, 2009). In most cases, “teachers direct [students’] attention away from their own circumstances and ways of knowing and toward knowledge from other places that has been developed by strangers they most likely will never meet” (Smith, 2002, p.586). Learning is most often considered to be an indoor activity that takes place almost exclusively in school and university classrooms, libraries, laboratories, and

computer labs (Orr, 1994). From an international perspective, outdoor learning opportunities in general are in decline. *A Review of Research on Outdoor Learning* by the National Foundation for Educational Research (NFER) of the UK indicates that “there is growing evidence that opportunities for outdoor learning are in decline and under threat” (Rickinson, et al., 2004). In the U.S., children have fewer opportunities for outdoor activities and regular contact with the natural world than their parents did (Louv, 2005; Clements, 2004). With a dramatic decline in the amount of time students spend outdoors, their lives have become structured and scheduled by parents and teachers, who hold the mistaken belief that learning is “something gained through reading texts, listening to lectures, or viewing videos” (Smith, 2002, p.586).

Admittedly, some outdoor education programs are provided by schools, non-profit organizations and private entrepreneurs today. Since there is no internationally or nationally standardized measure of outdoor education, it falls foul of a number of critiques. For example, in *Adventure in a Bun*, Loynes (1998) argues that outdoor education courses are becoming predictable, packaged, and commodified, like McDonald’s hamburgers. Brown (2002) criticizes the kind of outdoor instructor who acts as “gatekeeper” to what is admitted as knowledge, thereby steering individuals and groups towards their own pre-determined outcomes. Such an instructor is little different from classroom teachers who coerce students to accomplish specific, pre-determined outcomes. There is little or no opportunity for students to develop connection with nature in such kinds of outdoor education programs. I consider the role of teacher in outdoor education in greater detail in the section on the significance of the problem.

There are still some other barriers<sup>6</sup> for outdoor learning to overcome, such as teachers’ lack of confidence and capacity in teaching outdoors. In the U.S., a report proposed by the Minnesota Department of Natural Resources identified teacher qualifications as one of the major constraints

to the teaching of outdoor education. “Many teachers lack the expertise or confidence to teach outdoor education and have limited access to technical assistance or professional development targeted to meet their needs” (MDNR&MDE, 2009, p.11). In China, the majority of environmental education programs which should be taught outdoors are limited to classroom lectures. Teachers lack the experiences and skills for outdoor practice and are “accustomed to teaching through lecture” in the classroom (Wu, 2002, p.24). In Canada, “with an already heavy load to bear (short class periods, large class size, little preparation time, etc.) teachers may encounter old paradigm thinking administrators (i.e., didactic oriented, “back to the basics”) who may throw all sorts of obstacles (e.g. withdrawing funding and other support, requiring additional training and/or certification for outdoor activity leadership, etc.)” (Hanna, 1992, p.3). I consider the barriers of outdoor education in greater detail in the body of the thesis.

On the basis of my own experience, consideration of at least one outdoor education program, and an analysis of the literature concerning outdoor education (Priest, 1986; Orr, 1994; Priest and Gass, 1997; Hutchison, 1998; Smith and Williams, 1999), I argue that outdoor education should be used far more frequently in sensitizing students and teachers to the value of the natural world. The thesis is intended to be provocative in the sense that it may enable readers to learn more about the field of outdoor education. It may also challenge teachers to lead their classes into the vast world outside the walls of schools where lessons can really come alive.

Outdoor education involves guiding students to a greater understanding of their sense of place by allowing them to explore the wonders of their own natural locale, and beyond (Sobel, 1993). Developing a sense of place helps students to cultivate an affinity with the place where they live. By an affinity I mean an attractive force that forges the student and the place into a relationship. In education, one way to engender such affinity is to invite students to participate in outdoor

activities and to experience nature for themselves (Orr, 1994). While this process provides ample opportunity for unstructured learning to take place, there is still room for the instructor to act as a guide.

Outdoor education can take place at all levels of the education system, in a variety of subject matters, and should be complemented by study in a regular classroom. To cite one example, the Saskatoon Outdoor School<sup>7</sup> is designed to promote an understanding of the importance of nature. The program integrates the teaching and learning of such subjects as mathematics and biology into an outdoor learning environment, and is offered to any grade 11 student who is interested. The Outdoor School provides a full five credits in biology, physical education, English, mathematics, and work education. This example shows that any subject can be taught outdoors, including mathematics. The pattern of a snowflake, for example, has one of the most beautiful geometrical forms in the natural world. No longer isolated into compartmentalized subjects, students can freely discover the concrete and local aspects of knowledge through their participation in outdoor activities, and carry their findings back to the classroom in a blend of other learning activities with the guidance of teachers. The Outdoor School opens up the possibility for students to gain an integrated understanding of the natural world based on both their experience and a curriculum in which different subjects are interrelated.

It is important to realize, however, that a universal definition of outdoor education is inappropriate and misleading. Brooks (2004) and Priest and Gass (1997) propose at least four types of outdoor education: recreational, educational, developmental (in terms of personal growth), and therapeutic (in correcting an individual or group problem, such as troubled youth with mental health problems). Sobel (1993) supports outdoor learning by developing the philosophy of place-based education. He uses specific examples of children's outdoor

experience to articulate the importance of their sense of place. Hutchison (1998) and Smith and Williams (1999) discuss the importance of outdoor education in developing cultural and ecological awareness. Hutchison proposes an ecologically sensitive approach to education which includes the use of natural materials, the teaching of handicrafts, the study of place, and engaging children in gardening activities to help them “recover a sense of connectedness to the natural world and to the wider earth community” (1998, p.125). Smith and Williams not only echo the need for outdoor experiences discussed by Hutchinson but they emphasize the value of traditional and localized knowledge in education. They also criticize some of the basic cultural assumptions on which modern industrial civilization has been built, the most important of which is “the modern myth that science and technology provide the most effective means of restoring the environment” (1999, p.161). Later in the thesis I show how my own experience at university and that of the Outdoor School in Saskatoon relate to the different accounts of outdoor education offered by these authors.

## **5. Significance of the problem**

Students who have little or no regular outdoor experience can feel alienated from nature. As a result they lose appreciation of their connectedness and rootedness to the natural world. Smith and Williams (1999) suggest that “one of the great hazards of modern life is that the close connection people once shared with the natural world has been disrupted as an increasing proportion of human activities has been channeled into the built environment” (p.7). Without regular experience with living things, students may develop concepts suggesting that it is possible to live apart from the natural world, and that climate change, air pollution, water waste,

etc. are not their concern since scientists will take care of such problems. Especially “within the context of cities and suburbs it becomes easier to forget nature and to believe that human beings and our economy are able to exist outside the requirements of the ecosystems we have covered with our highways and shopping malls and skyscrapers” (1999, p.7). The result of such an alienation from nature is well described by Emerson as follows:

We are shut up in schools and college recitation rooms for ten or fifteen years, and come out at least with a bellyful of words and do not know a thing. We cannot use our hands, or our legs, or our eyes or our arms. We do not know an edible root in the woods. We cannot tell our course by the stars, nor the hour of the day by the sun (Emerson, cited in Orr, 1994, p.18).

When young people rely on the media and have very little actual contact with living things, they fail to appreciate the beauty of local playgrounds, gardens, and neighborhoods, let alone the rest of the natural world. As they become disconnected from nature, they consider it as something to be controlled and dominated rather than loved and preserved (Orr, 1994, p.133). The world becomes little more than a collection of natural resources to be exploited by the use of modern technologies. As Orr puts it, “it is time...[for] a general rethinking of the process and substance of education at all levels, beginning with the admission that much of what has gone wrong with the world is the result of education that alienates us from life in the name of human domination” (1994, p.17).

Part of the alienation from life to which Orr refers is, I believe, a loss of relationship with oneself. When one leads a life cut off from nature, the self, or subject of experience, tends to shrink and to atrophy. By way of contrast, one can experience a more expansive self, and

overcome alienation from life, by sustaining an ongoing relationship with nature that can translate into renewed connections with others. Later in the thesis, I explain the relationship with oneself in terms of Whitehead's concept of internal relations as a process of self-realization in which the subject becomes increasingly aware of the breadth and depth of their own experience.

Outdoor education has the potential to restore students' appreciation of nature. First, outdoor education provides students with the opportunity to foster caring relationships with nature. My own experience as a student in a project investigating cherry buds and blossoms serves as an example. Second, in outdoor settings students directly experience real living things rather than watching visual images or reading about natural events. The concrete appreciation of a beautiful blooming flower from the stage of bud to blossom was an ongoing series of experiences for me and my classmates. We cared about the flower's growth on the basis of emotional, aesthetic experiences quite different from any learning that took place in the classroom. Third, outdoor education can also emphasize the study of students' own locale and cultivate their sense of rootedness to the place where they live. It can offer unique learning opportunities about the following kinds of question: the history of their town and community; who the inhabitants are, what local resources are available, and what the cultural and natural issues are (Ford, 2002, p.98). In this way, outdoor education helps students to find roots in their own place and identify themselves as a part of the larger earth community. The integration of a place-based approach with outdoor education enables what is too often ignored in many outdoor programs; namely a feeling for one's own community and the wider natural and cultural worlds (Ford, 2002; Sobel, 1993).

It is important to recognize the part that adults – both relatives and teachers – can play in this process. Kals, Schumacher, and Montada suggest that “people who have spent time in nature,

especially with significant others, had emotional feelings about the health of the environment” (1999, p.193). An adult can “take the role of transmitting nature values and enjoyment” (1999, p.198), for students need more than just time outdoors, they also need “the companionship of at least one adult who can share it, rediscovering with [them] the joy, excitement, and mystery of the world we live in” (Carson, 1956, p.45). The role of the adult in such a process is primarily one of sharing – sharing their enthusiasm with children and/or students and encouraging in them the natural curiosity to discover more about the natural world. A grandfather, older brother or sister, parent or teacher can fulfill such a role, encouraging a growing respect for nature (Phenice & Griffore 2003; Wilson 1993). They can share stories about their experiences, and take their young charges for regular camping, climbing, and fishing trips during which they learn together about the need to respect nature.

Whitehead’s account of the role of the teacher as an enthusiastic guide is highly relevant to the process of outdoor education. “The teacher,” he writes, “has a double function. It is for him (sic) to elicit the enthusiasm by resonance from his own personality, and to create the environment of a larger knowledge and a firmer purpose” (1929/1957b, pp.39-40). The teacher should elicit students’ enthusiasm for learning in the form of a felt vibration that connects her body, mind, and spirit (Hu, 2009, pp. 65-66). The teacher should also provide an environment in which each student’s imagination is free to explore new possibilities by relating their experience to underlying principles that provide the basis for broader, deeper knowledge. Thus, Whitehead’s educational philosophy provides a framework for understanding the kind of pedagogical relationship suitable for outdoor education. In the following section I examine this framework in greater detail.

## 6. Philosophical Framework

I use Alfred North Whitehead's educational philosophy, especially the rhythmic cycles of growth, as the theoretical basis of the thesis because it strengthens the potentiality of the pedagogical relationship suitable for outdoor education. At times I also draw upon his philosophy of organism in order to expand my discussion of such concepts as the interconnectedness of nature.

The rhythmic cycles of growth at the core of Whitehead's educational philosophy begin with the cycle of romance, "the joy of discovery" (1929/1957b, p.2), in which students are free to explore the world without constraints. In the cycle of romance, learning should be enjoyable, concrete and relevant to life, and the rhythmic emphasis is on freedom, which "allow[s] the child to see for itself and to act for itself" (1929/1957b, p.33). Outdoor education, I argue, can provide students in this cycle with the opportunity to experience the places where they live first hand. Whitehead also believes that "[f]irst hand knowledge is the ultimate basis of intellectual life," whereas "book-learning conveys second-hand information, and as such can never rise to the importance of immediate practice." (1929/1957b, p.51) Concrete, lived experience is the basis of education for Whitehead, since all knowledge has its roots in life and practice. First hand experience in which students apprehend the world directly can set a ferment stirring in their minds, which strengthens their innate capacity to learn. In outdoor education, students freely explore local parks, gardens, wilderness areas or other places they find interesting, enabling their interests to grow. An emphasis on students' own experience and a climate of unstructured freedom is capable of luring them to discover connections among natural species. When captivated by an interest in the various species in an ecosystem, like the frogs in a pond, students are likely to want to learn more. Why, for example, do these frogs make their home in this

particular area? What is the difference between the frogs in this pond and those in other ponds? Teachers who encourage their students to pursue independent exploration of nature can enliven the stage of romance by strengthening students' appreciation of their connectedness with nature. Only when they have fully explored romance does the learner pass through the subsequent cycles of precision and generalization.

The process of mental growth is not linear, but cyclical, so that each stage connects with the others. The overlapping cycle of precision "represents an addition to knowledge" in which "width of relationship is subordinated to exactness of formulation" (1929/1957b, p.18). Exactness refers to a process of structured learning which enables greater understanding of each subject matter. Thus, new knowledge is gained through analysis and systematization. Precision allows students to formulate the grammar, rules, and structure that make sense of what they experienced when they were outdoors in the cycle of romance. Its distinctive rhythm is discipline, or more precisely, self-discipline. The rich, romantic, concrete nature of outdoor experience serves as the background for precision, which can now be integrated with study in a classroom as long as it recognizes the rhythm of education. For example, teachers can ask students "what can be discovered in the pond?" a question which readily links the natural species in the pond with traditional subject matters, such as biology, mathematics, social studies, etc. In a biology class, disciplined study of some of the animals that live in the water such as fish and crayfish, others that live above the water such as ducks and insects, and still others that live in the area surrounding the pond such as earthworms, can give students vivid examples of the populations, habitats and even the food chain characterizing animals living in the pond.

The cycle of precision is essential to education, since without an understanding of the "grammar" of any discipline like biology, students cannot reach the next overlapping cycle of

generalization to fulfill their entire cycle of growth. Since “the only discipline, important for its own sake, is self-discipline” (1929/1957b, p.35), students’ own desire to learn is the source of the rhythm governing this cycle and strengthens their natural impulse towards self-development. Imposed discipline can never foster self-discipline, which must be balanced by “by a wide use of freedom” (1929/1957b, p. 35).

Generalization is the third overlapping cycle of growth in which students come to understand the connections between abstract principles and concrete experiences. The distinctive rhythm of generalization is a return to freedom. “It is a return to romanticism with added advantage of classified ideas and relevant technique” (1929/1957b, p.19) acquired from the cycle of precision. The essence of this stage is the transition from passive acceptance of training to the utilization of knowledge and its application to the concrete experience of students’ lives. The particular details of grammar, rules and structure give way to “an unconscious common sense [of] how to apply principles to immediate circumstances” founded on “mental habits” (1929/1957b, p.26) that have become fully integrated in students’ minds. Generalization involves a synthesis of freedom and discipline: the self-discipline acquired in the cycle of precision and an expansive freedom which flows from a combination of that discipline and a return to romanticism. Students can now begin to make knowledge their own, applying abstract ideas to new experiences and problems. The process of generalization, as Evans explains, “may be as simple as a young child exploring new combinations of number relations, or as complex as a team of educators constructing a new curriculum in response to an emerging societal problem” (1998, p.87). Once the principles and grammar learned in the cycle of precision have been internalized and become mental habits, they enable students to rise above such details and understand the particular events encountered in their experiences as instances of these principles.

Learning, then, is a rhythmic alternation between freedom and discipline, between the free discovery of enjoyable experience and the structure of “grammar.” The entire process enables students to develop self-discipline, progress in their growth, and achieve full and free self-development. As Whitehead puts it, “Education is the guidance of the individual towards a comprehension of the art of life; and by the art of life I mean the most complete achievement of varied activity expressing the potentialities of that living creature in the face of its actual environment” (1929/1957b, p.39). The goal of education is to enable the full realization of students’ own potentiality in their cultural and ecological context. Education is a natural process in which each student “grows by its own impulse towards self-development” (1929/1957b, p.39). Students have a natural bent toward what they want to learn based on their own interests. Their innate interest and desire for learning give them the motivation and energy to carry through the cycles of learning, since “the principle of progress is from within: the discipline is self-discipline” (1929/1957b, p.39). Thus, education should be viewed as a process for which students are naturally ready, not one which must be imposed upon them out of social necessity. Furthermore, each student is a unique individual with a different background, capability and experience. The role of the teacher is to recognize the unique capacities of each student as they forge a path towards full self-development. This process may be “natural,” but it involves considerable effort on the part of both partners in the learning process to enable the individual student to realize her/his full potential.

The rhythm of freedom-(self-)discipline -freedom punctuates the cycles of growth, enhancing their overlapping vigor and strengthening their overall purpose. Freedom and discipline are not antithetical concepts for Whitehead, but relative terms, which complement each other in the process of learning, and “should be so adjusted in the child’s life that they correspond to a

natural sway, to and fro, of the developing personality” (1929/1957b, pp.30-31). The achievement of a healthy balance between freedom and discipline is an essential aim of education for Whitehead, and it is the alternating emphasis of freedom and discipline, which constitutes the rhythm of growth (1929/1957b, pp.28, 31, 35). The cycle and the rhythm are reiterative and in an evolutionary sense lead us on to an ever greater understanding of our relationship with the world.

Outdoor education helps students in this process of growth by offering them various opportunities to apply their knowledge to real life situations. It can play a significant role in each cycle of growth: in romance, students are lured by the natural world to discover its wonders; in precision, they learn to systematically order their findings on the basis of self-discipline; in generalization, they transfer their knowledge into an understanding of ecology and strengthen a sense of awe and wonder towards nature. In the process, students learn that a tree is not only a tree, but a union of organisms, a nest of birds, a cave of ants and a filter for fresh air. Even an analysis of the arrangement of leaves on a stem can help students discover the Fibonacci numbers in nature<sup>8</sup>.

If the tree is destroyed, even though it may be one of hundreds in an orchard, some of its pollinators, leaf-eaters, and wood-bores will disappear along with it. The result will be the elimination of parasites and key predators, and perhaps a species of bat or bird that depends on its fruit (Wilson, 1984, p.8). Students who experience the apple tree in outdoor learning are likely to gain an understanding of the fragility of the natural world, the interconnectedness of nature and the relatedness of all subject matters. The possibilities for learning about these relationships are endless.

Whitehead's account of internal relations also helps students to understand the close relationship between the human and natural worlds. In the philosophy of organism, he explains the concept of interdependence of all entities by means of the distinction between external and internal relations (1925/1953, p.123). Two entities that are externally related can come into contact with each other without changing their character. A ball bouncing against a wall, for example, touches its surface with a certain force, but the properties of the two entities remain unchanged. In contrast, internal relations are capable of transforming the entities involved in the relationship. For example, coral reefs are created by coral organisms and various types of algae living inside them. The algae provide up to ninety percent of a coral's energy requirements. In return, the coral sustains the algae with protection, shelter, nutrients and a constant supply of carbon dioxide required for photosynthesis. In this internal relationship, if any changes occur to either the coral or the algae, both partners are transformed. Whitehead himself writes about the internal relations among the various species sustaining the Brazilian rainforest (1925/1953, p. 206). I return to an analysis of this passage in Chapter Four.

Examples of human interconnectedness with nature can be seen everywhere in daily life. Eating an apple, for example, involves a process of digesting the apple into our body. The apple comes from a tree that took in the sun, soil, rain, and air. After we digest the apple, our bodies use its nutrients. The waste becomes food for tiny microbes in sewer plants and marshes. The apple core we compost also becomes food for microbes, whose waste re-enters the cycle of plant growth. When we breathe, we take in oxygen that microbes and plants have produced. When we breathe out carbon dioxide, plants and microbes use it to grow and create more oxygen capable of developing apples for people to eat (Phenice & Griffore, 2003). This entire process suggests that internal relationships are fundamental. We cannot survive without the nutrients and fresh air

provided by the natural world; and the apple tree needs the microbes and carbon dioxide that we produce to remain active in the cycle of growth. Human beings and the natural world are interdependent. However, if students never have the opportunity to experience activities like planting and harvesting, they will be unaware that nature is the source of their food. Such awareness and appreciation can be developed by an outdoor education that provides students the opportunity for directly experiencing the natural world.

## **7. Methodology**

In this thesis I employ the methodology of Whitehead's speculative philosophy (also known as process philosophy, or the philosophy of organism). When describing this approach, Whitehead states that there are "four strong impressions" at its base and forefront:

First, that the movement of historical and philosophical criticism of detached questions, which on the whole has dominated the last two centuries, has done its work, and requires to be supplemented by a more sustained effort of constructive thought. Secondly, that the true method of philosophical construction is to frame a scheme of ideas, the best that one can, and unflinchingly to explore the interpretation of experience in terms of that scheme. Thirdly, that all constructive thought, on the various special topics of scientific interest, is dominated by some such scheme, unacknowledged, but no less influential in guiding the imagination. The importance of philosophy lies in its sustained effort to make such schemes explicit, and thereby capable of criticism and improvement (Whitehead, 1929/1957a, p. ix).

Rather than remaining at the level of “detached questions” about the nature of knowledge or human freedom, Whitehead’s speculative philosophy makes “a sustained effort” in constructing “a system of general ideas” that are “applicable and adequate” to our experience. He claims that such a system reflects concrete or lived experience to the extent that no element is incapable of interpretation by its methods (1929/1957a, p.5).

Whitehead’s “constructive thought” involves a methodology capable of extending the boundaries of previous philosophical systems and describing the facts of experience in a comprehensive manner. Since “everything of which we are conscious, as enjoyed, perceived, willed, or thought, shall have the character of a particular instance of the general scheme” (1929/1957a, p.5), speculative philosophy makes possible a deeper understanding of our experience. Whitehead uses the example of the flight of an airplane to illustrate this process (1929/1957a, p.7). The ground from which the airplane takes off is our immediate experience and observation of life. The flight amounts to the metaphysical constructs, or “imaginative generalizations,” which we use to further our understanding (1929/1957a, p.7). And the landing of the airplane comprises renewed observation coupled with the rational interpretation of experience made possible by logic (1929/1957a, pp.7-8). The significance of the imaginative flight of the airplane cannot be overemphasized, and should be “tested by the applicability of its findings beyond the restricted locus from which it originated,” making further knowledge possible and extending our interest in the adventures of ideas in any field (1929/1957a, p.8). This process of experiential, imaginative, and rational thought enables speculative philosophy to make apparent the assumptions of any discipline, “and thereby [make them] capable of criticism and improvement” (1929/1957a, p.ix).

In terms of my analysis of outdoor education, Whitehead's theory of the rhythmic cycles of growth and the concept of internal relations in his process philosophy play a key role. The rhythmic cycles of growth emphasize learning as a process of overlapping cycles punctuated by an alternating rhythm of freedom-(self-)discipline-freedom (1929/1957b, pp.28,38). The concept of internal relations makes clear the interdependency of all entities, both human and non-human. Both these concepts enable me to critically interpret my own experience of a discipline-based approach to outdoor education as well as a multidisciplinary approach to outdoor education as exemplified at the Saskatoon Outdoor School program. In this way, I am able to make use of the experiential, imaginative, and rational methodology of speculative philosophy to understand my own experience and expose the assumptions of the two theories of outdoor education just mentioned. On the basis of the same methodology I consider the imaginative possibilities of a place-based approach to outdoor education for enabling students to appreciate their internal relationship with nature. Whitehead's philosophy provides a constructive basis for imagining a place-based approach to outdoor education as a viable alternative to the other two approaches. His philosophy is important in providing a general scheme of ideas on the basis of which to interpret my experience, and make my own ideas explicit so as to criticize and improve them. To this extent, the thesis is based upon a framework of constructive thought capable of interpreting my experience of outdoor education in an imaginative way for the purpose of continual refinement and criticism of educational practice.

In sum, the methodology of speculative philosophy which I employ makes clear the following three perspectives:

1. A reflection and critique of my own experience of a discipline-based approach in which I use Whitehead's philosophical framework to show the inadequacies of a discipline-based approach to outdoor education.
2. An examination of a multidisciplinary approach based on an analysis of the Saskatoon Outdoor School program, that also uses Whitehead's philosophy to show the strengths and weaknesses of this multidisciplinary approach to outdoor education.
3. The advocacy of an alternative possibility, namely a place-based approach to outdoor education, which is both true to my own experience and consistent with Whitehead's philosophical framework, as the most inclusive and adequate of the three approaches.

I am aware that using Whitehead may limit my understanding of outdoor education. However, I utilize other sources, including Dewey (1934/2005, 1938/1998, 1976), Sobel (1993, 1996, 2004), Orr (1992, 1994), and O'Sullivan (1999) to interpret the three approaches to outdoor education that I consider. Moreover, it is worth pointing out that Whitehead himself is critical of any philosophy, including his own, lest it become close-minded, dogmatic, and exclusive of the full range of human experience (1933/1961, pp.222-223).

## **8. Chapter Summary**

In this chapter I have proposed the importance of outdoor education as an engaging, effective and enjoyable form of learning by reflecting upon my own outdoor experiences at university. The problem is that outdoor education has not been fully recognized as a way for students to

learn to appreciate their connection with nature. To solve this problem, I analyze three approaches to outdoor education in the following chapters.

Chapter two analyzes the discipline-based approach to outdoor education based on my own outdoor experiences at university. I argue that my experience of discovering variables, posing questions and seeking answers through direct outdoor investigation was a process of romance about the learning subject, which in turn became the background for the following cycle of precision taking place when we came back to the classroom. Besides showing the benefits of this approach, I critically interpret its limitations in light of Whitehead's philosophy and other outdoor education approaches. Chapter three introduces the reader to the Saskatoon Outdoor School as an example of the multidisciplinary approach used by some present day outdoor educators. By integrating outdoor opportunities with the traditional curriculum, this approach draws students' attention to environmental issues in the cycle of romance, and widens the possibilities for discovering connections among subject areas, and their relationship with environmental issues.

Chapter four proposes a place-based approach to outdoor education, which is constructed on two principles: the students' rhythmic cycle of growth and the particular cultural and natural contexts necessary for their growth. The goal is to help students gain a sense of rootedness and belonging to their community and the wider natural and cultural worlds that is too often ignored in many outdoor programs. I argue that Whitehead's account of interconnectedness with nature, and more particularly his concept of internal relations, provides the theoretical basis for a place-based approach to outdoor education.

## Notes

1. Phenology involves the systematic study of the following kinds of phenomena: the emergence of leaves and flowers; the first flight of butterflies and the first appearance of migratory birds; when leaf coloring occurs in deciduous trees and the leaves fall; the dates of egg-laying among birds and amphibians; and the timing of the developmental cycles of temperate-zone honey bee colonies. In the scientific literature on ecology, the term Phenology is used more generally to indicate the time frame for any seasonal biological phenomena (Haggerty & Mazer, 2008).
2. Whitehead insists that “the students are alive,” (Whitehead, 1929/1957b, p.v), and that ideas can stay alive in the following manner: “[b]y utilizing an idea, I mean relating it to that stream, compounded of sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought, which forms our life” (1929/1957b, p.3).
3. An internationally recognized interpretation of environmental education is provided by the International Union for the Conservation of Nature and Natural Resources UNESCO (IUCN):

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behavior about issues concerning environmental quality (IUCN, 1970).
4. Adventure education, involving outdoor pursuits, has “been successful in bringing about positive changes in individuals through overcoming wilderness challenges” (Priest, 1986, p.14), such as rope courses, white water rafting, mountaineering, rock climbing, etc.
5. Priest (1986) uses the term “natural resources”, but I think that using “natural worlds” is more suitable.
6. Other barriers to outdoor education include shortages of time, funds and resources; teachers’ lack of confidence and capacity in teaching outdoors; fear and concerns about health and safety; and curriculum requirements (Rickinson et al., 2004).
7. Introductions to the Saskatoon Outdoor School Program are available at:

<http://schools.spsd.sk.ca/outdoorschool/>
8. The leaves of an apple tree are so arranged that the higher ones do not hide those below. If we go around the tree from the top leaf to the one directly below it in a clockwise ( $t_1$ ) or anti-clockwise ( $t_2$ ) direction, the number of leaves ( $n$ ) that we pass between the top leaf and the one directly below it are three consecutive Fibonacci numbers ( $t_1, t_2, n$ ).

## Chapter Two

### Outdoor Education at Capital Normal University

Though outdoor investigations won't work with every student every time, our confidence is growing that if we take the kids outside, a lesson will present itself.

—Krapfel

#### 1. Introduction

In this chapter, I review my own outdoor experience in the course on phenology at Capital Normal University in Beijing. I explore the underlying theory my professor was utilizing in the outdoor component of the course, which shows that it was based on a discipline-based approach but that there was no explicit theory of outdoor education employed. I then analyze the relationship between the underlying theory and my own experience, and the extent to which the practical application of Whitehead's conceptions of romance and internal relations were apparent in this experience. Third, I critically interpret the role of the theory used by the professor in light of Whitehead's philosophy and the other theories of outdoor education considered in chapter one.

The primary purpose of the thesis is to advocate a place-based outdoor education consistent with Whitehead's philosophy by showing the limitations of other approaches. The discipline-based outdoor education that I experienced in the course on phenology is one such approach.

## **2. An Outdoor Component in the Course on Phenology**

My own outdoor experience investigating cherry buds in the course on phenology at university provided opportunities to directly experience the cherry trees on a daily basis. In such an outdoor environment, concrete experience of the natural species and related phenomena replaced the ‘abstract formulations’ of the classroom, making the subject matter come alive. We learned how the weather, soil conditions, and other variables influenced the growth of cherry buds, and came to understand how the interconnections among these variables provided the overall context for the growth of the cherry trees. Most importantly, when the cherry trees experienced their full bloom as “the ultimate enjoyment of [their] actual being” (Whitehead, 1926/1996, p.100), this process of growth embodied the emergence of vivid values, which enriched their own lives as well as the lives of others who experienced it as a process of becoming, or self-actualization. My appreciation of these values was made possible by my feelings toward the cherry trees, which bonded us “into a direct relationship” (Woodhouse, 1995), a living connection between me and the small habitat where the trees and many other species were located.

## **3. The Underlying Theory of the Outdoor Component: A Discipline-based Approach to Outdoor Education**

My professor did not identify the underlying theory he was utilizing in teaching the outdoor component of the course on phenology, but some essential features were apparent in this outdoor component. First of all, the teaching material focused on the subject, or discipline, of phenology, which included a basic introduction to climatology and biogeography, with a particular emphasis on the time frame for the seasonal biological phenomena. Investigating the emergence of cherry

blossoms was designed to help us understand how the periodic life cycles of cherry trees were influenced by seasonal variations in climate.

Second, the method adopted in this outdoor component was primarily scientific. It involved the systematic collection of data for the purposes of scientific understanding. There was a designated investigative question to be answered at the end of this process – what was the probable date on which cherry blossoms at Beijing Yuyuantan Park would reach their peak in 2005? This question was important because it was the basis of the inquiry on which all the observation, measurement, and discussion were built. The goal of this outdoor component of the course on phenology was to contribute to scientific knowledge by observing and describing the process of cherry buds' growth, noting differences in habitats, and identifying and forecasting environmental trends.

Third, the primary role of the professor was that of instructor. Though we tried to explore different variables by ourselves, it was hard to make a truly original discovery. Most of the time, the professor decided from his own viewpoint and experience what was important in a habitat, what we should be studying, and how we should investigate it. As a result, there was little room for dialogue between us and the professor. I shall consider the role of teacher in this outdoor experience later in this chapter.

In the outdoor component of the course on phenology, the content, ways of teaching, and the role of the teacher all suggest that the underlying theory that my professor utilized was a discipline-based approach to outdoor education. To clarify the term further, I mean an approach that focuses on a particular scientific discipline or subject area, such as phenology or geography. Such a discipline-based approach, based on the belief in the importance of the principles of the

subject matter in structuring student learning, is one that prevails in many educational systems. The main principle of phenology, for example, is the study of periodic plant and animal life cycle events and how these are influenced by seasonal and inter-annual variations in climate. Its primary goal is to catalogue the dates of the first occurrence of biological events in their annual cycle. I shall critically interpret the limitations of the discipline-based approach later in this chapter.

#### **4. Understanding My Own Experience**

Exploring the underlying theory of the outdoor component of the course on phenology has helped me to understand my experience better. First, my professor utilized a discipline-based approach to outdoor education, which was driven by subject-specific purposes of developing a fundamental understanding of phenology. Thus, the course content was pre-designed to serve specific academic ends and the investigation was an integral part of the course requirements. We had a pre-determined field plan according to which both investigation and measurement were carried out; and since the emphasis was on intellectual learning, the cultivation of emotional and aesthetic appreciation were ‘by-products’ of the course. Some students, like me, felt the beauty of the cherry trees and developed connections with their habitat. But many did not. Second, the theory was that frequently employed in science classes, and was based on the scientific method, namely the understanding that all natural phenomena can be observed, measured, predicted, and controlled (Orr, 1994; Hutchison, 1998). As a result, my classmates and I always carried rulers, thermometers, magnifying glasses, tree-measuring sticks, collecting jars and notebooks with us for recording our observations. Third, since the primary role of the teacher was as an instructor, most of the decision-making was made by the professor, who taught

us how to measure this and how to record that. As a result, we were usually passive recipients of the professor's knowledge and thinking. The discipline-based approach to outdoor education determined the principles to be learned at the core of the course, it afforded a pre-eminent position to the scientific method as compared to aesthetic and emotional ways of learning, and ensured a hierarchy between the teacher and students.

## **5. Whiteheadian Elements in My Outdoor Experience**

Whitehead's conceptions of romance and internal relations were both present in my experience of outdoor education. With regard to romance, during the time in outdoors, I noticed that weather conditions highly impacted the growth of cherry buds, but I did not know how the temperature, the humidity, the wind speed etc. affected the growing process or to what extent. As Whitehead puts it, the subject-matter "holds within itself unexplored connections with possibilities half-disclosed by glimpses and half-concealed by the wealth of material" (1929/1957b, p.17). While experiencing the various colors of flowers, the different shapes of branches and the smell of the soil, which are diverse, unique and not man-made, our interests grew through active interaction with live surroundings. We gave the *Prunus sargentii* a nickname – "little pink" - because the color of the flower was pink when it bloomed. Interestingly, this nickname became an important tip when we went back to the classroom learning how to identify the kinds of cherry blossoms.

In the outdoor component of the course, we observed various relations in the small ecosystem where the cherry trees and many other species lived: the date when the cherry trees bloomed was affected by the weather conditions; the cherry trees liked sunlight, and warm, moist conditions,

so that those situated in shade were slower in their growth patterns; and the trees were especially vulnerable to smoke, dust and polluted air. Like all plants, the cherry trees had their insects and disease associates, of which the most common were scale insects; overpopulation of insects would result in damage to the bark and scale; and picking up the cherry blossoms or branches would also threaten the trees. From these hands on experiences, we learned to appreciate that nature is not only made up of specific species but of ecosystems, which are the “basic units of nature on the face of the earth” (Tansley, cited in Rowe, 1990, p.45). Species and organisms cannot be separated from their environment with which they form one particular ecosystem. Thus, from an ecological point of view, it is species-enveloping ecosystems – forests, grasslands, lakes, and farmlands – which sustain different forms of life while also contributing to a more comprehensive understanding of the integrity and diversity of nature (1990, pp.45-48).

Whitehead’s conception of internal relations is particularly relevant to outdoor education. After having studied Whitehead’s philosophy, I have come to recognize the internal nature of relations among such species as cherry trees and their ecosystem (Whitehead, 1925/1953, p.123, 206). Around the roots of a cherry tree beneficial fungi developed and helped the tree absorb important nutrients. The fungi, in turn, fed off the tree, but not in a way that was bad for the tree itself. The two were mutually supportive, finding their full expression in terms of their internal relationship with one another. Similarly, the mosses and lichens that lived on the trunk and branches of a tree absorbed water and nutrients from the air, using the tree as a platform on which to live. The mosses and lichen also provided food for other insects and, in turn, food for birds and small mammals. The ecosystem supporting a cherry tree is composed of myriad such internal relations between the tree and the various species that live in, on and around it. Take away the habitat and some species vanish; take away the species and the habitat changes. Some

trees are located in parks, others on mountains, others in forests. The cherry trees in China, Japan, Canada or Britain are all different, at least partially because of differences in their various ecosystems.

## **6. A Critical Interpretation of My Experience of A Discipline-based Outdoor Education**

Despite the fact that I found the outdoor experience at university valuable, this learning was not without its faults. There were both strengths and weaknesses to a discipline-based approach to outdoor education. This approach allowed students to focus on a particular discipline in depth and contributed to a solid understanding of the subject matter, especially how seasonal changes and other factors influence the growth of cherry blossoms. While some pre-determined content and expected outcomes were probably necessary in delivering the course, these worked only if the students were actively involved in the cycle of romance sparking their natural craving to learn and to move into the next overlapping cycle of precision. The freedom characterizing the cycle of romance was restricted by an overemphasis on subject matter. The professor did not encourage the cycle of romance as a background of disciplined learning; and we were left to figure this out for ourselves.

The outdoor component of the course did help students to develop a basic understanding of the internal relations between one species and another or between different species and their physical habitats through experiencing the complexities of the particular ecosystem and its subsystems. But this kind of outdoor education often missed the opportunity for developing comprehensive understandings that cross disciplinary boundaries, connecting learning to real life issues, and most importantly it overlooked the essential relationship between students and nature. Any understanding of the relations between particular species and local environmental and social

issues were rarely explored (Smith & Williams, 1999). For example, whether climate change had impacted the life cycle of the cherry trees? Were the surrounding air and soil conditions influenced by the trees? Where did the trees' seeds come from? And why were they planted in Yuyuantan Park rather than elsewhere? These kinds of questions were rarely discussed.

Most importantly, the opportunity for students to make deep connections with nature was overlooked. As Whitehead puts it, “[w]hen you understand all about the sun and all about the atmosphere and all about the rotation of the earth, you may still miss the radiance of the sunset. There is no substitute for the direct perception of the concrete achievement of a thing in its actuality” (1925/1953, p.199). In my experience, when I enjoyed the beauty of the cherry blossoms in the process of self-actualization, I came to fully appreciate that beauty as a process which connected to my own growth as a learner and human being (Whitehead, 1929/1957a, pp.32-33; Woodhouse, 1995). Although the course emphasized the scientific method - the seasonal variations in climate, and the impact of climate on the emergence of cherry blossoms – there were some students, like me, who experienced the beauty of the cherry trees and developed deeper connections with both them and their habitat. But many did not.

Furthermore, the discipline-based approach that my professor was utilizing, with its grading, testing, standardized teaching plans, and lacks of communication between teachers and students, reflects a worldview that is mechanistic and reductionist. It is based on the belief that all aspects of complex phenomena can be understood by reducing them to their constituent parts (Hutchison, 1998; Capra, 1983). There is growing support for the argument that the mechanistic worldview is an inadequate basis for understanding the complexity of the world in which we live, since it fails to take into account the interconnectedness between entities (Whitehead, 1925/1953; Hutchison, 1998). Others argue that this worldview is the cause of many of our

social and environmental problems (Orr, 1994; Capra, 1983). For example, Capra (1983) argues that “we have high inflation and unemployment, we have an energy crisis, a crisis in health care, pollution and other environmental disasters, a rising wave of violence and crime, and so on...these are all different facets of one and the same crisis, [namely,] a crisis of perception” (p.1). He views all these different crises as interrelated aspects of our experience. Whitehead believes that, in general, schools and universities produce “minds in a groove”, by which he means that “to be mentally in a groove is to live in contemplating a given set of abstractions” (1925/1953, p.197) without recognizing their limitations or being able to move beyond them. Similarly, Orr argues that “we educate lots of in-the-box thinkers who perform within their various specialties” without the ability “to transcend those boxes or to fit with other boxes” (1994, p.95). Both Orr’s metaphor of “knowledge organized in boxes” (1994, p.95) and Whitehead’s critique of “minds in a groove” (1925/1953, p.197) enable us to understand the limitations of a discipline-based approach to outdoor education.

There was also a lack of dialogue in the process of learning in the discipline-based approach to phenology which I experienced (Freire, 2000). Most of the time, the professor was telling students what, and how, to think about a subject. Learning mainly occurred through a one-way dissemination of knowledge from the professor to the students, thereby steering students towards pre-determined outcomes. The professor did not bring any specific environmental issue into class, nor did he show any theory or approach he was using in teaching outdoors. The following reasons may account for this. First, the professor was pre-occupied with the importance of knowledge in the discipline of phenology, and was not aware that learning opportunities can be created through outdoor experience that encourage environmental concerns among students. Second, he possessed considerable environmental awareness, and was pressed by an

overburdened timetable, thereby having no time and energy for preparing and delivering any other environmental-related materials. Third, the professor may have wanted to include discussions of environmental and social issues in his class, but he lacked the training and confidence to do so (Wu, 2002; MDNR&MDE, 2009). He was afraid of losing control when teaching in the outdoors, and preferred to “lecture” in the same way as he did in the classroom.

In sum, the professor of phenology did not employ an explicit theory of outdoor environmental education to buttress his teaching. The focus of the course was an understanding of the subject matter and the acquisition of scientific concepts and technical skills. The goal was more investigative than recreational or spurred on by adventure, since the activities of observation, measurement, data collection, and the application of theories were paramount. There was also very little fostering of the connections between students and nature, particularly the aesthetic value of tending the cherry trees. As a result, many students missed out on the potential for experiencing a form of outdoor education capable of providing them with close links with the natural world.

## **7. Conclusion**

In this chapter, I have used my experience at university as an example of one kind of outdoor education. In the following chapter, I utilize the Saskatoon Outdoor School program as example of a different kind of outdoor education that adopts a multi-disciplinary approach to promote personal development and environmental concerns.

## Chapter Three

### Outdoor Education at Saskatoon Outdoor School

Many schools offer a fare of copy sheets, note taking, and reading for plot and character in a mode borrowed from industry that offers shades of reality but not in its vivid presence... [Students] can learn for example that: one tree plus one tree is two trees in math, to calculate the length of a tree's shadow in geometry, the species, genus, phylum, and order of a tree in biology, and the tree's chemical processes in chemistry. None of this learning offers the experience of a tree, of forests, of living with trees, of forest life, of living in forest, and of being one with forests.

—Regnier

#### 1. Introduction

While many students, teachers and parents remain locked in an ideology where learning happens only within the walls of the school, Kim Archibald, the teacher of the Saskatoon Outdoor School, built “a school without walls”<sup>1</sup>. In this chapter, I tell the story of the Outdoor School program in Saskatoon (ODS), including its background, program and goals. I then explore the underlying theory of the program based on information gathered through observations, informal discussions, print materials, interpretations, and an analysis of the educational philosophy of John Dewey and selected others. In many places I offered some elaboration of theoretical issues to supplement the program's largely underdeveloped theoretical framework. Finally, I analyze the extent to which the practical application of Whitehead's conception of romance and internal relations is apparent in the program, and I interpret the role of the program's approach to outdoor education in light of Whitehead's philosophy.

## **2. Saskatoon Outdoor School**

### **2.1 Location and Background**

The idea for an Outdoor School program in Saskatoon originated in early 1992. In 1995/96, Kim Archibald investigated Outdoor School programs in Vernon, B.C., and New York, and the resulting research<sup>2</sup> provided the background necessary to pilot an outdoor program at Marion Graham Collegiate. After approximately four years of preparation in December 1996, the school board granted a “Trial Version” of an outdoor school program at Marion Graham Collegiate for the 1997 -1998 school year (Archibald, 1997, p.62). A full-time program began the following year and has been in operation for thirteen years.

Saskatoon Outdoor School is based at Marion Graham Collegiate in Saskatoon, Saskatchewan. Marion Graham Collegiate was selected as a base for the pilot program for the following reasons. First, the school had offered a very successful extra-curricular canoeing program called Katepewisipiy for twelve years. The canoe club had developed a strong following and annually attracted over one hundred students for a canoe trip each spring, and during this period had accumulated a strong inventory of canoes, trailers, and equipment. Second, the location of the school provided a strong connection to rural, agricultural, historical, and wilderness areas located north of the city. Being situated three blocks from Meewasin Park<sup>3</sup>, a park area designated and cared for by the city of Saskatoon, provides a natural Cottonwood forest ecosystem situated along the South Saskatchewan River. Students can also travel via the Meewasin Trail by walking, jogging, roller-blading, cross-country skiing, or cycling. Third, the expertise and flexibility of the staff at Marion Graham Collegiate were also a strong consideration during the selection process.

## **2.2 Goals**

The goals of the Saskatoon Outdoor School program are to provide students with the following opportunities (1997, p.67):

- An outdoor learning environment which fosters the development of individual responsibility and independence.
- Opportunities for the development of enhanced self esteem through the experiences of adventure based education.
- Knowledge and skill to safely camp and survive in the outdoors, and to utilize a variety of outdoor pursuits in which to access nature.
- Experiences that will foster life-long attitudes to healthy and active lifestyles and recreation.
- Opportunities to better understand the ecological richness of Saskatchewan and to develop a deep appreciation and responsibility for the natural environment.
- Experiences that provide a sense of community, cooperation, and a responsibility to one another.
- Holistic educational opportunities that emphasize the inter-connectedness of knowledge and emphasize a dedication to life-long learning.

## **2.3 Program**

Since 1997, Saskatoon Outdoor School has offered a unique outdoor program available to students at the grade eleven level. Currently, one male and one female teacher are assigned to lead a semester long experience for 24 grade eleven students (48 per year) who are selected from applicants from Saskatoon public high schools. Kim Archibald, as one of the founders and

teachers of the School, has provided the educational leadership, vision, outdoor expertise and teaching to the program for thirteen years. These qualities are evident in the most recent edition of the Out-of-School Education Concept Plan (Archibald, 2001). The program integrates grade-eleven biology and physical education and incorporates the strengths of adventure education in the first two semesters. Adventure education involves such outdoor pursuits as canoeing, backpacking, skiing, and winter camping. Currently the program integrates the following five credits: Biology 20, Geography 20, English Language Arts 20, Physical Education 20, and Wildlife Management 20, which are combined to create a unique integrated package, based on the concepts of environmental and adventure education. MathA30/B30 online courses, especially designed for Outdoor School students, are also available upon request. In addition, students need to pass a physical test which involves a 400m-swim and a 2km-run to make sure that they are qualified for certain outdoor activities.

All grade eleven students from Saskatoon's public high schools are eligible to participate. Students are invited to split their grade eleven year between a semester in the outdoors and a traditional academic semester attending regular classes. The home base of the program is a big room at Marion Graham Collegiate. Different from traditional classrooms, the room is furnished with couches, comfortable chairs, cushions, and small tables. The interior walls are covered with maps, pictures, posters, and evidence of many student projects. As Archibald describes, "while the teachers use the room as a logistical headquarters, the students use it as a gathering place that functions as a center for preparation, planning, debriefings, meetings, presentations, reflection, and socializing" (2001, p.36).

The focus of the outdoor semester involves five or six major outdoor excursions. Every four to five weeks students travel to different eco-regions of Saskatchewan and participate in extended

excursions that combine outdoor pursuits and biology/geography field work. These week-long excursions are based on an adventure education model and utilize such outdoor pursuits as canoeing, backpacking, skiing, winter camping and survival expeditions as vehicles for both academic and personal growth. As cited in the ODS brochure<sup>4</sup>, the major excursions include the following:

- Wilderness/Whitewater Canoeing (Churchill River – Boreal Forest)
- Backpacking (Saskatchewan River Valley)
- Winter Camping (Nisbet Provincial Forest – Boreal Transition Zone)
- Urban Trekking/Wall Climbing (City of Saskatoon)
- Skiing, Snowboarding & Camping (Thickwood Hills – Aspen Parkland)
- Hiking (Grasslands National Park – Mixed Grasslands)
- Sustainable Living (Rural Saskatchewan)

Besides the week-long excursions, the program also utilizes closer regional locations, resources, and facilities, such as the Meewasin parks, Brightwater Science and Environmental Centre, Sutherland beach, Pike Lake, etc. for students to visit on a daily basis. On occasion some preparatory learning may utilize a classroom, but students spend most of their time away from Marion Graham. Each semester, there are as many as 30-40 guest speakers, specialists, and expert instructors giving presentations to the program and facilitating students' outdoor learning and research process. The program, therefore, is a combination of classroom preparation and outdoor excursions with the help of both the teachers and a group of specialists, which is way more than regular classroom learning.

Archibald identifies the major goal of the program as personal development, which involves both the development of self-understanding and a sense of community. Each trip allows the

student to develop skills specific to the particular outdoor pursuit activity so that they develop the confidence to live safely and comfortably in the wilderness. When the student realizes that he/she can complete a task, be it canoeing or building a tent, independently and proficiently, he/she takes pride in his/her accomplishments, and becomes more confident to meet other challenges. Archibald believes that outdoor education provides the students with real-life experiences that allow their confidence to blossom. What is also important is that the concept of community develops as the students learn to work together and help each other. Students are given real life responsibilities in the outdoors. On a canoe trip, for instance, the first-aid kits are carried by the students. They pack the first-aid kits and make sure that everything is in them before go on the trip. If they forget some items, such as band-aids, or certain splinter or moleskin for blisters, somebody is going to suffer for real. So this is not an exercise or worksheets that they are doing in a classroom; this is real life stuff. Consequently, the students learn a realistic sense of responsibility and cooperation. They become part of a community as they overcome the challenges of their adventure-based experiences and projects. As Archibald puts it, “academic learning takes on a new meaning and relevance as it is directly related to the manner in which the students are living” (1997, p.6).

### **3. The Underlying Theory of The Saskatoon Outdoor School Program**

Whenever I have purposefully integrated academics [science] with outdoor education, it has consistently provided some of the most powerful learning experiences that I have observed in students (Archibald, 1997, p.4).

As a science teacher for sixteen years, Kim Archibald recognized that “education”, at least in North America, “continues to take place inside the conventional classroom and, in most cases, the process involves a repetitive and rigorous daily regime” (1997, p.6). A typical characteristic of a traditional education is that “the older the student becomes, the tighter the constraint imposed by the school building and the schedule of the school day” (1997, p.6). Archibald criticizes this kind of educational system with its emphasis on “the transmission of information and sanctioned courses content” removed students from the real world. Rather, he believes that the value of outdoor education lies in its ability to break free of traditional constraints “by first breaking down the traditional barriers of space and time” – the four walls of the classroom, the bells and artificial blocks of time - and second, by breaking free of “the barriers imposed by the traditional disciplines of secondary education” (1997, p.7). Students need to be more actively involved in learning that is experientially based: they “need to be able to think critically, be creative, work productively with others, and be able to solve problems” (1997, p.7). Working from this premise, Archibald believes that “first-hand educational experiences provide a level of relevance and meaning that allow both teachers and students to explore the complex issues of our day to day existence” (2001, p.15).

The idea of establishing an outdoor program that employs an integrated approach with a focus on outdoor education to teaching and learning at the secondary level began to form in his mind prior to his advocacy for the program. The underlying theory that Archibald has been utilizing in Saskatoon Outdoor School program is based on L.B. Sharp’s (1943) philosophy of outdoor education:

That which can best be taught inside the classroom should there be taught, and that which can best be learned through experience dealing directly with native materials and life situations outside the school should there be learned (p.363).

When Sharp was a doctoral student at Columbia University in New York in the 1920s, he integrated the educational philosophy of John Dewey into the youth camping programs with which he was involved. Dewey links experience and learning and provides a criticism of traditional education, “which is, in essence, one of imposition from above and from outside” (Dewey, 1938/1998, p.4). By contrast, Dewey believes “that there is an intimate and necessary relation between the processes of actual experience and education” (1938/1998, p.7), meaning that any really worthwhile kind of education should match the process of experience internal to the learner. Like Whitehead, Dewey believes that growth of experience is identical with education (Whitehead, 1929/1957b; Dewey, 1938/1998). Education involves a process of continuous reconstruction of the student’s experience by means of the curriculum which promotes his/her personal growth. Some growth can be educative and some not, depending on whether present growth encourages or retards desirable and worthwhile future experiences.

Dewey warns that not all experiences “are genuinely or equally educative” (1938/1998, p.13), because it is “the *quality* of the experience” which is essential (1938/1998, p.16). As he puts it, “[t]he quality of any experience has two aspects. There is an immediate aspect of agreeableness or disagreeableness, and there is its influence upon later experiences” (1938/1998, p.16). It is the educators’ responsibility “to arrange for the kind of experiences which, while they do not repel the student, but rather engage his activities are, nevertheless, more than immediately enjoyable since they promote having desirable future experiences” (1938/1998, p.16). For educators, the challenge is to use “his [sic] greater insight...obtained from his past experience” (1938/1998,

p.32) to help students “select the kind of present experience that live fruitfully and creatively in [their] subsequent experiences” (1938/1998, p.17).

In *Experience and Education* Dewey argues that two principles characterize experience: one is continuity, meaning “that every experience both takes up something from those which have gone before and modifies in some way the way the quality of those which come after” (1938/1998, p.19). Every experience embodies elements of a person’s past experience, and they are carried forward to influence the value or disvalue of his/her future experiences. The second principle is interaction, which refers to an interplay of objective and internal conditions comprising a single experience (1938/1998, p.24). While objective learning conditions can be controlled to some extent by teachers, internal conditions cannot because they are an integral part of their own distinctive experience. These two principles of experience, namely continuity and interaction, together provide the criteria for the value, or quality, of an experience.

What kinds of activities promote “desirable future experiences” and hence exhibit “quality” for Dewey? He suggests that such activities as cooking, sewing, manual training, pottery making, and weaving “showed students where man had come from and how he [sic] had reached his present level of knowledge skills, while preparing for their own future thinking and activity as adults, which was to be achieved by the more formalized studies of mathematics, history, geography, and science” (Hendley, 1986, p.25). These activities provide a continuity of experience between the following polarities: past and present, home and school, child and adult. They are likely to give students a good introduction to the formal studies of the curriculum, and promote desirable and valuable future experiences.

In keeping with the ideas of Dewey, Sharp advocated the importance of meaningful experiences in the educational process, and believed that outdoor camps should be an integral part of education. Sharp's 1930 doctoral dissertation and subsequent research helped establish outdoor learning as a valid approach known as "outdoor education," a term coined by him in the mid-1940s (Knapp, 2000). Archibald believes that Sharp's interpretation not only provided "a philosophical base for practitioners, theorists, researchers," but also "suggested that outdoor education is not a separate and distinct subject; rather it brings together and integrates content from several other subject areas and disciplines" (1997, pp.9-10). Sharp's statement suggests a need to consider an integrated or interdisciplinary way of learning in the "best place" possible. The outdoor program, therefore, has been utilizing an integrated approach that incorporates "the strengths of academic learning with outdoor adventure education" since its initiation in 1997. "Such a program," as Archibald emphasizes, "would bear little resemblance to a traditional high school experience" (1997, p.2). To learn natural history, students are sent to the southern grasslands of the Frenchmen River Valley to directly experience Saskatchewan's natural history with a strong team of specialists. To learn boreal forest ecology, students live in the forest for a week. An approach to learning that connects subject matter and at the same time provides first-hand experiences, often provides a more natural and personal motivation for students (1997, p.7).

In addition to Sharp's (1943) philosophy, Archibald has utilized Donaldson and Donaldson's (1958) definition of outdoor education: "Outdoor education is education *in, about, and for* the out of doors" (p.63, cited in Archibald, 1997, p.10). This definition clearly identifies outdoor education in terms of where learning takes place – in the outdoors - what the subject matter is, namely direct acquaintance with nature and how such learning provides students with an

understanding of the fragility of the planet (Archibald, 1997, p.10; Priest, 1986, p.13). Archibald also utilizes the concept of adventure education as “an outdoor activity that is exciting, challenging, physically rigorous, and involves a sense of danger” (1997, p.18).

In addition, Archibald uses the following two perspectives in fleshing out the theoretical basis of the outdoor program. Neither of the two perspectives is fully developed, and in order to appreciate their significance I have had to pursue scattered references made in the Outdoor School Proposal (Archibald, 1997). The first theoretical perspective Archibald refers to is “curriculum theory” which Pinar (2004) defines as an “interdisciplinary field committed to the study of educational experience, especially (but not only) as that experience is encoded in the school curriculum...” (p.20). For Pinar, curriculum theory provides an analysis of the broad ranging sets of beliefs, explicit or tacit, about the purposes of schooling and the conflicting claims about what knowledge is of the greatest worth. There is, he believes, a need to construct a framework through which educators can examine and understand the different, and sometimes hidden assumptions, beliefs and purposes hiding beneath the educational experience.

Pinar’s account is not unlike that of Dewey who believed “that there is no difference in kind between the child’s [emotional, subjective] experience and the [reflectively formulated, logical] forms of study that make up the curriculum. The child and the curriculum are two limits defining a single process. Education is a process of continuous reconstruction of the child’s present experience by means of the adult experience represented by ‘the organized bodies of truth that we call studies’” (Hendley, 1986, p.23, citing Dewey, 1976, p.278). Dewey reminds us that the curriculum is derived from human experience of the same kind as that of the child in the classroom. While the child’s past experiences represent the internal conditions for learning, the curriculum forms part of the objective conditions which also enable learning to take place. Both

sets of conditions are equally important in making up a valuable, high quality experience for the child to learn from (Dewey, 1938/1998, p.24).

The process of education can be compared to the artistic device of mixing colors. Each child has their unique color growing out of their different past experience, cultural background, age, gender, etc. Assuming the color red represents the curriculum crystallized by adult experience, the result of mixing red (the curriculum) and blue (the child) is purple, but of red (the curriculum) and yellow (the child's experience) is orange. The colors of both the child and the curriculum are important, but it is the process of mixing the two together which really matters. Put differently, the child acquires reconstructed experience arising out of the synthesis of his/her past experience (blue) and adult experience in the form of curriculum (red). For Dewey, the curriculum is a means for teachers to help students develop their individual abilities and actualize their potential, but it cannot replace the students' own experience, nor can it be imposed upon the student (Hendley, 1986, p.23). The goal of education is to develop colorful citizens capable of having high quality experiences, rather than producing a bunch of graduates with drab colors.

A second underdeveloped theoretical perspective informing the Outdoor School is ecofeminism, which is both a theory and a movement based on insights about the similarities between man's domination of women, on the one hand, and the environment, on the other. Diamond (1994) provides the following succinct definition of ecofeminism: "The primary insight of ecofeminism is that all issues of oppression are interconnected, that to understand how to heal and liberate our world, we must look at the relationships between the various systems by which power is constructed" (ix, cited in Smith & Williams, 1999, p.104). Ecofeminism asserts that all forms of oppression are connected, and that the structures of oppression must be addressed, understood and challenged by recognizing the relationships among these different

systems. For example, the oppression of women and nature by patriarchal power structures must be examined together or neither can be confronted fully. There are a number of strands of ecofeminism, including liberal, Marxist, cultural, and social. Liberal feminism is consistent with the objectives of an environmentalism aimed at reform, and it strives to alter human relations through the passage of new laws and regulations, whereas cultural ecofeminism analyzes environmental problems within its critique of patriarchy, offering alternatives that could liberate both women and nature. Marxist and social ecofeminists ground their analyses in issues of reproduction, the domination of women by men and the ways in which capitalist relations of production promote the domination of nature by men. Each strand of ecofeminism has “been concerned [in different ways] with improving the human/nature relationship and each has contributed to an ecofeminist perspective in different ways...” (Merchant, 1996, p.5).

#### **4. Whiteheadian Elements in the Outdoor Program**

Although Archibald does not utilize Whitehead’s philosophy as one of the program’s philosophical bases, Whiteheadian elements are apparent. A major focus of the program is the adventure excursions to the wilderness regions of Saskatchewan’s major eco-regions. Students are invited to do exciting things like wilderness canoeing, backpacking, camping, skiing, snowboarding, and rock climbing. These challenging activities capture their imagination, their sense of adventure, their desire to do more than just sit inside a building on a daily basis. As Whitehead points out, “without the adventure of romance, at the best you get inert knowledge without initiative, and at the worst you get contempt of ideas – without knowledge” (1929/1957b, p.33). Moving into the cycle of precision without having opportunities to experience a sense of the adventure of free inquiry and experience of the outdoors, learning

becomes empty and meaningless. As long as students can build on their sense of romance, the “joy of discovery” (Whitehead, 1929/1957b, p.2) will be strengthened.

Outdoor education is not restricted by school buildings, one-hour blocks of time, or the textbook for a course in biology or geography. Students can spend as much or as little time they want on what they choose to learn. Students learn voluntarily, and the cycle of romance begins as they observe, imagine and reflect. They have enough freedom to think and learn at their own pace. For example, each student will stay in one location by him/herself for hours, which is called solo time, or on a canoe trip, and there are no deadlines or pressures. When canoeing on the Saskatchewan waterways students have time to become immersed in the beautiful scenery and experience a profound sense of calm. On such a canoe trip, students want to learn more about the local scenery and the history of the waterways because they are curious about the world around them, not simply for the sake of a test. This is how teachers at the Outdoor School integrate local history with geography through outdoor pursuits, where the romantic appreciation of the scenery of the waterways is already stirring in the students’ mind, engaging their interest to learn more about that history and geography.

The flexibility of outdoor education in terms of when the students learn, where they learn, and what they learn, requires a strong sense of self-discipline, for “the only discipline, important for its own sake” (Whitehead, 1929/1957b, p.35). It is the students’ own desire to learn that becomes the source of the rhythm governing the cycle of their growth and strengthens their natural impulse towards self-development. For example, once they have made their various trips, students need to select one Saskatchewan plant or animal species and carry out research with the help of teachers, research scientists, and/or national park interpreters in order to obtain the Wildlife Management credit. A typical day when students are involved in doing their research

projects might look like this: They ride their bikes to school at 8 o'clock in the morning; wait for some time to talk to their teacher from whom they get feedback and advice on their projects; they then have two or three conversations with other students; and get back on their bikes and ride around Saskatoon going to libraries, interviewing community members or contacting a specialist who earlier gave a presentation about their research topics.

There is a group decision on what time to meet everyday. It is the students, not the teachers, who decide to meet at 8 or 9 o'clock each morning, because they are enthusiastic about what they are doing, and in turn want as much time to work on their projects as possible. The teachers make themselves readily available to the students, who understand that the completion of the assignment is entirely their responsibility, involving research, writing, listening, interviewing, riding their bikes, and completing their research projects. Students are kept busy between outdoor excursions and projects, and "spend approximately 80% of their time away from a traditional high school setting" (Archibald, 2001, p.36). They learn to manage blocks of time for group meetings and independent research, to locate productive places to work, and to organize information acquired from community resources, teachers, specialists, and libraries by themselves. Most of the students commented that they worked harder than they ever had before in school. In the words of one student, "it's harder than regular school, but you'll like it." Many students indicated a sincere appreciation for being given freedom and responsibility to engage in activities about which they are enthusiastic.

As mentioned, students spend a week living in the boreal forest, several days living in the grasslands near Val Marie as well as some time in different areas. They learn some principles of biology and the geography of Saskatchewan, and develop a basic understanding of what living things usually grow, live, survive, and thrive in different eco-regions. Now they are faced with

combining all of the knowledge and experience into a wildlife management research paper and preparing for a final presentation. For example, their research topic could be about any Saskatchewan plant or animal species, such as the Prairie Coneflower or the Barn Owl. Students study the species' living environment, investigate whether or not it is an endangered species and provide suggestions for protecting the species and maintaining its habitat. This is the next overlapping cycle of generalization, in which students come to understand the connections between abstract principles and concrete experiences. They apply their knowledge and experience in order to understand ecology, which in turn helps them strengthen their appreciation of the natural world. There are numerous minor rhythmic cycles of romance, precision and generalization recurring everyday or every week that punctuate the rhythm of freedom, discipline, and freedom which forms the students' lives. Keeping outdoor journals and doing writing assignments are part of the process of learning English Language Arts that involves the rhythmic cycles of freedom, discipline, and freedom. Students keep outdoor journals wherever they go, and they freely make notes, draw pictures, and even write poems on what they are learning from different places and different speakers. Constant writing is good practice, and when it comes to writing assignments, students can demonstrate their knowledge of grammar and vocabulary, the construction of sentences and their ability to organize their essays. Writing assignments strengthens their capacity for generalization in English Language Arts by relating the principles to concrete facts emergent from their own experience. Students can use language in creative ways to write assignments, describe their experiences, and express their feelings. As the freedom and joy of writing arise, students enter into the next overlapping cycle of romance with added knowledge and enhanced abilities of application.

Whitehead's concept of internal relations is also apparent in the program. One of the strengths of the program is using the outdoors as a vehicle to gain an understanding of the relatedness of different subject matters. Five subject areas: Biology, Geography, English Language Arts, Physical Education, and Wildlife Management are blended together throughout the day. For example, students learn about local biology and geography on a canoe trip in the historical waterways of Saskatchewan. The knowledge and physical skills necessary to safely carry out outdoor pursuits, such as camping, hiking, canoeing, cycling, and map reading, all contribute to a physical education credit. Students work toward their English credit through reading environmental literature, keeping outdoor journals and writing assignments for the wildlife management projects. More importantly, a significant environmental focus permeates all learning activities, which more than covers the grade-eleven biology and geography curriculum.

Students who have the opportunity to live on a traditional farm for a week are more likely to develop an understanding of the interconnectedness of nature and the interdependency between human beings and the natural world than those who do not. The program provides numerous educational opportunities to highlight the relatedness of subject matters and the internal relations amongst natural entities. Students study the agriculture of Saskatchewan and experience first hand using traditional farming tools and the adaptations of plants and animals. They become aware of the internal relations among the seasonal life cycles, the changes in soil formations, the lives of plants, animals, and human beings. For example, human beings can change soil formation in several ways: by planting different kinds of vegetables and flowers in each season; by mixing the different soil layers, or by removing the vegetation cover. Soil erosion caused by vegetation loss has increased dramatically by human activities, such as deforestation, the over-grazing of livestock, and pollution. Erosion carries away essential nutrients out of the soil,

and the land becomes useless. Many farmers and those who live in the forest regions are forced to leave their homes and find other areas they can cultivate. For the indigenous peoples who dwell in the forest, soil erosion not only destroys their land but also threatens their way of living, because the land is both the source of their life and the traditional basis defining who they are (UN Declaration, 2007). In addition, soil erosion can cause runoff, which clogs rivers and lakes and increases the likelihood of flooding, weakening the foundations of buildings, houses, bridges, and fences, and affecting the lives of plants, animals and human beings. Thus, the changes in soil formation caused by human activities also change the lives of human beings in various ways. The two are in fact internally related, and students at the Outdoor School can thereby understand that humans are part of a larger interrelated, complex web of natural entities.

## **5. An Interpretation of the Saskatoon Outdoor School**

The Saskatoon Outdoor School is a highly successful and respected program whose staff has done a very worthwhile job for many years, promoting students' active engagement in learning (Archibald, 1997; 2001). Their enthusiasm for the program can be ascertained from their comments, some of which I refer to in this section. I begin by expressing four concerns about the practice of the outdoor program, and then analyze it on the basis of Whitehead's accounts of the rhythmic cycles of growth and of internal relations.

Teacher Kim Archibald, in particular, has made a great contribution to this program in terms of his initiative, leadership, teaching experience and outdoor expertise. These contribution, however, hint at my first concern about the program. What would this program look like without Kim Archibald? The program has depended on his strength, insights and expertise since its

initiation (Archibald, 1997; 2001). There is only one female teacher working together with him in the program despite the fact that he had argued in the 1997 project proposal that “it should be possible to have capable teachers rotate through the program, each bringing different dimensions and strengths to the program” (1997, p.62). More qualified teachers like Archibald are needed, and the necessary training and professional development should be provided to encourage them to participate in the program as a living example of what outdoor education can achieve.

The second concern is that outdoor education of this kind needs support from, and an ongoing connection with, the local community. The program’s longstanding partnership with the Meewasin Valley Authority is a good example of utilizing local community resources to provide students with first-hand experience. The program still needs to develop more partnerships with local community agencies and institutions of higher education like the University of Saskatchewan (U of S), which has many resources, facilities, and a great deal of expertise. Archibald recognized the importance of developing partnerships with the U of S in the more recent concept plan by stating that “younger children have participated in field trips to the campus, older students have participated in work/research programs, and teachers continue to reconnect for professional development, upgrading, and advice” (2001, p.52). Partnerships help build collaborative connections among community organizations to work together for providing students with various outdoor learning experiences. More partnerships are needed between the Outdoor School not only with the College of Education, but with other departments like Biology and Sociology, and collaborative efforts with the Saskatoon Public School Division, local community agencies, and colleges like the Saskatchewan Institute of Applied Science and Technology (SIAST) and the Saskatchewan Indian Institute of Technologies (SIIT) could strengthen the growth of outdoor education.

The third concern is the need to expand the program to include other grade levels. The Outdoor School is only open to grade eleven students in Saskatoon public schools. There are many students at other grade levels who may be eager to participate in such a program. Education at each grade level needs outdoor education as a way to integrate curriculum with students' real life experience. Archibald shares this concern, but since the Outdoor School program is part of the public school system, the expansion of the program to include other grade levels will require careful consideration and planning (Archibald, 2001, p.46). Expanding the program will require the input of more professional educators. Special attention needs to be paid to "the curriculum focus, the sequence/progression of outdoor experiences, and the funding" (2001, p.46), in order to maintain the quality of the outdoor program, as well as the necessary financial support for staff and equipment.

Fourth, no formal evaluation has been made of the Outdoor School Program. The only kind of summative evaluation comprises students' comments, such as "it (ODS) truly is a once in a lifetime experience;" "I have learned so many life changing ideas, messages, and skills because of ODS;" "My friends say when I start talking about school my face just lights up and I can't stop smiling;" "I can pin point the exact moment I changed, when I lit my own fire at Blue Mountain solo time;" etc. (ODS brochure). Most of the students thought they worked harder than ever before in school, and that they liked it. However, the program lacks statistical evidence acquired from a formal evaluation process to show that the goals of the program are being met. Formal evaluation could include a *needs assessment* to help determine what participants are not currently served by the program and provide insights into how the program could be improved to meet these participants' needs. Another kind of formal evaluation involves a *process evaluation*, which examines the process of implementing the program and determines whether the program

is operating as planned. Both evaluation methods could provide valuable information to make judgments about the program in order to improve its effectiveness and inform further programming decisions.

From a Whiteheadian perspective, elements of the rhythmic cycle of growth and of internal relations between entities are both apparent in the program. The program provides students with relevant and meaningful academic opportunities, which take place in the best places possible. Learning about natural history in the southern grasslands of the Frenchmen River Valley, and living in a forest to study boreal forest ecology are likely to tap into students' interests and enhance the romance they feel so that they want to learn more. While the students have considerable freedom to learn in terms of both time and space, they also have a growing responsibility for their own learning. Most of the time, they are busy with outdoor excursions and a number of overlapping assignments. As they learn to manage their time, organize their work, and further their research projects, their learning becomes increasingly independent and self-motivated as they combine enthusiasm with self-discipline. Learning enters into the overlapping cycle of generalization when students prepare for a final presentation on a research topic and document their research in a major paper as they make an effort to apply their knowledge and outdoor experience in order to understand the ecology of a particular Saskatchewan plant or animal species. As Whitehead points out, generalization is "a return to romanticism" (1929/1957b, p.19), a new cycle of romance, with added knowledge and skills acquired from the cycle of precision. Students experience the rhythmic cycle of growth as overlapping phases of freedom, discipline, and freedom which punctuate their learning throughout the program. Numerous minor cycles, or eddies, of romance, precision, and generalization

also recur, that include writing journals and assignments to strengthen their language skills, as students constantly experience, learn, and conduct research on their various assignments.

The program is also successful in developing the students' relationship with their own self-understanding, their relationship with the teachers and other students (thereby building a sense of community), and the relatedness of subject areas (an integrated approach to knowledge and learning). Students' self-understanding is increased as they become aware of their own worth. When they develop various outdoor knowledge and skills such as building a tent and making a map independently and proficiently, the awareness that they can achieve something through their own efforts helps them develop a better understanding of themselves. A sense of community is developed as they work and live together, learn to depend on one another and share real-life responsibilities. Packing and carrying first-aid kits, for example, are the responsibility of the students. If they forget some items, such as band-aids, or certain splinters or moleskin for blisters, somebody is going to suffer as a result. A basic understanding of the interconnectedness of nature is gained as they learn some principles of ecology through an integrated approach that cuts cross curriculum boundaries. Students become aware of the internal relations among the lives of plants, animals, human beings, and their living environment as they study the ecology of various Saskatchewan native species and experience first hand in different eco-regions. How their study and experience of outdoors changes them is well expressed in one student's words: "I can pinpoint the exact moment I changed, when I lit my own fire at Blue Mountain solo time" (ODS brochure). The relationship between human beings and nature is developed, especially during solo time when students spread out in the woods and stay in one location by themselves for hours. It is a valuable time for each student to stop and reflect upon his/her experience over the past few days, and more importantly, provides them with the

opportunity to develop a deeper awareness of their relationship with the natural world. This awareness is an example of what deep ecologists call deep experience, but once again Archibald does not acknowledge this as a source capable of strengthening both the theoretical and practical basis of the program. According to deep ecologist Stephan Harding, “when such deep experience occurs, we feel a strong sense of *wide identification* with what we are sensing”, and we realize the interdependence between the well-being of nature and ourselves (2002, p.16). Furthermore, “the development of *wide identification* in which the sense of self is no longer limited by the personal ego, but instead encompasses greater and greater wholes... [is] *self-realization*” (2002, p.16). As a sense of self is expanded, one experiences one’s deepest *self* as a genuine part of all life and this experience facilitates one’s self-realization. Other organic beings experience similar processes of self-realization as they “are engaged in unfolding their innate potentials ... since all beings strive in their own ways for self-realization...all are endowed with intrinsic value” (2002, p.16). Deep ecologists believe that all life forms are capable of self-realization, a process in which their full potential, or intrinsic value, is enhanced.

Finally, however, the Outdoor Program is based on a very limited conception of students’ aesthetic appreciation of nature. Part of the reason is that Archibald does not provide any theoretical analysis of aesthetic experience in his project proposal (Archibald, 1997) or his concept plan for Out-of-School Education (Archibald, 2001). As a result, the program justifications do not provide a framework for advancing learning that deliberately integrates processes for students to understand the value and place of aesthetic experience in appreciating nature and environment that goes beyond simply asserting that it is important.

While the various documents describing the Outdoor School engage practical issues about student learning, they do not address more fundamental questions about teaching and learning in

nature. For example, how do students experience the natural world, and why is their experience of nature so important? From a Whiteheadian point of view, the program does not sufficiently provide the conceptual basis to recognize the importance of students' bodily feelings at the base of their experience which connect them with the natural world. Whitehead provides an understanding of the relationships between humans and nature from an organic perspective in which the internal relations among all entities play an important part. Like Dewey (1934/2005, pp.42,49), Whitehead believes that aesthetic appreciation is inherent in all human experience, and the bodily feelings at the core of our experience enable us to understand the reality of human connectedness with nature and the interconnectedness of nature herself (Whitehead, 1929/1957a, pp.137,205,244). As Woodhouse puts it, "their transitional character, enabling feelings to flow from the objective to the subjective poles of experience, provides human beings with a rootedness in reality" (1995, pp.356-357). Bodily feelings flow from the objective pole (a perceived entity like a barn owl) to the subjective pole (a human percipient) in a unitary experience. This fluid experience links the human being directly to both the owl and the internal relationships between the owl and the habitat that support its life.

## **6. Conclusion**

In this chapter, I have described the story of the Saskatoon Outdoor School, which is much more than just an outdoor adventure-based program. It involves integrating the curriculum with students' outdoor experience and developing their self-understanding in conjunction with a sense of community. Students learn some fundamental principles of ecology through outdoor experience, and develop an understanding of living beings and their interconnections with human beings. From a Whiteheadian perspective, the program embodies some elements of the rhythmic

cycles of growth but does not acknowledge the need to recognize experience as flowing from the bodily feelings that connect humans with nature. As a result, the value of the aesthetic nature of experience is underappreciated because little attention is paid to the bodily feelings at the core of students' experience that allow them to appreciate their connectedness with nature.

In the next chapter, I analyze the concept of place-based education, and argue that it is the most inclusive and adequate of the three approaches to outdoor education, because it is both true to my own experience and consistent with Whitehead's philosophical framework.

## Notes

1. *A school without walls*. Retrieved Oct.15, 2009, from [http://www.saskschools.ca/~w\\_m\\_ejournalism/schools\\_outdoor.html](http://www.saskschools.ca/~w_m_ejournalism/schools_outdoor.html)
2. Kim Archibald completed his M.Ed. at the University of Saskatchewan in 1997, and his project was entitled "Outdoor school: An integrated outdoor/adventure education program for grade eleven students."
3. Meewasin's jurisdiction centres in Saskatoon and runs approximately 60 km along the river through Saskatoon and R.M. of Corman Park from Pike Lake in the southwest to Clarke's Crossing in the northeast. It encompasses conservation areas, parks, museums, interpretive centres, the university lands, canoe launches, community links, and over 60 km of Meewasin Trail.  
  
The Meewasin website. Retrieved July 30, 2010, from <http://www.meewasin.com>
4. Grade Eleven Outdoor School Program brochure. Retrieved Oct. 15, 2009, from <http://www.spsd.sk.ca/files/programs/OutdoorSchool2007.pdf>

## Chapter Four

### Place-based Education and the Importance of Whitehead's Contributions

There was this lightning tree that got blown in a storm recently. My kids [4<sup>th</sup> grade students] made a circle around it and said 'Let's pause and remember the lightning tree as it was.' I thought they were being facetious, but they weren't. It was so sweet. My kids sang the circle of life to it, and said 'You're going to be dirt some day, but that's OK'.

——CO-SEED teacher

#### 1. Introduction

In this chapter, I analyze the concept of place-based education, and argue that it is the most inclusive and adequate of the three approaches to outdoor education. While the Outdoor School Program analyzed in the previous chapter involves some aspects of place-based education by taking students outside the classroom to connect with local people and places, it works inside the public school system to enhance students' personal development and adventurous experience. As such, it is different from the kind of place-based approach I propose here in which collaborative efforts are made both inside and outside schools to cultivate in students a sense of place about where they live.

In order to make my argument, I first analyze the concept of place-based education advocated by such authors as Sobel, Gray-Donald and Selby and others.<sup>1</sup> I then consider the CO-SEED project (Community-Based School Environmental Education project) in the United States as an

example of place-based education, because it involves partnerships between schools and various community-based learning centers in introducing students to outdoor experiences. I argue further that place-based education such as that embodied in the CO-SEED project would benefit from the theoretical framework of Whitehead's philosophy, particularly the key concepts of the rhythmic cycles of growth, internal relations, wisdom, value, and the art of life. Together they strengthen place-based education, making it an effective approach to outdoor education.

## **2. Place-based Education**

[A place is] a piece of environment that has been claimed by feelings. We are homesick for places...And the catalyst that converts any physical location into a place is the process of experiencing deeply.

– Alan Gussow, cited in Sobel 1993, p.159

Place-based education, also called pedagogy of place, place-based learning or community-based education was firstly initiated by the Orion Society<sup>2</sup> and Professor David Sobel in the early 1990's. Sobel (2004) defines place-based education as:

[t]he process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens (p.7).

Place-based education uses “the local community and environment” as the starting place for teaching and learning different subject areas, uses students’ experience to strengthen their academic performance, builds community connections and a commitment to citizen engagement, and enhances students’ appreciation for nature. Such projects as “Mystic River Trading Cards” and “Into the Wild” (both CO-SEED projects analyzed below), provide outdoor experience for students to learn to appreciate their connection with nature. In the case of the County Parks Commission (Smith, 2002, pp.592), the process is somewhat different and involves engaging students in community development. A class of fifth-graders and their teacher worked with the County Parks Commission to gather public information through interviews and surveys, regarding the community’s needs on new playground equipment.

Although place-based education is “a relatively new term...progressive educators have promoted the concept for more than 100 years” (Woodhouse and Knapp, 2000, p.2). It is based on the assumption that students’ local community and environment is the core for learning, and that they should have a grounding in the history, culture and ecology of their surrounding environment before moving on to broader subjects. A literature review of place-based education, conducted by Woodhouse and Knapp (2000), suggests that “place-based education represents a recent trend in the broad field of outdoor education” (p.6), and has the following five essential characteristics (p.4):

- It emerges from the particular attributes of a place.
- It is inherently multidisciplinary.
- It is inherently experiential.
- It is reflective of an educational philosophy that is broader than “learn to earn”.
- It connects place with self and community.

Taking each of these points in turn, first, the learning content of place-based education is drawn from the unique local history, environment, culture, economy, literature, and art of a particular place. What students learn in place-based education is always different according to where they live, which means that the materials suitable to one place may not fit another. As Smith (2002) puts it, “generic curricular models are inappropriate” to place-based education (p.587). Second, a place-based approach to education requires that educators integrate different subject areas together to provide students with a comprehensive understanding of their place. A nature writing project, for example, connects the subject areas of English Language Arts and natural history, and fosters students’ appreciation of the natural world (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>). Third, place-based education, in most cases, includes a participatory action or service learning component. Students are “actors” rather than just “learners”. They are not stopped at “awareness”, rather they take action to contribute positively to their community. Educators, such as those cited by Smith (2002), strive to engage students in the County Parks Commission, and they believe that young people need to be given opportunities to share their knowledge, perspectives, and experiences about important community issues (Smith, 2002, pp.591-593).

Fourth, unlike those who hold that the primary goal of schooling is to prepare students for market competition, place-based education has broader objectives, based on a belief that “education should prepare people to live and work to sustain the cultural and ecological integrity of the places they inhabit” (Woodhouse and Knapp, 2000, p.4). Fifth, place-based education connotes an emphasis on the inescapable embeddedness of human beings in their local community and environment, which is their own particular place. Smith and Williams (1999) point out that “stories, religious and moral systems, and even language are intimately connected

to place, as well. We are place-based creatures” (p.4). The place has been shaped by the people who live there, and in turn, local cultures have arisen in response to the demands and opportunities of that particular place. Place-based education cultivates a sense of belonging to one’s community that is often missed in many educational programs. In the following section, I use the CO-SEED project in the United States as an example of just this kind of a place-based approach to outdoor education.

### **3. The CO-SEED Project**

#### **3.1 Mission and Overview**

The Community-Based School Environmental Education (CO-SEED) project first started in 1997. It is a place-based education initiative, directed by the New England Institute (ANEI), “to help schools and communities work together to develop community and place-based curriculum” (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>). Utilizing the concept of place-based education, CO-SEED uses the local community and environment as the basis to teach students all subject areas with a focus on “hands-on real world learning experiences” (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>). Hands-on learning involves learning by doing. For example, if you want to learn how to swim, you should do so in a swimming pool, rather than merely learning the technique on dry land or in a traditional classroom. As one high school student commented about the CO-SEED project,

You learn so much more by doing, instead of just having a book to read that tells you to memorize some facts. The facts just go away because you don’t remember doing the fun projects. It just doesn’t seem to stick. When we did [the sidewalk project], I can look

back and remember how my work contributed to everybody else's. It all made a whole in the end for the Main Street Project (Duffin, 2004, p.145).

The existing projects in CO-SEED range from the topics of art, maps, books to student writing, field/community guides, and lesson planning. Currently, five schools (elementary, middle and high) are involved in this project. Partnerships between schools, higher education institutions, community-based learning centers, and other community organizations offer rich opportunities to students' learning and growth. As stated on its website, "CO-SEED projects seek to connect students, schools, curriculum, and community" (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>).

### **3.2 The Projects: Examples**

- Mystic River Trading Cards – Beebe Middle School and Salemwood Middle School in Malden, Massachusetts

In the fall of 2001 a small group of eighth grade students from two middle schools, under the direction of local artist Melissa Kulig, created the first group of trading cards, based on the plant and animal life of the Mystic River. Melissa combined the artistic techniques with site visits to the Mystic River where the students learned to document the species that they saw. Students were personally involved in observing, identifying, and drawing throughout the project. Each Trading Card was set up like a postcard. To cite the example of the Canada Violet, a student drew a picture of the flower on the front of the card and wrote its background information on the back. The Mystic River Trading Card Project used "art as a medium to engage Middle School

students to learn more about their surroundings and to inspire a new generation of informed and active watershed stewards” (CO-SEEDproject <http://www.antiochne.edu/anei/programs/coseed/>).

- Welcome to Gorham – Edward Fenn Elementary School in Gorham, New Hampshire

A book, titled “Welcome to Gorham,” was published by third grade students and their teachers at the Edward Fenn School in the 2000-2001 school year. The students worked with author Rebecca Rule to develop stories and with their art teacher to create pictures.

- A Stroll through Antrim - Great Brook Middle School in Antrim, New Hampshire

This project focuses on the creation of a tour guide to Antrim's South Village. In June 2000, a group of Fifth Graders and their teachers worked much of the year to research the history of Antrim's South Village and to develop a walking tour. The tour is available as a tool for visitors to Antrim to learn more about the South Village.

- Into the Wild – Gorham High School in Gorham, New Hampshire

“Into the Wild” is a nature writing project offered at Gorham High School. Each week, students visited a local place of interest and wrote in any format that they chose (non-fiction, fiction or poetry). Several of the students’ pieces are then published. One student wrote the following poem,

A cool breeze blows across my frozen face.

I wonder where it has been

And where it will go;

Maybe to a desert or across the sea.

Maybe to an ancient land,

Or even right back to me.

Wherever it goes,

I know it will be free,

Gliding along so gleefully.

Seeing the sights there are to see,

Laughing at you and me over our human stupidity.

On it will glide,

Into the reaches of forever.

When will it stop?

Possibly never.

Stealthily it flies,

Over land and over sea

Never giving a second thought

About me. (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>)

- Geometry Challenge – Littleton High School in Littleton, New Hampshire

In this project, a challenge is given to the students of a geometry class at Littleton High School. Since this school has “the opportunity to develop an outdoor learning lab within walking distance of the school campus”, teachers indicated they would use this space if students provided them “with ready-to-use lesson plans connected to the state standards”. Teachers were challenging their students “to develop an interdisciplinary unit of no less than five lesson plans” for the outdoor spaces to be used by their classes (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>). Each lesson plan is interdisciplinary and connects geometry to one other discipline/course taught in this school district. No two plans target the same two disciplines/courses.

### **3.3 Goals of the CO-SEED Project**

An evaluation of the CO-SEED project conducted by Duffin (2004) identified three main goals. The first is to promote student engagement in learning. CO-SEED provides students with many hands-on projects that engage them in learning about the world around them. One teacher said, “Last week we had snails and butterflies, we’ve studied ants. It holds [students’] interest, they learn their vocabulary, they learn the lifecycles and... it helps them formulate questions” (2004, p.90). Another teacher claimed that “I have seen a couple of kids who usually have a hard time focusing get really engaged in their [CO-SEED] work” (2004, p.107).

The second goal of CO-SEED is student attachment to place. One teacher commented as follows,

My own child has done nature trail activities since Kindergarten. I was rather timid, afraid of getting lost, but he said ‘No, you know what, this is what we’ll do... the worst that could happen is we’ll have a longer walk.’ It’s not the big scary outdoors anymore. He’s brought the whole family out and showed us around (2004, p.152).

It appears that CO-SEED enables students to participate in various outdoor activities and to experience nature for themselves, which in turn helps them to cultivate an affinity with the place where they live (Orr, 1994). Based on their outdoor experience, students learn to recognize and appreciate their connections to the world around them.

The third goal is student civic engagement. The project is based upon the assumption that “when one has developed an attachment to one’s place and the skills to act upon that attachment, an individual will become a more active participant in his or her community” (Duffin, 2004, p.13). For example, 5<sup>th</sup> grade students of Bradford Elementary School in Bradford, Vermont “started their study of food webs by conducting an inventory of plants and animals they found in the forest, stream, and pond. This information was given to the Low-St. John forest committee to help them inform the public of the inhabitants of the forest” (2004, p.129). One teacher also commented that “CO-SEED has been responsible for engaging our students in decision-making things like...establishing the student council. Also, the evening CO-SEED meetings have involved some of our 6<sup>th</sup> grade kids on the committees” (2004, p.128).

According to Duffin’s evaluation, the CO-SEED project has met its main goals in fostering student attachment to place, strengthening their engagement in learning, as well as building upon their involvement in school and community development. The project has enabled wide opportunities for student learning about the content of place-based education and given teachers

valuable opportunities to gain the knowledge and ability to utilize extensive and diverse school-community partnerships.

### **3.4 CO-SEED: A Conclusion**

In conclusion, the CO-SEED project is successful in using local community and environment as the core of learning, and in cultivating in students a sense of place. It embodies the following five characteristics in delivering place-based education. First, while many of CO-SEED's staff do not belong to the public school system, they strive to influence educational practice by developing curriculum units, and projects, and by providing specialists to coordinate the projects in each school. Second, each lesson plan is designed to cross curriculum boundaries, and is not restricted to a particular subject matter. Some programs are even designed to challenge students to develop an interdisciplinary unit of lesson plans by themselves. Third, various place-based curricula are developed for elementary, middle, and high school students, proving that outdoor education can take place at any level. Fourth, partnerships between schools and community organizations offer rich opportunities to students' learning. One of the examples of community connection associated with CO-SEED was the re-establishment of the Low-St. John Forest Committee, which had been inactive for several years. Now the Committee has meetings regularly "to plan and coordinate a range of improvement and educational activities," and students are "actively involved with some Forest Committee projects" (Duffin, 2004, p.126). These include the study of the food web I described in the previous section, which strengthens their engagement in community development. Fifth, students' connection with nature is strengthened through their first-hand learning experience with local places. All in all, the CO-SEED project is effective in helping students develop stronger ties to their community, a

greater appreciation for the natural world and a heightened commitment to serving as active, contributing citizens.

Place-based education, as exemplified in the CO-SEED project, begins with students' own experiences in discovering local community and natural places, and provides them with various outdoor experiences to enrich their learning. It is consistent with Whitehead's call for the romantic joy of discovery at the very beginning of education (1929/1957b, p.2), and his objection to "the fatal disconnection of subjects, which kills the vitality of our modern curriculum" (1929/1957b, p.6). For Whitehead, "There is only one subject-matter for education, and that is Life in all its manifestations" (1929/1957b, pp.6-7). As CO-SEED shows, one of the most important goals of place-based education is to promote student engagement in learning. This requires what Whitehead calls self-discipline, "the only discipline, important for its own sake" (1929/1957b, p.35). Students' innate interest and desire to learn give them the motivation and energy to carry through the cycles of learning, and strengthen their natural impulse towards self-development. Place-based education also plays an important role in helping students develop "a greater appreciation for the natural world" (CO-SEED project <http://www.antiochne.edu/anei/programs/coseed/>), providing them with various outdoor learning experiences, cultivating an appreciation for the local community and deepening their respect for nature.

Place-based education, however, does not go as far as Whitehead in emphasizing aesthetic experience as the core of students' relationship with nature. For Whitehead, our appreciation of the value of nature is made possible by our feelings at the base of our experience, which bring us into a direct relationship with nature in which we are apart (1929/1957a, p.189; 1929/1957b, p.40) In the following section, I show that Whitehead's philosophy provides a theoretical basis to

a place-based approach to outdoor education, which strengthens its otherwise laudable goals. I do so through an analysis of the rhythmic cycles of growth, the concept of internal relations, and his account of wisdom, value, and the art of life.

#### **4. Whitehead's Contribution to Place-Based Education**

##### **4.1 Contemporary accounts of place-based education**

The growing movement to promote environmental and outdoor education, and more especially, place-based education (Orr, 1992; Smith & Williams, 1999), provides students with invaluable real-life experience in raising their environmental awareness. Smith and Williams argue that “missing in most of these efforts, however, is a recognition of the deeper cultural transformations that must accompany the shift to more ecologically sustainable ways of living” (1999, p.3).

Other scholars who have written about the necessary cultural transformations to meet the ecological challenge include O’Sullivan, (1999), Bowers, (1999), Orr, (1992), and Gray-Donald & Selby (2008). O’Sullivan and his colleagues at the Transformative Learning Center at the Ontario Institute for Studies in Education, University of Toronto, are doing groundbreaking work to forge “an ecozoic vision” based on an “ecozoic consciousness that links ecology, social justice, and spirituality” (1999, p. 2). This process involves the development of “a profoundly holistic and integral education that moves beyond mechanistic atomism” (1999, p.75) and is capable of restoring a balanced relationship with the planet. In order to meet these goals, O’Sullivan (1999) proposes a transformative approach to education which combines both ecological awareness and a critical approach to education tailored to meet the needs of the global market.

Bowers states that “the aspects of the ecological crisis that can be attributed to human behavior are cultural in nature and are directly related to the modern ideas and values that are the basis of the knowledge learned” in school (1999, p.161). He warns that the cultural beliefs and practices passed on through schooling are directly related to the deepening ecological crisis. Like O’Sullivan, Bowers conceives of the need for a fundamental transformation in our relationship with the planet based on indigenous values systems (1999). Orr also believes that “a great deal of what passes for knowledge is little more than abstraction piled on top of abstraction, disconnected from tangible experience, real problems, and the places where we live and work” (1992, p.126). In order to overcome this inertia and help open young people to an awareness of the connections between people, places, and nature, Orr proposes an ecological literacy that requires not only the ability to read and count but also “the more demanding capacity to observe nature with insight, a merger of landscape and mindscape” (1992, p.86).

Gray-Donald and Selby argue that “understanding and critiquing the mechanistic worldview, and in particular its manifestation in education, through a holistic lens creates space for a rich diversity of complementary perspectives in environmental education” (2008, p.1). They show how residues of mechanism still remain within the field of environmental education, and welcome various perspectives to broaden and deepen the vision of environmental education and construct an educational counterculture to mechanism and reductionism.<sup>3</sup>

#### **4.2 Whitehead’s critique of mechanistic materialism and the aims of education**

Whitehead shows quite clearly how a mechanistic worldview, based on “the assumption of the bare valuelessness of mere matter” (1925/1953, p.196), is inadequate as the basis for a full

appreciation of nature. For Whitehead, value is not a human construct, but can be found in all organisms in the process of their emergent actuality. In order to fully realize their own distinctive value, each organism depends upon the rest of the universe as an environment to which it is related (1925/1953, p.194). His philosophy of organism presents a radically different account of the universe to that of scientific materialism (1925/1953, p.194), one that is consistent with a mutual respect and harmony between human beings and the natural world. With regard to education, he views the process of learning as rhythmic and cyclical rather than linear, and all subject matters as interrelated rather than compartmentalized (Whitehead, 1925/1953, pp.148-199; Regnier, 1995, p.384). Most importantly, the aim of education is to comprehend what Whitehead calls “the art of life” (1929/1957b, p.39; Regnier, 1995, p.393).

### **4.3 The rhythm of education**

Whitehead’s emphasis on the rhythms of education provides fresh ground upon which place-based education could grow. Since “life is essentially periodic” with its “alternations of work and play, of activity and of sleep,” punctuated by “subtler periods of mental growth with their cyclic recurrences, yet always different as we pass from cycle to cycle” (1929/1957b, p.17), so too with learning, which is punctuated by the rhythm of freedom – (self-)discipline – freedom, which characterizes the overlapping cycles of romance, precision, and generalization (1929/1957b, pp.29-41).

Many teachers do not yet understand the rhythmic cycles of growth that characterize students’ learning. And schools are too often structured in ways that prevent the kind of healthy growth advocated by Whitehead (Cobb, 1998, pp.105-110). Often, students explore such topics as

rainforest destruction, acid rain, exotic species, and global warming without any experiential understanding of what these concepts mean (Smith & Williams, 1999, p.3; Sobel, 1996). They are faced with huge global environmental issues without first having the opportunity to freely explore them. Sobel (1996) refers to this as “premature abstraction”, which breeds ecophobia, a fear of the natural world and of ecological problems. When we ask children to deal with problems beyond their cognitive abilities, understanding and control, they can become anxious, tune out, and develop a phobia to the issues (Sobel, 1996). The problem of premature abstraction is that complicated ecological issues should be taught in the cycle of precision, and not imposed on students too early before romance has “run its course” (Whitehead, 1929/1957b, p.33). From the very beginning of education, students should enjoy the cycle of romance in which they freely explore the world without any constraints. In this cycle, they are to be given the opportunity to directly experience any subject matter “in their broad generality” (1929/1957b, p.18). Without romance as the background, precise knowledge becomes bare facts without any relevance to the students’ lives. Place-based outdoor education, based on Whitehead’s philosophy, would provide teachers with an approach that helps students confront the ecological crisis in a way that enables them to move beyond despair to an understanding of their own capacity to effect change.

Too often students are often warned that the world is undergoing massive detrimental changes, and that they must change their ways in order for the planet to begin a process of healing. This is a heavy load to bear, especially for a child in a sensitive time of personal growth and exploration. Some may respond with optimism and vigour, but others feel guilty, scared, and become depressed (Gray-Donald & Selby, 2008, p.23). The point is not for teachers to avoid discussing the ecological crisis, but to pursue pedagogical strategies that allow students to engage freely in discussions about it “at a fitting time when they have reached the proper stage of mental

development” (Whitehead, 1929/1957b, p.15). Whitehead insists on the need to honor the rhythm of learning (1929/1957b), and argues that the process of mental growth, or self-development, which lies at the base of all learning, has natural rhythmic cycles in which each cycle is interconnected. Sobel (1996, 2004) agrees with Whitehead that place-based education should provide students with regular outdoor learning experience in order to develop long-term relationships based on care for the places where they live. Place-based outdoor education calls for localized experience and action as opposed to simply addressing the global environmental catastrophe, thus avoiding the “ecophobia” which undermines a good deal of environmental education.

#### **4.4 Internal relations in outdoor education?**

Priest’s definition of outdoor education as “a matter of many relationships [namely,] the interpersonal, the intrapersonal, the ecosystemic, and the ekistic” (1986, p.14) is consistent with place-based education. For Priest, the interpersonal refers to relationships that exist among people – “how they cooperate, communicate, and trust one another during social group interactions” (1986, p.14), for example, the relationship between a child and his/her family, or that between a mayor and the town or city which elected him/her. Intrapersonal relationships, for Priest, refer to how a person relates to him/herself – “their level of independence, their self-concept, and their perception of abilities and limitations” (1986, p.14), such as self-understanding and self-esteem.

For Whitehead, both kinds of relationships are potentially internal. In the case of interpersonal relationships, a long lasting friendship between two people transforms the character of both.

Even a few days' outdoor experiences may build up participants' sense of teamwork and community as they cooperate and trust each other, and share real-life responsibilities. Hence, the interpersonal forges internal relations for those who are open to their experience being profoundly changed. Similarly, the intrapersonal can be a process of self-realization in which the subject becomes increasingly aware of the breadth and depth of their own experience. This process results in a growing identification with one's own developing subjectivity in the manner described by Palmer as "a life-giving conversation of the soul ... [in which we] cultivate a sense of identity and integrity that allows us to feel at home wherever we are" (1998, p.32). A growing self-awareness and stronger personal integrity transform both the subject and her experience.

When Whitehead claims that the goal of education is "the comprehension of the art of life" (1929/1957b, p.39), he defines it in similar terms, namely as the full realization of the individual's potentiality, as I show below. On this view, education should "enhance the growth of the self as an entity capable of integrating and unifying experience into a coherent pattern of feeling, understanding, and knowing" (Woodhouse, 1995, p.353). Where successful, this ongoing process of unification creates internal relations between the subject and the feelings, emotions, understanding, knowing etc., which make up her experience. My own experience in writing this thesis, for example, is a process of constantly integrating my emotions and feelings into a coherent understanding of the application of Whitehead's philosophy, particularly to outdoor education.

The third kind of relationship is ecosystemic, which refers to "the dynamics and interdependence of all parts of an ecosystem" (Priest, 1986, p.14). The dynamics Priest refers to are several: first, trophic dynamics, or the process of energy and nutrient transfer between organisms. For instance, when a cow eats grass, energy and nutrients are transmitted from the

plants to the cow. Second, community dynamics comprise the success of an ecosystem in restoring balance: when a rain forest heals after a forest fire, for example. The concept of interdependence refers to the dependent and supportive relationship in an ecosystem, such as that between flowers which depend upon honeybees for survival.

Priest's ecosystemic relationships, especially the concept of interdependence, are consistent with Whitehead's concept of internal relations. Priest understands the importance of dependent and supportive relationships in nature, and recognizes that the loss of one natural entity (or organism) threatens the survival of others. Whitehead explains this interdependence in terms of a complex of internal relations. He writes, for example, about the internal relations among the various species sustaining the Brazilian rainforest as follows:

The trees in a Brazilian forest depend upon the association of various species of organisms, each of which is mutually dependent on the other species. A single tree by itself is dependent upon all the adverse chances of shifting circumstances. The wind stunts it; variations in temperature check its foliage; the rains denude its soil; its leaves are blown away and are lost for the purpose of fertilization...[I]n nature the normal way in which trees flourish is by their association in a forest. Each tree may lose something of its individual perfection of growth, but they mutually assist each other in preserving the conditions for survival. The soil is preserved and shaded; and the microbes necessary for its fertility are neither scorched, nor frozen, nor washed away. A forest is the triumph of the organization of mutually dependent species (1925/1953, p.206).

The species in a Brazilian forest are mutually supportive, finding their full expression in terms of their internal relationship with one another. Besides the variations in climate, precipitation, and

soil conditions, a tree is dependent on several animal species for its survival. For example, Brazil nut trees rely on the agouti, a ground-dwelling rodent, for seed dispersal. While the agouti eats some of the seeds, it also scatters them across the forest by burying caches far away from the parent tree. For pollination, Brazil nut trees are dependent on a particular species of bees, called Euglossine orchid bees. Without these large-bodied bees, Brazil nut reproduction is not possible. In turn, a tree loses its leaves for the purpose of fertilization, and loses its nutrients in order to support other species. The myriad worms, ants, fungi around the tree's roots, and the mosses, lichens, and some unnamable species on its trunk and branches, help it to absorb water and nutrients from the air, and use it as a platform on which to live. Whitehead sees cooperation as more fundamental than competition, because the loss of any one species from the ecosystem may weaken the chances of survival of another. The loss of an organism that links many other species together can cause a significant disruption in the functioning of the entire system. Thus, a forest is a successful process of coordination, since all interdependent species work together toward constructing and maintaining a mutually beneficial environment for survival.

Fourth, Priest's account of ekistic relationships refers to the interaction between humans and their surroundings (1986, p.14). Gray-Donald and Selby (2008) argue that "the view of the human relationship with nature offered within environmental education is primarily anthropocentric (human-centered) and instrumental, i.e. the valuing of nature is based upon the perceived usefulness of a species or ecosystem in promoting the needs and well-being of humankind and human society" (p.4). Whitehead provides a quite different philosophical framework with which to understand the relationships between human beings and nature. It is the bodily feelings at the core of our experience which connect us with nature through a process in which subject and object are internally related. For Whitehead, bodily feelings are the core of

human experience, flowing from the objective pole (a perceived entity) to the subjective pole (a perceiver) in such a way as to “provide a fluid connection between the world and the subject’s experience” (Woodhouse, 1995, pp.354-355). The fluidity in the interconnections between nature and human beings does not negate the “individual characters” of any of the organisms which are thereby related (Whitehead, 1938, p.150; Woodhouse, 1995, p.361). This is because the creative process of becoming allows for diversity as well as for unity in experience in the realization of value (Whitehead, 1929/1957a, pp.25-26).

If outdoor education were to incorporate Whitehead’s concept of internal relations, it would enable students and teachers to become aware of their intimate connections with others, themselves and all living and nonliving entities through the bodily feelings at the core of their experience. Such a process would enhance their appreciation of the value of the natural world. In the following section, I explain what Whitehead means by value and how it relates to outdoor education.

## **5. Wisdom, Value and the Art of Life**

For Whitehead, value is intimately connected with the growth of wisdom in human beings:

Now wisdom is the way in which knowledge is held. It concerns the handling of knowledge, its selection for the determination of relevant issues, its employment to add value to our immediate experience. This mastery of knowledge, which is wisdom, is the most intimate freedom obtainable (1929/1957b, p.30).

Wisdom is important for several reasons. It alone is capable of guiding knowledge in ways that enable students to determine which issues are relevant to the purposes they are trying to achieve. In this process, the value of their experience is increased by deepening and broadening an understanding of their relationship with the world and a realization of this most important kind of freedom. Wisdom, as a process which enhances the value of experience, is most likely to occur in the cycle of generalization, when “knowledge [is] so handled as to transform every phase of immediate experience” (1929/1957b, p.32). In the process, “knowledge shrinks as wisdom grows: for details are swallowed up in principles ... [since] the habit of the active utilization of well-understood principles is the final possession of wisdom” (1929/1957b, p.37). Wisdom, then, converts knowledge so as to achieve the most valuable kind of freedom available, namely the ability to utilize well tested principles to achieve one’s goals in the “active adventure of thought” (1929/1957b, p.37). The result is “learning [which] is lighted up with imagination” (1929/1957b, p.97), capable of affording “adventures of thought, adventures of passionate feeling, adventures of aesthetic experience” (1925/1953, p.207).

Wisdom, as the aim of education, also involves what Whitehead calls the art of life:

Education [he writes] is the guidance of the individual towards a comprehension of the art of life; and by the art of life I mean the most complete achievement of varied activity expressing the potentialities of that living creature in the face of its actual environment (1929/1957b, p.39).

Understanding the art of life requires an active wisdom relentlessly “battling with the immediate experiences of life” (Whitehead, 1929/1957b, p.37), and it “relates the potential of each human being to the continuing immediacy of their actual environment” (Regnier, 1995, p.393). The process of growth that culminates in reaching our full potential enriches our understanding of

how we are connected to the world, and enables us to appreciate the value of this interrelatedness. For Whitehead, however, the art of life refers to far more than the activity of human beings. Every entity, from subatomic particles to plants to higher mammals, can reach its potential given the right circumstances. The selves we humans become are deeply connected with life in all its diversity, and it is wisdom, as the comprehension of the art of life, which enables us to recognize this baseline of our existence.

Value, then, is to be found in all organisms. Whitehead explains this feature of the universe in *Science and the Modern World*:

An organism is the realization of a definite shape of value. The emergence of some actual value depends on limitation which excludes neutralizing cross-lights. Thus an event is a matter of fact which by reason of its limitation is a value for itself; but by reason of its very nature it also requires the whole universe in order to be itself (1925/1953, p.194).

This passage deserves careful attention. Each organism, he argues, realizes its own value by excluding other potentialities and limiting its actuality to the particular value which it is becoming. This process involves a series of events in which an organism emerges as a fact in the world on the basis of its own specific limitations and its unique value. In order for the process to be fully realized, however, the organism depends upon the rest of the universe to which it is related. Nothing less than the “ ‘creative advance’ ” (1929/1957a, p.26) of the universe comprises “the intrinsic worth of the environment” (1929/1953, p.196) in the context of which an organism achieves its distinctive value. For example, when I saw the cherry blossoms in bloom in China, they were emerging into actuality and adding value to both their experience and mine. For the

cherry trees, the realization of value was “the apprehension of other entities in relation to [themselves]” (Woodhouse, 1995, p.349), including the wind, soil, and other species living around them amounting to the “intrinsic worth of the environment.” During this process, I experienced a feeling similar to the joy shared with old friends in celebrating the cherry blossoms’ achievements, and a living connection was established between them and me. Both the cherry trees and I shared a “primitive experience [which] is emotional feeling, felt in its relevance to a world beyond” (Whitehead, 1929/1957a, p.189).

In general, emotions and the bodily feelings at the core of experience “provide concrete ways in which human beings can appreciate the value of the world around them” (Woodhouse, 1995, p.347). Only when students recognize the ways in which bodily feelings connect them to the world can they begin to understand how to relate to it in constructive ways that increase the value of their experience.

## **6. Conclusion**

This thesis critically examines three different approaches to outdoor education. An example of each approach taken from China, Canada and the United States is analyzed and interpreted on the basis of Whitehead’s philosophy of education. First, I describe and analyze my own experience at Capital Normal University in Beijing as an example of a discipline-based approach to outdoor education. The outdoor component of a course on phenology focused on the investigation of cherry trees and was confined within this particular discipline. From a Whiteheadian perspective, this approach is not only limited by the mechanistic worldview at its base, but it restricted the freedom characterizing the cycle of romance by an overemphasis on subject matter. Second, I tell

the story of the Saskatoon Outdoor School, and use it as an example of an integrated approach to outdoor education which uses five subject areas in outdoor learning to enhance environmental and adventure education. However, the program is based upon a limited conception of students' aesthetic appreciation of the natural world, and lacks a theoretical framework which could entertain such a conception. Third, I analyze the concept of place-based education, and use the CO-SEED project as an example of a contemporary approach from the United States. By using the local community and environment as a primary source of learning, the project is a collaborative one, involving partnerships among schools, community-based learning centers, and other community organizations.

While place-based education is the most inclusive of the three approaches to outdoor education, I believe it would be strengthened by incorporating the following aspects of Whitehead's philosophy.

*A. An appreciation of the importance of the rhythmic cycles of growth*

The cycle of romance, which was evident in my own experience of the cherry trees, should be allowed to freely run its course. The freedom at the base of romance should not be cut off too soon by an emphasis on precision, which is likely to kill the "joy of discovery" (Whitehead, 1929/1957b, p.2) that typifies the learning of children, in particular. Nevertheless, the self-discipline which characterizes precision is necessary for learning the structures of all forms of knowledge, including the course on phenology I was taking. Precision is also a necessary condition for moving into the cycle of generalization in which one learns to apply abstract principles to concrete cases, including those in one's own experience. The three cycles overlap with one another, meaning that students can learn to classify different species in the outdoors as long as they enjoy the freedom to explore.

Throughout the entire process, however, place-based educators “should satisfy the itch of youth to be doing something” (1925/1953, p.198), and recognize that generalization is predicated upon an expansive freedom, which builds upon the insights of the other two cycles of growth.

***B. An understanding of the significance of internal relations***

Where entities, or organisms, are internally related, the character of all those in the relationship is changed. Internal relations occur in every aspect of life and should be recognized in their diversity by place-based educators. One example of the interdependence of natural species in the Brazilian rain forest is that of Brazil nut trees benefitting from the presence of the Euglossine orchid bees. In the process, the trees are transformed by the pollination of the bees which, in turn, require the presence of the trees to achieve their task. Human beings who experience love are also transformed in the course of such a relationship. Moreover, where we experience community a sense of trust in others can be strengthened, as was clear in both the Saskatoon Outdoor School and the CO-SEED project. Finally, the process of becoming a more integrated person with a stronger sense of identity can transform our relationship with ourselves. A change in the internal relations comprising our identity involves a broadening and deepening of our subjectivity, a shift in our relationship with our past and present experience, and a growth in the way we address the future (Cobb, 1998; Palmer, 1998).

***C. A recognition of wisdom and the art of life as integral parts of education***

Gaining wisdom is not the same as acquiring knowledge or information. Wisdom can guide the search for knowledge by enabling students to determine the issues relevant to their own goals. Wisdom allows for a richness of experience capable of deepening their

understanding of the world, enhancing the ways in which they learn to apply knowledge, and it provides them with a freedom of thought and sense of intellectual adventure. The culmination of this process of growth in wisdom is what Whitehead calls “a comprehension of the art of life” (1929/1957b, p.39), which comprises the full, diverse flourishing of the individual’s capacities in the context in which s/he finds herself. While all of these features of Whitehead’s philosophy of education are latent in place-based education, they should be made more explicit.

***D. An appreciation that value resides in the world***

Value is not simply a human construct, but an integral part of reality. In the previous section, I showed how Whitehead argues that all organisms embody value in the process of their emergent actuality, and how the full realization of their own specific value depends upon the entire universe as an environment to which they are related. One implication of this distinctive ontology, and value theory, for place-based educators is that every entity is alive and their value should be respected.<sup>4</sup> While students learn how greater complexity is distinctive of the higher mammals, including human beings, they should also learn of the continuity in nature, which connects humankind to other species (1933/1961, p.140). In order to strengthen their appreciation for the value inherent in nature, students need to recognize the beauty in “the radiance of the sunset” (1925/1953, p.199), in the “flashes of aesthetic insight [in] animal life,” and understand that “any part of experience can be beautiful” (1933/1961, pp.140,265) in the “stream ... which forms our life” (1929/1957a, p.3).

## Notes

1. Following the advice of Dr. Marcia McKenzie at my thesis proposal oral, I do not consider critical place-based education, which is a synthesis of critical theory and place-based education (Greenwood & McKenzie, 2009; McKenzie, 2009). This omission constitutes a delimitation of my thesis.
2. The Orion Society is a United States non-profit organization that engages environmental and cultural issues through publication of books, magazines, and educational materials, and facilitation of informational networks. It was founded in 1992 and is based in Great Barrington, Massachusetts.
3. In his earlier work, Selby failed to avoid the mechanistic materialism to which he now objects, see Woodhouse (1996).
4. Elsewhere, Whitehead asserts that life has three characteristics, of which the first is “self-enjoyment” in which “the data appropriated are provided by the antecedent functioning of the universe. Thus the occasion of experience is absolute in respect to its immediate self-enjoyment” (1938/1966, p.151). The second characteristic of life is “creative activity”, namely “the process of self-creation [which] is the transformation of the potential into the actual, and the fact of such transformation includes the immediacy of self-enjoyment” (1938/1966, p.151). And the third is “aim,” or “the exclusion of the boundless wealth of alternative potentiality, and the inclusion of that definite factor of novelty which constitutes the selected way of entertaining those data in that process of unification” (1938/1966, p.152).

## REFERENCES

- Archibald, K. (1997). *Outdoor school: An integrated outdoor/adventure education program for grade eleven students*. Unpublished M.Ed. Thesis, Department of Educational Foundations, University of Saskatchewan.
- Archibald, K. (2001). *Concept plan for out-of-school education*. Saskatoon Board of Education, Educational Services Department. Saskatoon, SK.
- Bowers, C. A. (1999). Changing the dominant cultural perspective in education. In Smith, G. and Williams, D. (Eds). *Ecological education in action: On weaving education, culture and the environment*. Albany: State University of New York Press.
- Brookes, A. (2004). *Can outdoor education be dispensed with? A critical review of some common rationales for outdoor education*. Paper presented at Connections and Disconnections: Examining the reality and rhetoric. International perspectives on outdoor education theory and practice, La Trobe University, Bendigo, Australia.
- Brown, M. (2002). The facilitator as gatekeeper: A critical analysis of social order in facilitation sessions. *Journal of Adventure Education and Outdoor Learning*, 2(2): 101-112.
- Capra, F. (1983). *The turning point: science, society, and the rising culture*. New York: Bantam Books.
- Carson, R. (1956). *The sense of wonder*. New York: Harper & Row.
- Clements, R. (2004). An investigation of the state of outdoor play. *Contemporary Issues in Early Childhood*, 5(1): 68-80.
- Cobb, J. (1998). Beyond Essays. *Interchange*, 29(1): 105-110.

CO-SEED project website. Retrieved Feb.20, 2010, from  
<http://www.antiochne.edu/anei/programs/coseed/>

Dewey, J. (1934/2005). *Art as experience*. New York: Berkley Publishing.

Dewey, J. (1938/1998). *Experience and education*. New York: Macmillan.

Dewey, J. (1976). *The child and the curriculum*. In Boydston, J. A. (Ed.). *The middle works of John Dewey*, vol. 2: 1902-03. Carbondale: Southern Illinois University Press.

Donaldson, G. E. and Donaldson, L. E. (1958). Outdoor education: A definition. *Journal of health, physical education and recreation*, 29 (17): 63.

Duffin, M. (2004). *An Evaluation of Project CO-SEED: 2003-2004 Final Report*. Program Evaluation and Educational Research (PEER) Associates, Inc.

Evans, Malcolm D. (1998). *Whitehead and philosophy of education: The seamless coat of learning*. Amsterdam: Rodopi.

Ford, M. (2002). *Beyond the modern university: Toward a constructive postmodern university*. Westport, Connecticut: Praeger.

Freire, P. (2000). *Pedagogy of the oppressed*. New York: Continuum.

Gray-Donald, J. & Selby, D. (2008). *Green frontiers: Environmental educators dancing away from the mechanism*. Rotterdam, The Netherlands: Sense Publishers.

Greenwood, D. A., & McKenzie, M. (2009). Context, experience, and the socioecological: Inquiries into practice. *Canadian Journal of Environmental Education*, 14, 5-14.

- Haggerty, B. & Mazer, S. (2008). *The phenology handbook*. University of California- Santa Barbara, Phenology Stewardship Program. Retrieved October 05, 2009, from <http://www.usanpn.org/?q=education>
- Hanna, G. (1992). Jumping deadfall: Overcoming barriers to implementing outdoor and environmental education. *Proceedings of the 20<sup>th</sup> Annual Conference of the Association for Experiential Education*. Boulder, CO: AEE.
- Harding, S. (2002) "What is deep ecology" Schumacher College. Retrieved April 14, 2010, from <http://www.schumachercollege.org.uk/articles/college-articles/stephan/whatisdeepecology.html>
- Hendley, B. P. (1986). *Dewey, Russell, Whitehead: Philosophers as educators*. Carbondale and Edwardsville: Southern Illinois University Press.
- Hu, Y. (2009). *Student oriented education for China: A Whiteheadian proposal*. Unpublished M.Ed. Thesis, Department of Educational Foundations, University of Saskatchewan.
- Hutchison, D. (1998). *Growing up green: Education for ecological renewal*. New York: Teachers College Press.
- IUCN (1970) International working meeting on environmental education in the school curriculum: Final report, September 1970. Gland, Switzerland: IUCN.
- Kals, E., Schumacher, D., & Montada, L. (1999). Emotional affinity towards nature as a motivational basis to protect nature. *Environment & Behaviour*, 31(2): 178-202.

- Knapp, C. (2000). Learning from an Out-door Education Hero: Personal Reflections about L. B. Sharp. *Taproot*, 12 (2): 7-11.
- Louv, R. (2005). *Last child in the woods*. Chapel Hill, NC: Algonquin Books.
- Loynes, C. (1998). Adventure in a Bun. *Journal of Experiential Education*, 21(1): 35-39.
- McKenzie, M. (2009). Scholarship as intervention: Critique, collaboration, and the research imagination. *Environmental Education Research*, 15(2), 217-226.
- MDNR & MDE (2009). Minnesota Department of Natural Resources and Minnesota Department of Education: Outdoor education legislative report, January 2009.
- Merchant, C. (1996). *Earthcare: Women and the environment*. New York: Routledge.
- Orr, D. (1992). *Ecological Literacy: Education and the transition to a postmodern world*. Albany: State University of New York Press.
- Orr, D. (1994). *Earth in mind: On education, environment, and the human prospect*. Washington, DC: Island Press.
- O'Sullivan, E. (1999). *Transformative learning: Educational vision for the 21<sup>st</sup> century*. Toronto: University of Toronto Press.
- Phenice, L. & Griffore, R. (2003). Young children and the natural world. *Contemporary Issues in Early Childhood*, 4(2): 167-178.
- Pinar, W. F. (2004). *What is Curriculum Theory?* Mahwah, N.J.: Lawrence Erlbaum.

- Priest, S. & Gass, M. (1997). *Effective leadership in adventure programming*. Champaign, IL: Human Kinetics.
- Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *The Journal of Environmental Education*, 17(3): 13-15.
- Regnier, R. (1995). Bridging Western and first nations thought: Balanced education in Whitehead's philosophy of organism and the sacred circle. *Interchange*, 26(4): 383-415.
- Regnier, R. (2007). Learning as Valuing: Toward a Whiteheadian Foundation for Curriculum Reform in China. (Papers of International Conference on Process Thinking & Curriculum Reform, 2007)
- Rickinson, M., Dillon, J., Teamey, K., Morris, M., Choi, M. Y., Sanders, D. & Benefield, P. (2004). *A review of research on outdoor learning*. Preston Montford, Shropshire: Field Studies Council. Retrieved Aug 5, 2009, from <http://www.field-studies-council.org/reports/nfer/index.aspx>
- Rowe, S. (1990). *Home place: Essays on ecology*. Edmonton : NeWest.
- Sharp, L. B. (1943). Outside the classroom. *The educational forum*, 7 (4): 363.
- Smith, G. & Williams, D. (1999). *Ecological education in action: On weaving education, culture and the environment*. Albany: State University of New York Press.
- Smith, G. (2002) Place-based education: Learning to be where we are. *Phi Delta Kappan* 83: 584-594.

Sobel, D. (1993). *Children's special places: Exploring the role of forts, dens, and bush houses in middle childhood*. Tucson, AZ: Zephyr Press.

Sobel, D. (1996). *Beyond Ecophobia: Reclaiming the Heart in Nature Education*. Great Barrington, Orion Society.

Sobel, D. (2004). *Place-based Education: Connecting Classrooms & Communities*. Orion Society. *Nature Literacy Series, No. 4*.

United Nation Declaration on the Rights of Indigenous Peoples. (2007). Retrieved Apr.27, 2010, from [http://issuu.com/karinzylsaw/docs/un\\_declaration\\_rights\\_indigenous\\_peoples?mode=embed&layout=http%3A%2F%2Fskin.issuu.com%2Fv%2Fdark%2Flayout.xml&showFlipBtn=true](http://issuu.com/karinzylsaw/docs/un_declaration_rights_indigenous_peoples?mode=embed&layout=http%3A%2F%2Fskin.issuu.com%2Fv%2Fdark%2Flayout.xml&showFlipBtn=true)

Whitehead, A.N. (1925/1953). *Science and the modern world*. New York: The Free Press.

Whitehead, A.N. (1926/1996). *Religion in the Making*. New York: Fordham University Press.

Whitehead, A.N. (1929/1957a). *Process and reality: An essay in cosmology*. New York: The Free Press.

Whitehead, A.N. (1929/1957b). *The aims of education*. New York: The Free Press.

Whitehead, A.N. (1933/1961). *Adventures of ideas*. New York. The Free Press.

Whitehead, A.N. (1938/1966). *Modes of thought*. New York: The Free Press.

Wilson, E. O. (1984). *Biophilia*. Cambridge: Harvard University Press.

- Wilson, R. (1993). *Fostering a sense of wonder during the early childhood years*. Columbus, OH: Greyden Press.
- Woodhouse, H. (1995). Towards a process theory of learning: Feeling the beauty of the world. *Interchange*, 26(4): 347-364.
- Woodhouse, H. (1996). Process philosophy and global education. In Griffith, B. & Benson, G.D. (Eds). *Process, epistemology and education: Recent scholarship in process philosophy*. Toronto. Canadian Scholars Press, 19-35.
- Woodhouse, J. & Kapp, C. (2000). Place-based curriculum and instruction: Outdoor and environmental education approaches. (ERIC Digest).
- Wu, Z. (2002). Green schools in China. *The Journal of Environmental Education*, 34(1): 21-25.