OUTDOOR EDUCATION: A DIALOGUE BETWEEN THEORY AND PRACTICE

AND IMPLEMENTATION SUGGESTIONS FOR
THE DISCOVERY 10 PROGRAM AT ST. GEORGE'S SCHOOL

by

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The field of outdoor education offers noble aims of making improvements in people's lives for the ultimate betterment of society (Hahn in Cousins, 2000). Yet, despite these lofty aims there is a general lack of clarity as to exactly what outcomes outdoor education is capable of achieving and by what processes these outcomes might be achieved.

Drawing on personal experience and a review of the literature, a program design model is used to collate data in four areas: personal/interpersonal development; environmental awareness, ethics and stewardship; academic improvement; and the acquisition of outdoor skills and physical fitness. An analysis of this data provides program recommendations and suggestions for implementation.

Specifically, this thesis examines the possibility of using the findings from theory and personal experience to inform the design of the Discovery 10 program at St. George's School. A number of factors relating to the transferability of findings to other programs are also considered.
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CHAPTER I Introduction

The field of outdoor education offers noble aims of making improvements in people's lives for the ultimate betterment of society (Hahn in Cousins, 2000). Yet, despite these lofty aims there is a general lack of clarity as to exactly what outcomes outdoor education is capable of achieving and by what processes these outcomes might be achieved.

Through a dialogue between personal experience and a review of the literature it becomes possible, with the use of a program design model, to make implementation suggestions. Specifically, this thesis examines the possibility of using the findings from theory and personal experience to inform the design of the Discovery 10 program at St. George's School. A number of factors relating to the transferability of findings to other programs are also considered.

Thesis layout

The thesis is divided into five chapters. The first examines the nature of the problem and offers insights into the author's personal context. Also included in the first chapter is background on St. George's School and the Discovery 10 program. This offers a sense of the type of program to which the findings are going to be applied. The second chapter examines what outcomes outdoor education is capable of achieving and the processes that are achieving these outcomes. This is done in the form of a dialogue between personal experience and a literature review. The third chapter looks at program planning models and theories that can be used to bridge the gap between the findings of chapter two and the reality of implementation. In chapter four the program design recommendations for Discovery 10 are presented and challenges to transferability considered. The final chapter offers a conclusion and potential areas for further research.
**What is the problem?**

Today's youth will form the social, political and economic fabric of tomorrow. Are we really doing everything in our power to help prepare them for their challenges ahead? In a money-obsessed world driven by greed, technology and the media, it seems to have become increasingly difficult for people to determine what is truly important to themselves, others, the planet and its other non-human inhabitants. For adolescents who are struggling to find their own identity and establish themselves as adults, the challenge to find meaning and establish values is increasingly complex. Young people are bombarded with millions of messages. Family, friends, teachers, coaches, television, radio, movies, computers, magazines, billboards and hundreds of other 'educators' all eagerly vying for influential status. Are the messages that adolescents are receiving preparing them to be the effective leaders of the future? Is the model of schooling that we are currently employing serving our students to the fullest potential? What could be done if we took a fresh look and began to reconceptualize the education of youth?

One possible answer might lie in the use of outdoor education. Taking students away from the chaos of our urban existence and into natural places allows for a 'time-out'. It provides a chance for youth to escape the powerful reaches of advertising driven media to a place where money has no immediate value and life's basic necessities of warmth, food, shelter, and water are suddenly of primal importance and relevance. During extended time away adolescents have the opportunity to look at themselves, their friends, teachers, family, and the world with fresh eyes. These are periods of renewal where students will hopefully learn skills and attitudes that they can apply back home in their chaotic lives. The promise of outdoor education lies in the premise that positive transferability can occur.

The challenge lies in designing effective experiences. What must these experiences look like to be effective? How long? What sorts of activities and destinations? How large should the groups be? What sort of skills do the leaders need? In what areas can we expect to see change? These questions and many more lie at the heart of the problem. How do we design the best possible experiences?
This thesis seeks to engage a dialogue between my own personal experiences as an outdoor educator and the wealth of knowledge that is available in the existing literature. By examining the literature within a personal and school-based context it will hopefully be possible to address the central question of this thesis: How can theory be used to create conceptual frameworks and, in turn, influence the design of actual programs? In answering this question it will hopefully be possible to construct a set of guiding principles that can be used to shape effective adolescent experiences. It is hoped that programs utilizing these findings will play a role in helping better prepare youth for the challenges that await them.

**Why I am interested in this problem**

I have always been a believer in the power of outdoor experiences. As a youth I enjoyed family camping experiences, was a member of Scouts Canada, and spent four weeks each year at summer camp. I never thought much about why I participated or what I valued in the experience but somehow it was just something I really liked. As a youth the most important thing seemed to be to maximize the "fun-factor" and outdoor experiences seemed to work. Canoeing, sailing, hiking, SCUBA diving and skiing all seemed to be ways of notching up the fun meter.

When I was fourteen I somewhat unintentionally discovered another powerful aspect of outdoor experiences. I had always wanted to go California, I loved cycling, I wasn't old enough to drive and a friend of the family had once cycled to California and said it was a great trip. It didn't take me long to put these pieces together and decide I too wanted to cycle to California. My friends' parents wouldn't let them join me on this 2000km journey so, undeterred, I decided to go alone. I had an incredible experience. There was some fun, as I hoped, but there were also a lot of enormous challenges. Staying motivated every day for three-weeks at age fourteen took a lot of soul searching. By the end of the journey I knew myself a lot better than I ever thought possible. More than anything I learnt to believe in myself and that there are few limitations to what I can achieve if I put my mind to something. This was a turning point in my life.
Over the years I continued to enjoy the outdoors and when I was seventeen I started volunteering as a Scout leader with a local troop. But, it wasn't until I was twenty-five that I again stumbled into my next big experience. I had been volunteering with an amazing group of Venturers (14-17 year old Scouts) over the previous two years and they decided that they wanted to take on something really challenging. They did some searching and found a Canadian Geographic article about a route in the Northwest Territories called the Canol. It was billed as, "the toughest trail in Canada." Perfect! The group started planning and a year later we were across the McKenzie River from Norman Wells with ridiculously heavy packs hoping to conquer this 350km route. We knew the distance would be challenging but it was the huge bridge-less rivers, which we had heard so much about, that we most feared. To make a long story short we completed the trail in twenty days but not without a number of occasions where our success looked extremely unlikely. By the end of the trip we had done more than succeed in completing the near impossible. We had dug deep in our souls. We had struggled through adversity as individuals and as a group. We had learnt things about each other and ourselves that seemed difficult to articulate. We celebrated the feeling of success at the end of the trail but we also knew deep down that we had somehow been changed by the experience. We returned home as new people.

It was not until about three years after the Canol experience that I began to understand some of what had happened on that trip. It was when one of the boys and I were discussing the trip in preparation for an interview with CBC radio that I began to see the big picture. As he described his experience, what he had learnt and how powerfully it had affected him that I began to understand. The trip had made an incredible lasting impact on both of us. The youth had experienced many of the revelations that I had experienced on my cycling trip at age fourteen. He had learnt that he was capable of things far greater than he had ever imagined. He had found a formula for success. His marks improved at school and his life seemed to be full of opportunity. I too found new clarity but I also saw how powerful an impact the trip had been on this young man's life. Knowing that I had been involved in realizing that opportunity was a wonderful feeling. I felt that I had contributed something significant and worthwhile to both him and society. It was after this experience that I made up my mind to enter the profession of teaching.
I returned to university after eight-years of being in the workforce and began to explore the theory behind education. I was thrilled to learn about the wisdom of helping people transform their lives. Specifically I learnt about applications relevant to Social Studies but I kept thinking about how the knowledge applied to outdoor settings. Whenever the opportunities arose I explored the connection between the outdoors and learning outcomes. It became clear to me that there were outcomes that go far beyond learning new skills and personal development. In particular I began to see the potential to use outdoor experiences to help students learn traditional school curriculum (social studies, geography, science, English and more). I also began to see the important role environmental education could play in preparing students for the future and the connection with outdoor experiences seemed to be quite striking. I began to research these academic and environmental connections and wrote papers and made presentations whenever the opportunity arose.

When I completed my teaching practicum I convinced my sponsoring teacher and administration to allow me to take my two classes of Geography 12 students on a three day field school. The students, my sponsoring teacher and the school administration all felt the experience was a huge success and I was convinced that outdoor experiences held the potential to create a lasting impact in several areas.

After graduating with a degree in education I quickly found a job that allowed me to continue using the outdoor setting to help youth explore their capabilities. I spent a year teaching Social Studies, English and Outdoor Education with an alternate program for at-risk youth. I quickly seized the opportunity to create an interdisciplinary program that addressed the personal needs of at-risk students and incorporated outdoor skills, academic skills and environmental awareness. The highlight of the year was an eight-day trip re-tracing the Cariboo gold rush to Barkerville. We visited native sites, old ghost towns, old growth forests and small-town British Columbia. We hiked, canoed, camped and explored at every opportunity. Many of the students had never been outside the Vancouver area and the experience challenged them in many ways. Living together with their classmates, in the wilderness, away from their familiar social peers and families was difficult. The trip was not easy for the teachers or the students but the learning was immense. The entire year was much like this trip: challenging yet full of amazing successes.
I loved my job at the alternate program and I knew I was on the right track integrating outdoor experiences into a school curriculum. It was also at this time that I began working on my master's degree. As I took courses and read I began to explore more of the theory that explained what I was seeing and feeling. It was almost a relief to know that other people were also exploring the same successes and challenges with youth outdoors.

During my first year of teaching I was presented with a unique opportunity. St. George's School, a private boys' school that I had attended for many years, expressed interest in having me head up their outdoor education program for grades one to twelve. It was a very difficult decision. I loved my position with the alternate program but I also knew that the private school presented a unique opportunity to design and implement a range of exciting programs. The private system would provide me with more freedom to implement exciting programs without the same funding and administrative constraints. I made up my mind and changed schools.

My first year was exciting and full of adventures. I tried existing programs, made some changes and implemented a few new ideas. At the outset I had it in the back of mind that a completely new all-year outdoor education program would be the ultimate way of manifesting the type of change I envisioned for youth. I imagined that given an entire year with students the possibilities were endless. I envisioned a program the formally integrated personal development, environmental, academic and outdoor skill outcomes. I began to explore the idea and, almost to my surprise, there was overwhelming support. Parents, teachers and administrators saw the potential value of a program at the grade-ten level that integrated outdoor education with the existing curriculum. Within months the idea was born and the program was to commence the upcoming September. Students applied and were accepted in the preceding spring and I quickly began to shape the program. Objectives were outlined, trips were planned and advice was sought. But, mostly I depended on my past experiences to help shape what the program would look like. It was beneficial that at the time I was working on my masters. Despite the pressures on my time, my program of study also allowed me to continue researching the theory behind the type of program that I was trying to create. I learned as quickly as I could and the program was launched.
We have now completed our first year of Discovery 10. The students seem to have had an incredible experience, the parents are very supportive and the teachers and administration are more committed than ever. But, I know that I have only scratched the surface of the knowledge that could inform the design of the program. I keep wondering what we could be doing that would further enhance the students' experiences. I also wish I had more evidence to support this type of program when those who are not convinced ask tough questions. I know in my heart and soul that this type of program works. I know that if we can create experiences like my cycling trip to California or the hiking trip on the Canol Trail we will be doing our students and society a favour. I strongly believe that intensive outdoor experiences have the potential to guide students through their very challenging and formative adolescent years. In addition to personal and academic growth I see the potential to help students make sense of their place within a complex society. Through experiences away from the protected world of the traditional school students are meaningfully exposed to the natural world and the various cultural and social groups that inhabit it. Outdoor education has the potential to step students outside the constructs of our technologically obsessed, consumption driven world and rethink some of life's most important assumptions and questions. Providing these types of opportunities for students is exciting and offers hope for a world that will be led by enlightened and future-thinking environmental, social, political and economic leaders. This thesis is the opportunity to explore the theory and research that examines the challenges and successes of this exciting type of educational process.

**Methodology**

The basis of the methodology used in this thesis rests on two kinds of claims. The first is based on the findings of earlier research that has been conducted in the field of outdoor education. A large international body of collective knowledge exists that explores a range of issues and can offer insights into program design. The second claim is based upon my own personal experience as an outdoor educator. Through my personal experiences developing programs and working with youth in the field I believe I have a number of insights that offer suggestions for future program design. These two types of claims were utilized to test the
hypothesis that theory can be used to create conceptual frameworks and, in turn, influence the design of actual programs.

The data gathered from the literature review and my own personal experiences was used to develop five main stages in the methodology. The first stage included developing a four-part framework with which to organize and analyze a vast amount of data. This included identifying four areas: personal/interpersonal development; environmental awareness, ethics and stewardship; academic improvement; and outdoor skill and physical fitness acquisition. The second stage involved a comprehensive examination of the data that focussed on the ability of outdoor education to create outcomes and the processes by which those outcomes were generated. The outcomes and processes of stage two were divide according to the four areas identified in stage one. In the third stage, program-planning models were considered to bridge the gap from theory to implementation recommendations. The findings of the earlier stages were then used in stage four to generate program design recommendations within the specific context of the Discovery outdoor program at St. George's School. The fifth and final stage involved considering the limitations of this type of process and considering areas in which transferability might be challenged.

The following is a brief examination of how the literature review and personal experience were handled and how the four-part framework was developed.

**Literature review**

In searching the literature I used a range of approaches. This included exploring the journals of the main organizations that examine the fields of outdoor, experiential and environmental education; searching educational and other library databases and searching the internet. A particularly useful internet source was the web site of the University of New Hampshire which provided a wealth of valuable information. My search was further directed by the references of each study I read. Through this process I uncovered a vast amount of information. I then examined all the information and determined which was most similar to the Discovery program, was empirically sound and offered valuable insights.
There has been a considerable amount of research dedicated to the area of outdoor education around the world. Most of the research is being conducted by people who are actively engaged in the field and who approach the subject with a passion for proving that what their hearts are telling them is true. This can potentially result in weak research methodology that limits the validity of the findings or weakens the ability to transfer the findings to other programs. As an active practitioner, I too find it difficult to be objective in a field about which I am so passionate.

There is, however, enough breadth to the studies available that it would seem possible to make generalizations that are valid and appropriate. The available research falls into several categories. The first comprises case studies where specific aspects of an individual program are often considered. The second area involves studies that examine a larger number of programs with the goal of finding similarities that could indicate more generalized patterns. With this type of research we begin to see what impact a particular program might have had on an individual or group but we do not really know what the person would have been like had never participated. This lack of comparison suggests a need for further research. There is also the assumption that if base-line information is collected before an intervention then those are the same findings that one would expect to find at a later date without intervention. This could be a potentially faulty assumption. It is virtually impossible to isolate the impact of a particular program. Therefore even a noticeable change in findings might not be attributable to the intervention being studied. This is an area that will be explored in more detail in the thesis.

The third type of studies are meta-analyses that attempt to draw together the finding of a large number of studies. Where common results are found across a large number of studies there does appear to be more credibility. Meta-analyses are still, however, dependent on quality findings. If the findings of one or two studies are suspect the impact might not be significant. It is important that the majority of the studies used are empirically sound. In most cases the authors of meta-analyses uncover such problems with sample studies.

In searching the literature I was specifically interested in studies of programs that were as similar to the Discovery program as possible. Despite the existence of several somewhat
similar long-term adolescent-age outdoor education programs around the world, there is little specific literature in this area. It was necessary, therefore to look more broadly at the findings of programs designed for a range of ages, of varying duration and with often varying intended outcomes. It is the distinction between processes and outcome that also became a distinguishing factor in the findings. Most research examines whether or not outdoor programs are capable of achieving certain outcomes. This is largely based on the premise of proving that programs can in fact be effective. The second area involves looking at the processes by which outcomes are achieved. This is a much less common area of study but is extremely valuable for offering program design direction. This distinction between outcomes and processes became an important organizational tool in shaping the structure of this thesis.

In undertaking the literature review it is of considerable concern to ensure that the findings used are credible. In order to ensure that this thesis offers useful findings it is important that each study examined be considered for its reliability and suitability. Due to the extensive number of the studies examined it was not possible to comment extensively on the quality of the methodology for each study. Studies that were deemed methodologically unacceptable were not utilized. Many of the findings are based on meta-analyses which, despite being only as strong as the research they examine, at least offer breadth to the enterprise. Areas where there is a limited degree of research have been noted and recommendations have been made for further examinations.

**Personal experiences**

In addition to the literature review I feel my personal experiences also contribute to the body of knowledge. These experiences include working with a variety of youth over a fifteen-year period and working specifically with the students of St. George's School. I have tried, wherever possible, to include experiences working with the students of the Discovery program during its inaugural year. I believe these experiences are extremely valuable and complement the findings of the literature review. Not only do they add a valuable human balance to the literature they are drawn, for the most part, from working with this exact population within their context and structure.
Developing a framework

As I have explored the literature on outdoor education over the years I have found findings that support a variety of different outcome areas. There is, however, little consistency from one program to the next and from one study to another. For my own purposes I have found it valuable to attempt to categorize outcomes into a number of specific groupings. I have concluded that there are four outcome areas that are generally pursued by outdoor education: personal/interpersonal development, environmental awareness and stewardship, academic curriculum integration, and outdoor skill development and physical fitness. Some programs and studies address only one or two of these areas while others touch on all four. Using this framework as an organizational tool enables me to sort and analyze a vast range of data with implications for the design of future programs.

My only hesitation with this model is that it could be wrongly interpreted to suggest that outdoor education be divided into four separate areas of study. I disagree with this notion and suggest that the value of outdoor education lies in its ability to integrate these areas into a seamless educational experience. Similarly, I suggest that there is no universal hierarchy amongst these four factors that should be applied to all programs. For some programs it might be desirable to focus on one variable while another program focuses on another. In the same manner it may be valuable for some organizations to look at their programs in light of all the variables or only with one or two. Every situation is unique and each program requires individual consideration. What this framework does provide is an overview of the potential outcomes of outdoor education. The framework makes apparent the major contributions outdoor education can offer and provides a useful tool for program design and analysis. From my own experiences in the field and working with a large quantity of data from the literature, I have found the framework to be extremely useful.

Historical roots

Kurt Hahn, who later founded Outward Bound, was one of the early educators who began to see and utilize outdoor experiences for personal and interpersonal development. Hahn built upon the theories of the early philosophers as he sought to help improve society. Based upon Plato's Republic, Hahn believed that, "in a small group away from the degenerate ways
of the world, the individual student comes to grips with what must be done to create a just society” (Cousins, 2000, p. 42). Hahn sought to design challenges that allowed students to evolve for the betterment of society.

Hahn opened his first school, The Salem School in Schloss Salem, Germany in 1920. Due to war pressure he moved to Scotland in 1934 and opened Gordonstoun, which “became one of Britain’s most distinguished progressive schools and served as a model for similar schools in other countries” (Cousins, 2000, p. 40). Hahn believed that, “students should learn to discipline their own needs and desires for the good of society. They should realize through their own experience the connection between self-discovery and service. He also insisted that true learning required periods of silence and solitude as well as directed activity. Each day the students took a silent walk to commune with nature and revitalize their powers of reflection” (Cousins, p. 38). In 1941 Hahn created Outward Bound, a short-course that was designed to capture the key elements of his schools in order to, “strengthen the will of young men so they could prevail against adversity faced staggering losses at sea during World War II (Cousins p. 59). These courses went through an evolutionary process that saw the formation of the Outward Bound Trust in 1946. The popularity of Outward Bound grew through the next twenty-five years with programs appearing in countries around the world. The result is a series of programs world-wide that challenge people to be the best they can be.

The contribution of Kurt Hahn and Outward Bound is significant and paved the way for much of today's outdoor education. Probably most important was the fact that Kurt Hahn was an educator first. He believed in a type of schooling that maximized human learning potential and offered hope for improving society. Hahn did not view his programs as simply recreation; they were a means to improve the lives of individuals and maximize their contribution to society. Hahn's major contributions included recognizing the potential of direct experiences and the use of outdoor activities as a learning tool. Today, thousands of programs around the world use outdoor experiences to help further goals that are closely aligned with Hahn's original values.
Defining Experiential, Adventure, Outdoor and Environmental Education

Throughout the literature there are a number of terms with interrelated meanings. These include the terms experiential, adventure, outdoor and environmental education. It is worth examining the similarities and differences between these three terms to move effectively through the literature.

Experiential Education

Experiential education is based upon a process of learning "that makes conscious application of students' experiences" (Carver, 1996, p.9 in Martin, 2001). There are several ways of framing this concept but it is the underlying concept of learning through direct experiences that is the core dimension. In 1994 The Association for Experiential Education (AEE) issued the following definition: "Experiential education is a process through which a learner constructs knowledge, skill and value from direct experiences" (Luckmann, 1996, p. 7). It is important to note that this approach to education is unrelated to the content being learned. It is, for example, equally valid to learn math experientially as environmental or personal concepts. Similarly, the type of environment in which the learning is taking place (classroom, schoolyard, park or wilderness) is not dictated. The AEE also offers a set of 'principles of experiential education practice' that offer further insights into the scope of this type of learning (Luckman, 1996, p. 7).

- The priority or order in which each professional places these principles may vary.
- Experiential learning occurs when carefully chosen experiences are supported by reflection, critical analysis and synthesis.
- Experiences are structured to require the learner to take initiative, make decisions, and be accountable for the results.
- Throughout the experiential learning process, the learner is actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, and constructing meaning.
- Learners are engaged intellectually, emotionally, socially, soulfully, and/or physically. This involvement produces a perception that the learning task is authentic.
- The results of the learning are personal and perform the basis of future experience and learning.
- Relationships are developed and nurtured: learner to self, learner to others, and learners to the world at large.
- Because the outcomes of experience cannot be totally predicted, the educator and learner may experience success, failure, adventure, risk-taking and uncertainty.
- Opportunities are nurtured for learners and educators to explore and examine their own values.
- The educators primary roles include setting suitable experiences, posing problems, setting boundaries, supporting learners, insuring physical and emotional safety, and facilitating the learning process.
- The educator recognizes and encourages spontaneous opportunities for learning.
- Educators strive to be aware of their biases, judgements, and pre-conceptions and how they influence the learner.
- The design of the learning experience includes the possibility to learn from natural consequences, mistakes and successes.

The term 'experiential education' is not interchangeable with the terms adventure or outdoor education but it does shape their practice. Effective adventure/outdoor education is usually conducted in a manner that is consistent with the above principles.

**Adventure and Outdoor Education**

There are many similarities between adventure and outdoor education. A number of authors have explored the relationship between these two concepts (Martin, 2001; Higgins & Loynes, 1996; MacArthur, 1975; Ewert, 1980) and have found more similarities than differences. The use of the word education is the most significant aspect and differentiates from programs that focus on more recreational ends. The word 'adventure' centers on the use of challenge with the possibility of uncertain outcomes (Ewert, 1980). Outdoor education, it
has been suggested, is most commonly associated with an 'out of classroom' curriculum subject for schools (Gair, 1997 and Higgins & Humberstone, 1999 in Martin 2001). It is, perhaps, this school-based association and the direct connection to the outdoors (after all one can conduct adventurous activities in the school gym) that makes the term 'outdoor education' preferable for my uses. The terms are definitely interrelated and perhaps the best term of all would be 'outdoor adventure education'. To avoid this rather long title the two terms are generally considered interchangeable for practical purposes. Various authors tend to use the term with which they are most familiar and within this thesis both terms appear in various quotations. In the context of programs at St. George's school I prefer to use the term "outdoor education".

**Environmental Education**

The term 'environmental education', "in its broadest sense, encompasses teaching about the quality and quantity of all aspects of the environment" (Ford, 1981, p. 2 in Martin, 2001). This broad approach is supported by Orr (1992) and Courtenay-Hall (1997) who argue that all education is environmental education. By what is explicitly taught and what is omitted, all education teaches students something about the environment and their relationship to it. Based on this belief it could be deduced that outdoor and adventure education are part of the larger environmental whole. While I do not disagree with this approach I think it is more useful, for the purpose of this thesis, to consider environmental education as one outcome area that can be addressed by outdoor education. By putting environmental education in this context it is possible to see that outcomes relating to the natural environment are often intertwined with other outcomes. My four-part framework suggests the inter-relatedness of personal/interpersonal, environmental, academic and outdoor skills as outcome areas. This model allows me to closely examine environmental education and consider how outdoor educational processes can be utilized to improve students understanding of, and appreciation for, the environment. The second section of chapter two deals specifically with environmental outcomes and processes within the outdoor education context.
**The St. George's Context**

**St. George’s School**

Founded in 1930, St. George's is an all boys school located on the west side of Vancouver. The school’s academics are focused on university preparation but the offering of a “well rounded” education is also explicitly stated. Sports, music, drama, outdoor education and a range of extra-curricular activities are offered to assist in this regard. The school is recognized as one of the most academically successful schools Canada with over ninety-five percent of students continuing on to university. Presently the school has an enrollment of approximately 1200 students in grades 1-12. Entrance exams and substantial tuition fees limit enrollment to proven academics with substantial financial backing. There are a range of scholarships and bursaries available to assist worthy candidates in need of financial assistance but the large majority of students are from economically “well-off” families. Nearly one hundred percent of students pursue post secondary education and many students continue to become economic and political leaders in the community.

**Outdoor Education**

The school’s outdoor education history is almost as old as the school. What originally began as Cadets and then a Scouting program eventually evolved into a mandatory program most grades. When I arrived at the school in September 2000, there program in place for students in grades 5-10. During my first year I expanded the program to include grades 1-4 and developed an outdoor leadership course for students in grades eleven and twelve. Programs range from day trips in the primary grades to six-day expeditions at the older age levels. At the grade ten level students have a choice of either enrolling in the Discovery program or taking the regular academic program. All non-Discovery students participate in a five to six day wilderness expedition.

**Overview of Discovery Program**

Discovery 10 is an integrated outdoor education program at St. George’s School. The program is limited to twenty-two students who form a cohort group for the duration of the
school year. By having students in a cohort group, teachers are able to schedule around out-trips and conduct catch-up blocks when students are in school. The group takes all their academic subjects (Math, Science, English, and Socials) together. The cohort group is disbanded for one language class and one elective class. Out-trips during the year range from two to eight days and cover a range of outdoor activities. The academic year ends with exams during the last week of May, allowing students to participate in an extended expedition-style trip during the month of June. Over the course of the year students participate in approximately forty-five days of overnight out-trips and fifteen days of day trips.
CHAPTER II Theory and Practice

This chapter utilizes my four-part framework to examine the possible outcomes that can be achieved with outdoor education and the processes by which the outcomes may be most effectively realized. Each of the four areas of personal/interpersonal development; environmental awareness ethics and stewardship; academic curriculum integration; and outdoor skills and physical fitness development are considered. The findings from the international literature are introduced and complimented by my own personal experiences working in the field with the Discovery 10 program at St. George's School. Though more data is available in the personal/interpersonal and environmental areas no particular hierarchy is suggested amongst the first three framework areas. The development of outdoor skills and physical fitness, however, is considered a secondary benefit derived from the use of outdoor education to achieve the first three sets of outcomes.

1. PERSONAL AND INTERPERSONAL DEVELOPMENT

It was the last day of the last trip of the year. We had traveled 180 kilometers by kayak from Vancouver Island, through dozens of islands and up the coast of the mainland to a point just south of Cape Caution. Over the preceding sixteen days the group had explored an area of incredible natural beauty and seen first-hand this rugged coastal area that was once occupied by numerous first nations villages. In addition to completing a journey of distance the students had also taken the time to learn a great deal about the area, themselves and each other. It was a great journey and an amazing way to culminate an incredible year of adventures. On this last day the focus was to debrief and put closure on both the trip and the year. As we sat, in a circle, with Queen Charlotte Sound at our side, we each shared the significance of the year. As we went around the circle it was clear that each person had changed as a result of the experience. The students had grown and matured in ways that they themselves saw.

The most moving part of the experience was a ceremony of thanks. Each person was, one at a time, thanked by the remaining members of the group for something special that they had
brought to the experience. Each boy was thanked and then given a bead that had been worn and kept safe by another group member for the entire journey. By the end of the ceremony each boy’s necklace consisted of one bead from each person and a metal whale’s tale pendant in memory of the area. The comments by the boys gave me goose bumps. These boys knew each other so well that their insights were both insightful and validating. To hear fifteen and sixteen year old boys thank each other for their commitment, leadership, humour, friendship, assistance, dedication, thoughtfulness, caring and more was so moving. The boys often struggled to receive the thanks of their peers. How often, I wondered, had they ever heard these words and been acknowledged for who they are and what an important contribution they make? In particular, had they ever been so profoundly thanked by their own peers? There was little doubt in my mind that the year had been a success.

Experiencing this type of process with students is both powerful and convincing. With a year-long program it is possible to see students change first-hand. In adolescent development a year is a long period of time that provides an opportunity to see dramatic change. This window of opportunity is not, however, limited to teachers. Parents often remark in awe at the change they have seen in their boys. I have had mothers hug me with tears in their eye as they thank me for the changes I have helped facilitate. Boys who were once reclusive and shy are suddenly confident and outgoing and those who were confident to the point of arrogance are now appreciative, empathetic, and considerate of others. Similarly teachers and counselors comment on the differences these experiences have made in the lives of the participants. There are no quantifiable numbers to support these claims. There are no reliable control groups to suggest what these boys would have been like without these experiences. And, there are no test scores that directly measure this type of change. These findings are much more qualitative and personal. It is the comments around the campfire, the smile from a boy who has spent his life in emotional pain, a humorous comment during a difficult crossing, the unexpected gifts of thanks, a willingness to ask for help or to share a family tragedy. It is the subtle moments that often go beyond the quantifiable and affect the spirit within that tells me that this is worthwhile. It is coming home and missing the students that tells me that I still care. And, in knowing that I care, I am energized to do it all again. This is the spark that drives me and motivates me to dig deep and do the type of teaching I do.
Personal and interpersonal outcomes are among the most common objectives of outdoor programming. It is believed by many that in the out of doors it is possible to assist people in their quest for personal betterment and their ability to be positively contributing member of society and a better citizen. In reviewing the literature it becomes clearer that there is both quantitative and qualitative evidence to support my personal experiences. The literature suggests both the types of outcomes we might expect to result from outdoor education programming and an evaluation of the degree to which these outcomes are being achieved. Though less well studied, there is also a body of literature that begins to shed light on the types of processes that might be resulting in personal and interpersonal outcomes. This literature review both outcomes and the causal processes.

**Personal and interpersonal outcomes**

In examining personal and interpersonal outcomes it is important to consider both what measures we are examining and the degree to which positive outcomes are being achieved. Some of the most useful tools in examining outcomes are meta-analysis studies. These studies combine the results of many different studies into a single overview study. The three major meta-analyses examined in this thesis combine to represent the impact of programs on over 12,000 participants (Neill & Richards, 1998). The variables considered by these major studies provide insights into the area of personal and interpersonal outcomes. In addition to the meta-analyses studies, the work on a Life Effectiveness Questionnaire also offers insights into the types of outcomes programs might be achieving.

**Establishing outcome measures**

One of the major challenges is trying to come to grips with what outcomes we are trying to measure when we consider whether or not a student’s personal and interpersonal skills have “improved” or not. Parents and counselors sometimes refer to self-confidence, initiative taking, cooperation, and leadership. But what do they really mean and how do we know if they are taking place?
In reviewing numerous studies, the authors of the meta-analyses are able to offer some consensus on what it is we are trying to examine. Appendix A offers a number of definitions of terminology frequently used in the discussion of personal and interpersonal outcomes.

Cason and Gillis (1994), in their review of 43 studies determined seven notable outcome measures.

- Self-concept
- Behavioral assessment by others
- Attitude surveys
- Locus of control
- Clinical scales
- Grades
- School attendance

Hattie, Marsh, Neill and Richards (1997) reviewed 97 studies in their meta-analysis and created six categories with the associated descriptions.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Conscientiousness, Decision making, Leadership, Organizational ability, Time management, Values, Goals</td>
</tr>
<tr>
<td>Self-concept</td>
<td>Physical ability/appearance, Peer relations, General, Academic, Confidence, Self Efficacy, Family, Self Understanding, Well being, Independence</td>
</tr>
<tr>
<td>Academic</td>
<td>Mathematics, Reading Grade Point Average, Problem solving</td>
</tr>
<tr>
<td>Personality</td>
<td>Femininity/masculinity, Achievement motivation, Emotional stability, Aggression, Assertiveness, Locus of Control, Maturity, Neurosis reduction</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Cooperation, Interpersonal Communication, Social Competence, Behavior, Relating Skills, Recidivism</td>
</tr>
<tr>
<td>Adventurous</td>
<td>Challengeness, Flexibility, Physical fitness, Environmental awareness</td>
</tr>
</tbody>
</table>

Table 1: Outcome Measures from Hattie Marsh, Neil and Richards (1997)
Hans (2000) conducted a similar meta-analysis of 24 studies but hypothesized that overall self-concept may be too broad a concept to describe changes and, instead, focused on Locus of Control, “a personality construct that assesses how people attribute their success and failure outcomes” (Hans, 2000, p. 3).

Barrett and Greenaway (1995) also conducted a review of research into The Role and Value of Outdoor Adventure in Young People’s Personal and Social Development. In looking at youth at risk they considered:

- Reducing recidivism
- Enhancing positive self-concept
- Improving self-efficacy
- Improving social development
- Encouraging responsibility
- Improving internalization of locus of control
- Improving constructive use of leisure
- Enhancing participant/staff relations

In the 1970’s Garry Richards, the Director of Outward Bound Australia began to research, “the elusive ‘essence’ of Outward Bound’s impact on students” (Neill, 2000, p.3). This work evolved into the development of the “Life Effectiveness Questionnaire” (LEQ). This tool has been used to assess a wide number of programs both within and outside of Outward Bound and also offers insights into a method of characterizing possible outcomes. In developing the tool the five goals were to use strong psychometrics, make it short and simple, relevant to program aims, provide an assessment of competence and be sensitive to change (Neill, 2000, p.4). The LEQ’s eight scales provide insight into the areas where change most often lies:

<table>
<thead>
<tr>
<th>LEQ Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Management</td>
<td>Optimum use of time.</td>
</tr>
<tr>
<td>Social Competence</td>
<td>Personal confidence and ability in social interactions.</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>Motivated to achieve excellence and put the required effort into action to attain it.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Intellectual Flexibility</td>
<td>Adapt thinking and accommodate new information from changing conditions and different perspectives.</td>
</tr>
<tr>
<td>Task Leadership</td>
<td>Lead other people effectively when a task needs to be done and productivity is the primary requirement.</td>
</tr>
<tr>
<td>Emotional Control</td>
<td>Maintains emotional control when faced with potentially stressful situations.</td>
</tr>
<tr>
<td>Active Initiative</td>
<td>Likes to initiate action in new situations.</td>
</tr>
<tr>
<td>Self Confidence</td>
<td>Confidence in abilities and the success of actions.</td>
</tr>
</tbody>
</table>

Table 2: Outcome Measures from the Life Effectiveness Questionnaire (Neill, 2000, p. 12)

All of the meta-analyses and the LEQ share a great deal of similarities and are consistent with other individual studies (Crompton & Sellar, 1981; Gillis & Thomsen, 1998). In examining the outcomes of the studies it becomes clearer as to which items are most affected by adventure programming and should be most closely examined.

Outcome findings from meta-analysis studies

Cason and Gillis (1994) found that the average effect size of adventure programming with adolescents was 0.31. "This represents a 12.2% improvement for the average adolescent participating in an adventure program. Adolescents who participate are better off than 62% who do not participate (p. 46). The specific effect sizes were: self-concept 0.339, behavioral assessment by others 0.399, attitude surveys 0.457, locus of control 0.302, clinical scales 1.047, grades 0.609 and school attendance 0.469. Cason and Gillis caution, however, that due to the wide range of effect sizes and the types of studies being used drawing a singular quantitative conclusion could be erroneous. One summary worth noting is that longer programs and younger participants were linked to larger effect sizes. The study concluded that the wide range of populations in the studies and the even wider type of programs (details of which were mostly unknown) made drawing insightful conclusions problematic. The study does, however, offer insights into how we might measure and evaluate the outcomes of adventure programming. One interesting point is that the study did not find a
significant difference in outcomes between adjudicated (youth with criminal backgrounds in mandatory recovery programs) and other youth populations. This suggests that transferability of findings between adjudicated and non-adjudicated programs might be possible.

Hattie et al. (1997) generated an average effect size of 0.34 and noted that between the ends of the programs and follow-up assessments there were additional gains of .17. It also appears that the impact of programs is lasting. The authors noted that across the six categories of outcomes there was a common theme relating to self-control. High effects were noted with independence .47, confidence .33, self-efficacy .31, self-understanding .34, assertiveness .42, internal locus of control .30 and decision making .47. Hattie et al. suggest that, “adventure programs seem to be most effective at providing participants with a sense of self-regulation” (p. 70). Another interesting finding of the study is that not all programs create equal results. The longer Australian Outward Bound courses for adults had the highest effect (.51) and programs for school-aged students was .26. It is also noted in the study that is unclear what portions of programs have the highest level of effect. Are there specific activities or perhaps instructor attributes that are driving the results? It becomes clear that to simply say “adventure programming works” is too sweeping a generalization and we need to know much more about the individual programs and their outcomes.

Hans' (2000) meta-analysis for Locus of Control found an effect size of .38 and supports the suggestion that outdoor education can have a positive impact. Hans also suggests that two possible variables that act as moderators of locus of control effect size are program goal and daily duration. Therefore residential multi-day programs with therapeutic objectives are most likely to result in a positive impact.

In a summary of the three meta-analyses noted above, Neil and Richards (1998) attempt to draw a number of conclusions. They suggest that outdoor education does work and that “programs appear to have small to moderate effects on participants’ perceptions of their own qualities and capabilities” (p. 7). They were also impressed to discover the ability of programs to trigger an ongoing cycle of personal growth after the programs had ended. The conclusion that not all programs are equal was also stressed, as there were a range of
outcomes in all the studies. Clearly the less effective programs caused the average effect sizes to be reduced. The authors also suggest a few clues as to the psychological and social processes that lead to positive outcomes. Theses include: the operating organization's program design and facilitation, longer programs work better, adult programs are more effective than adolescent programs, and programs that use therapeutic principles to cater to the specific needs of individuals are more effective. The note on participant age is interesting and could be potentially misleading. One possible cause of the lower effect with adolescents is that many youth programs are for adjudicated youth who do not choose to participate. Most adults, in contrast, chose to partake in programs. It would be interesting, therefore, to compare adolescent programs where the youth chose to participate versus those where attendance was mandatory. Lastly, Neill and Richards (1998) suggest the need for programs to avoid become complacent with external average findings. They suggest the need for programs to evaluate themselves using reliable assessment methodology that both compares results externally with other programs and internally with outcomes assessed at a different time. It is only through this type of a ongoing evaluation that an individual program will know if their form of outdoor education is in fact working to its full potential.

**Personal and interpersonal processes**

Given that there are personal and interpersonal outcomes being achieved by outdoor programs it is useful to know more about what processes of those programs are achieving these results. By examining specific programs in detail it is possible to get beyond the generalizations of the meta-analyses and see some of the specifics of how results are being achieved. These findings will be particularly useful in the quest to make program design recommendations.

**Process findings of three specific case studies**

While the meta-analyses do provide an excellent overview of outdoor education as a whole, they are limited by the lack of detailed information that is known about the programs that formed the basis of the studies. This means that while we might know something is causing a desirable change, it is difficult to determine exactly what or why. Ideally one would examine a similar program with a similar population type (age, socio-economics, gender, etc)
and similar desired outcomes. It would then be much easier to see the impact of different variables such as activities, out-trips, destinations, instructor characteristics, etc..

Unfortunately, because most programs are unique or studies of similar programs are not available it is necessary to consider those that have the most in common. One can then try and determine whether or not transferability of findings is possible. Included in this thesis is a brief examination of Project K, New Zealand; Outward Bound, Western Canada; and a study that examines Outward Bound in both New Zealand and the Czech Republic. The Project K study was chosen because it works with a similar age group to the Discovery program and is long-term in duration. The Outward Bound studies were selected because they both offer interesting insights into some of the processes that can be used to generate positive outcomes. Although the Outward Bound programs focus primarily on adult participants they do examine a range of outcome areas that shed light on the potential of outdoor education. The study of Outward Bound, Western Canada did include a mix of youth and adult participants.

**Project K, New Zealand**

This study of Project K was conducted by Rachel F. Enkey, an independent consultant, between 1999 and 2001. The purpose of the study was to examine the effectiveness of the program, particularly for funding purposes. The study was not associated with a university but a reasonably well-developed methodology that included both quantitative and qualitative elements was employed. Though there were a number of small challenges with the study, overall it seems to offer credible findings that contribute to the field of study.

Established in 1995 by the North Shore Education Trust (Auckland), Project Koru (Project K) is an intervention program that seeks to build self-esteem and provide life-direction to at-risk 14-15 year old youth. “Project K aims to provide: accurate student identification, personal support to students, a range of tailored experiences over an extended period of time that will induce and cement positive behavioral changes, the development of personal skills and abilities, and a continuous assessment for program effectiveness” (Enkey, 2001, p. 10). The program is fourteen-months in duration and includes four fully planned and integrated stages – induction, wilderness, community and mentoring.
The induction phase is a community-based period in which the students meet the people they will be working with and are introduced to the framework of the program. This is then followed by a three-week Wilderness Adventure that takes students away from their normal home environment. The first ten days is residentially based and includes a range of activities and experiences that focus on communication, achievement of pre-set goals, teamwork, problem solving and time management. Activities include hiking, kayaking and preparing for a longer journey of 7-10 days. “The students are encouraged to look at their own personal achievement and learning to internalize change and replace old negative perceptions with more positive self-perceptions” (p. 11). The third phase, the Community Challenge, is non-residential and involves transferring the knowledge and skills found in the wilderness back to everyday life. “The students are encouraged to explore and set personal goals, explore their community, meet people of power and influence within the community, organize trips for themselves, discover more about their personal strengths and learn planning and motivational techniques” (P.11). The fourth stage is a twelve-month mentoring period. Each student is matched with an adult mentor who has graduated from a mentor training course. Mentors meet with a mentor coordinator on a regular basis and works with the student to set and realize goals. Each student is required to complete at least one goal before they are eligible to graduate from the program.

Enkey’s study (2001) set about determining the effectiveness of Project K over a three-year period. Over the course of the study 137 students participated in the program and 126 students participated in a control group. There was an almost even mix of males and females in both the participant and control groups. A variety of measurement tools were employed to gather data. These included Harter’s Self Perception Profile for Adolescents, Coppersmith’s Self- esteem Inventory, a questionnaire, fitness data and school absentee data. Through a variety of statistical techniques the author determined that Project K students improved in self-esteem significantly over the control group and that the students, teachers and parents/caregivers all noted improvements in the students’ relationships, behavior at school and home and the use of their potential. One interesting finding of the study was that only students who fell into the “below average” category of self-esteem before the intervention benefited from the program. This might suggest that students who
are already motivated do not benefit from a mentoring type of program. It is, furthermore, suggested that the mentoring programming is a key part of the Project K program that makes it successful. The study suggests the importance of students connecting with adults, especially those outside their immediate family and school. The key appears to be in the ability of the mentor to build a relationship of ‘friend’ with the mentee that allows for the construction of a relationship based on trust and respect. Within this type of relationship the student is able to share honestly and work on constructing a positive self-image.

While the success of the Project K program may or may not be directly applicable to the Discovery program, it does raise several interesting points. A long term program can be very effective with the right population. It is possible to construct a program that has multiple phases of which outdoor education might only be one part. Mentoring can be a very valuable tool for assisting students with low self-esteem build their view of self and work on specifics such as goal setting. The findings on the characteristics of effective mentors could also be potentially valuable to outdoor leaders as they work with an adolescent population. The ability to build a friend-like relationship based on trust and respect could be a valuable tool. The idea of mentor training and support could also be adapted to the field of outdoor education. The professional support and education of instructors could potentially assist in offering a higher level of programming for a range of youth.

**Outward Bound, Western Canada**

This study of Outward Bound was conducted by Marcia McKenzie in 1999 in partial fulfillment of a Masters of Education degree at Brock University. The main purpose of the study was to examine the processes employed by Outward Bound in generating program outcomes. The study was an interpretive case study and included a mix of quantitative and qualitative approaches. The study included approximately 160 participants with a response rate of approximately 50%. A mix of student and instructor responses offer balance to the findings which appear to be both credible and insightful. McKenzie is an instructor with Outward Bound, Western Canada and is currently working on her Doctorate at Simon Fraser University.
Outward Bound Western Canada (OBWC) is part of the much larger international organization that strives to provide outdoor education experiences for a wide range of populations. The goals of OBWC involve providing wilderness programs that promote, "self-reliance, care and respect for others, responsibility to the community, and concern for the environment" (Outward Bound Canada, 1999, p.1 in McKenzie, 2000b, p. 1). This is consistent with the mission statements of Outward Bound International (1999, in Martin, 2001, p. 3):

Outward Bound is a non-profit educational organization created to stimulate personal development and generate understanding between people. This is achieved by impelling them out of familiar environments and setting new challenges through safe but demanding adventure experiences, which inspire responsibility, self-reliance, teamwork, confidence and community service.

Outward Bound was one of the organizations that Hattie et al. (1997) found, in their meta-analysis, to offer programs with a high level of effect on personal/interpersonal outcomes. Their study examined Outward Bound Australia but it might be reasonable to assume that, due to international standards, OBWC could be offering a similar level of programming. In the study of OBWC McKenzie sought to determine what factors caused these types of outcomes. The study examined 98 participants with a combination of quantitative and qualitative instruments and determined that there were, "certain course components that were most influential in determining increases to students' self-awareness, self-confidence, self-reliance, self-esteem, self-concept, motivation self responsibility, interpersonal skills, concern for others and concern for the environment" (McKenzie, 2000b, abstract). McKenzie found that five groupings of factors contribute to course outcomes. These include course activities, the physical environment, instructors, the group and students' characteristics (McKenzie, 2000b).

With the course activities it was determined that the activities themselves were less important than the, "qualities they embody" (McKenzie, 2000b, p. 131). The qualities of being challenged, learning new skills and achieving success were found to be the most important elements leading to increases in students' self-concept and motivation. McKenzie
also notes that different types of activities challenge in different ways and impact on different aspects of self-concept. "While backpacking increases students' self-concept by increasing their confidence in their ability to overcome challenges, having leadership responsibilities increases students' confidence in their leadership abilities" (p. 132). One activity that received particular attention was the one to three day solo which appeared to be particularly successful in developing self-awareness.

The physical environment was also noted as having a positive impact on course outcomes. The unfamiliarity of the environment and unpleasant weather both provided a level of challenge that increased outcomes. Most notable in the findings was the use of wilderness areas and the ability of those places to “help students feel, invigorated, alive, and peaceful” (McKenzie, 2000b, p. 132).

Instructors were also found to strongly influence course outcomes. It was noted that, in addition to competency in technical skills, instructors needed to be well organized and have good problem-solving and decision making skills. They also needed to be able to provide suitable feedback and be appropriate role models. A study by Hendy (1975) adds further light to McKenzie's observations and indicates that being reserved, bright, dominant, tender-minded, imaginative, forthright, experimenting and creative can be positive personality traits. McKenzie also found that biographical factors including experience, age, education, number of siblings, travel experience and gender could play a role but the findings were not conclusive in this area.

The impact of the group was also found to offer a positive impact on course outcomes. In the OBWC courses students were together for 7-36 days and this led to the development of conflict, interdependency, and friendships. An ideal group size of 7-15 was noted as this is, large enough for diversity and conflict, and yet small enough to avoid cliques and enable conflict resolution” (McKenzie, 2000b, p. 23). This suggests that while not all groups remain clique-free, there is a point at which groups are either too large or too small to work effectively. While some challenging interrelationships were noted to lead to negative outcomes, for the majority, the group experience enhanced the outcomes relating to interpersonal skills and concern for others.
The last group of factors involved the influence of various student characteristics on course outcomes. This study found that females, older students and two specific course populations ('female survivors of abuse' and 'youth at risk') were more affected by certain course components. Specific findings in this area were not noted but it was suggested that group characteristics can play a role.

In summary, McKenzie’s study does suggest that courses such as those offered by OBWC are leading to positive outcomes for participants. Improvements in self-concept, motivation and inter-personal skills are particularly notable and appear to be driven by aspects of course activities, the physical environment, the influence of the group, the instructors, and the characteristics of the students. In designing any program it is clearly important to consider all five of these areas.

**Outward Bound New Zealand (OBNZ) and Czech Republic (OBCZ)**

This study was conducted by Andrew Martin in partial fulfillment of the degree of Doctor of Philosophy in management at Massey University in New Zealand. Martin’s background is in mathematics and computer science. He taught at the middle school age before lecturing at the university level. He became involved in teaching Outdoor Recreation Management due to his interest in management process. This case study involved a mix of quantitative and qualitative approaches and represents a carefully structured methodology. This appears to be a well-crafted study that offers many insights into the outcomes of two quite different types of Outward Bound courses and the processes by which these outcomes are achieved.

In a study of Outward Bound programs in both New Zealand and the Czech republic Martin (2001) also sought to try and determine whether or not outcomes were being achieved and, more specifically, what processes were driving the outcomes. The study was conducted in three parts. The first included investigating the 22-day and 9-day courses in New Zealand. This consisted of a series of mainly physical outdoor challenges. The second part included investigating an Intertouch course for international participants in the Czech republic. This course offered a different approach and 'dramaturgy', a course design that utilizes a wide
range of social, physical, creative and reflective games. The third part of the study was a trial of the Czech-style Intertech course in Australia. This review shall consider the first two phases of the study.

The New Zealand 22-day and 9-day courses were quite similar to those offered by Outward Bound Western Canada. The 22-day course included a training phase and a bush walk (hike) followed by a number of challenging outdoor activities such as sailing, kayaking, rock climbing and a ropes course. The course also included a 3-day solo and a community service project. Other components of the course included (Outward Bound New Zealand 1994 in Martin, 2001, p. 95):

- The student: Motivated and committed;
- The physical environment: unique, familiar and contrasting;
- Social environment: Allowed individuality and group consciousness; conflict and resolution;
- Challenges and problem solving tasks: Organize and incremental, drawing on mental, physical and emotional resources;
- Competency and mastery: The participant was motivated, alert in a new environment, had group and instructor support;
- Transfer: Increased self awareness, self esteem, and acceptance of others.

The OBNZ Annual Report (1996a, p. 1 in Martin, 2001, p. 96) also offered the following ways in which the courses seek to add value:

- Teamwork teaches the benefits of synergy, learning to achieve more by working together
- Leadership shows how to strengthen teams from within, how to inspire from the front, how to coach team members and when to shift leadership styles
- Adaptability is needed when facing new situations and working with diverse groups
- Accountability is important when setting goals and objectives
Self-management is improved by being independent, responsible and making a positive contribution to society.

The findings from the New Zealand courses indicated that participants perceived that the main objectives of the courses were personal-development and pushing personal limits. A more secondary objective related to inter-personal development. The findings of the study found that personal and inter-personal growth did take place and continued at least six-months after the course. There was, however, a lack of statistical change for self-concept. The driving educational processes were concluded to be the instructors and the atmosphere of the course. A positive and supportive atmosphere and instructors that focused on safety and solid facilitation were seen as key (Martin, 2001, p. 139).

The Czech Intertouch course is very different from the more traditional Outward Bound courses offered by OBWC, OBNZ and most other Outward Bound centers. Intertouch goes beyond outdoor challenged-based programming and integrates a host of experiential education techniques in a well-crafted and tightly presented fashion. ‘Dramaturgy’ means ‘the art of theatrical production’ (Martin, 2001, p. 148) and incorporates a number of ideas from the theatre. The ‘dramaturgy’ is a method used to plan, select, and then order the individual programs with the goal of maximizing the final course effects” (Holec, 1994a in Martin, 2001, p. 148).

A course can be compared to a big, several days long theater play, where everybody is an actor and a viewer at the same time. This ‘theatre play’ is run according to a prior prepared screenplay, but it changes according to events at the course itself (Outward Bound Czech Republic, 1999a, in Martin, 2001, p. 148).

Dramaturgy involves five stages of development. The first includes the development of a theme. The second, the development of a scenario, planning the time, logistics, locations, people, etc. Third, the practical dramaturgy, where programs and activities are developed. The fourth, the completion of the scenario, where tasks are assigned, rules decided and final plans made. And, the final stage, the dramaturgy on the course, where instructors adapt to the needs of the participants, the environment and other factors that dictate adjustment of
the original plan. This is a complex, long and exhausting process that Martin notes is one of the major drawbacks of dramaturgy.

The actual activities of a dramaturgy program can vary greatly from one course to another but often include music, drama, poetry, games, reflective sessions and other methods. Despite the term "dramaturgy" not all activities are drama-related. Activities are designed to be holistic and embrace a range of senses and emotions.

Intertouch is residentially based and does include a number of more traditional activities (orienteering, solos, physical activity) but it spends more time developing activities that directly address the courses prescribed objectives. Martin suggests that the Intertouch courses build on previously accepted practices of adventure programming. In the more traditional model theorists (Schoel, Prouty, & Radcliffe 1988 and Rawson, 1991 in Martin, 2002) suggest the use of an 'adventure wave' that begins with a briefing that helps prepare the participants. This is then followed by the activities and events, which form the 'peak experiences'. Following the events is a reflecting, analyzing and accounting stage that is debriefed.

This cycle then repeats and the learning experience continues. This is the basic model used by many adventure and outdoor education program and forms the basis of the reflective learning methodology. The Intertouch course creates a revised model of the 'adventure wave' by adding a number of additional 'waves'. The 'dramaturgy' wave includes four waves that are intertwined. These represent the social, physical, creative and emotional/reflection wave. As the course unfolds and various activities take place, each of these four waves adds to the holistic experience. "The intertwining of the waves is important in maintaining the holistic balance of intensity and rhythm during the course, for example, physically demanding games with periods of quiet and reflection (Martin, Leberman & Neill, 2002, p. 200). The activities that are selected, adapted or created for a particular course seek to ensure this holistic balance and include mentally and physically challenging activities that require problem solving, co-operation, communication, reflection, creativity and other multi-sensory interaction (Martin et al., 2002).
Wilderness is not a key component of the Intertouch courses and Krouwel (1994, in Martin, 2001, p. 152) suggests that this type of course might offer a new and valuable approach for educators:

The Czechs have much to teach us about how to use the outdoors and related experiential training in ways from which many who have been doing it much longer could learn. Experiential training is not just an outdoor option. These days the outdoors is quite ‘old hat’ to many people, and at least leavening of other challenges, especially ‘real ones’, can only help personal and team development.

Martin’s study of the Intertouch course indicates that participants identified personal and interpersonal development as the main objectives of the course. The main course outcomes related to aspects of personal development, in particular life direction, self-confidence and self-awareness. Interpersonal development was also seen as important with relationship building and friendships with other course participants. Environmental awareness was not a noted outcome. The key processes that were seen to create these outcomes was the course design. The holistic ‘dramaturgy’ approach that included social, physical, creative and reflective activities was seen as highly effective. Facilitation by the instructors and interaction of group participants were also noted as important. Participants indicated these factors strongly six-months after the course but after two years the impact seemed substantially reduced.

In summary, Martin’s study provides valuable insights into two very different approaches to Outward Bound programming. Martin’s mixed method of participant observations, questionnaires, written responses and interviews permitted him to synthesize findings from both the New Zealand and Czech programs. His findings include the following. Firstly, outcomes relating to personal and interpersonal development were being achieved. In particular improvements in self-confidence and better inter-personal relationships were noted. Secondly, the five key factors that seemed to be driving the outcomes were: “a holistic approach to course design, integrating a variety of activities that included reflection; the learning environment, which is safe and creates a positive and supportive atmosphere; the range of instructor facilitation methods and a diverse group of participants” (Martin,
2001, p.ii). All of these elements offer valuable insights into program design and offer the potential to be building blocks for highly effective programs.

In studying the findings of Martin (2001) and the dramaturgy experience, Martin, Leberman and Neill (2002) reflect upon the significance of the Czech methodology. They recognize that this approach challenges the idea of front-loading that has been accepted by many (Priest and Gass, 1993) and moves towards a new approach in programming. Dramaturgy recognizes the importance of a holistic approach that puts emphasis on planning and experimentation and pays careful attention to educational process (Hattie et al, 1997; McKenzie, 2000; and Nichols, 2000). Martin et al. endorse the dramaturgy approach as offering a carefully developed methodology which is highlighted by the 'dramaturgy wave'. They suggest that, "dramaturgy has implications for the design of both personal and professional development programs" (Martin et al., p. 204). They conclude that these, "findings support the observations of Krouwel (1994 & 2000 in Martin, 2001) that the Czech way offers a more holistic challenge than traditional OB outdoor approaches and provides the next generation of effective experiential programs to meet the needs of society today" (Martin, 2001, p. 204).

Other process findings in the literature

The specific studies included above do cover many of the findings in the literature but there are a few important points that have not been included. The following also inform the outcomes and processes of personal and interpersonal development.

The Use of Challenge and Dissonance

Probably the most important aspect of outdoor education is the use of challenge as a learning tool. Through the use of challenging activities and/or environments students are put in a situation in which the certainty of the outcome is not guaranteed. Either due to the nature of the activity or the environment being traveled in, there is usually a sense among the participants that a successful outcome may not occur. Bad weather, poor route finding, rough water, impassable mountains, dangerous animals, uncooperative group members, poor leadership and a host of other factors either singly or in combination suggest to the
psyche of the participants that there is a possibility of failure. This failure could result in having to turn around and retreat, starvation in the mountains or potential injury or death. Mortlock (1973 in Hopkins and Putnam, 1993) suggests:

Adventure is a state of mind that begins with feelings of uncertainty about the outcome of a journey and always ends with feelings of enjoyment, satisfaction, or elation about the successful completion of that journey...

The initial feeling of uncertainty of outcome is fear of physical or psychological harm. There can be no adventure in Outdoor Pursuit without this fear in the mind of the participant. Without the fear there would be no challenge. Fear extended to terror, however, is not adventure. This is misadventure as the journey is psychologically too demanding for the person.

Clearly there is a fine line between enough of a sense of adventure to create a reasonable amount of fear and the point at which there is reasonable possibility of physical or mental harm. The use of fear is a thorny issue that raises a number of ethical concerns (Ewert, 1989). The level of fear that is reasonable for an instructor to put a student under is neither clear nor an easily quantifiable entity. Similarly, in a given group of ten students each person will have a different level of fear about a given challenging situation. This might be in part due to varying levels of skill (competence) or it may be due to their context and the way they view the situation. Regardless, it is important for instructors to be as aware as possible of their students and their various levels of physical and emotional anxiety.

A reason for placing students in unfamiliar and challenging situations is to create a sense of 'adaptive dissonance'. This refers to the gap between the way things are perceived by a learner and the way a learner would like them to be.

Humans like harmony and generally will seek to change a currently less desirable situation into a more desirable one. By taking action to create change and by reflecting on the effectiveness of associated actions, the participant can learn
valuable lessons. In the case of adventure experiences, the lessons are often about individual behavior, group behavior, or the environment (Priest & Gass, 1997).

This gap between the way a student sees the situation and how they want to perceive is created by the correct use of challenging situations. The student at the edge of a rock rappelling activity often faces this dissonance squarely in the eye. On one hand they know that the ropes and anchors are safe but on the other they are overwhelmed by a sense of fear of death should they back over the edge of the precipice. In overcoming the dissonance the student will likely convince themselves that the safe message is more reasonable and will continue down the face. The sense of relief and excitement in relieving the dissonance will then likely provide an excellent place to talk with the student about the experience and other places in their life where fears hold them back from achieving desirable results.

Neill and Dias (in press) suggest two other terms for the use of challenging situations: 'development-by-challenge' and the psychological term, 'stress-inoculation'. In their study of an Outward Bound program they found that students' resilience, a psychological quality that allows a person to respond effectively to life's challenges, increased noticeably as a result of participating in a challenging 22-day program. Their study also found a strong connection between the level of social-support participants felt they received from the other group members and the degree to which their resilience increased. In other words, if participants felt there were members of the group who were not supporting them then they were less likely to show high increases in resilience themselves. The implications of this finding are twofold. First, the social support of other group members is important and second, if there are group members who are perceived as not supporting they need to be addressed directly and in a timely manner.

The use of challenge to create adaptive dissonance and in turn affect positive change on participants is clearly of pivotal importance. Yet, it is also a complex area that is fraught with ethical challenges and the need to deal with the specific needs and contexts of individual group members. This is further complicated by the interrelated role that all the group members play on one another as they individually seek changes in resilience. The result is that instructors need to be highly aware of the type of challenges they select, how
the various members of the group are coping with the challenges and whether or not the members are adequately supporting the other members of the group.

**The Use of Rituals**

There have been a number of papers written on the use of rituals in outdoor education. This fits with the experiential nature of outdoor education and is consistent with the findings of Martin (2001) that programming should be more holistic. In many cases, the use of ritual has included the adoption of practices from other cultures for learning purposes. In North America this has often involved using traditional native practices for non-native programs. This idea seemed to have evolved from summer camp programs that used native names for their camps and buildings, paddled war canoes, conducted sweat lodges and ran activities where campers were divided into different tribes. While these practices might have been entertaining or even perceived to be culturally enlightening they usually did little more than entrench existing notions of what native culture entailed. There have been several articles written about the borrowing of native culture and the general message is that it is not to be practiced by groups outside the native community (Oles, 1992; Horwood, 1994). Clearly to expropriate a ritual and use it outside its cultural context is inappropriate.

The use, however, of rituals can go far beyond expropriation and can be a valuable tool in experiential education. There are existing rituals within most cultures that can be utilized and many opportunities to create new rituals that are both powerful and meaningful. Oles (1992) suggests that it is possible to use activities, such as sweats, solos and quests, that have been traditionally used by natives as long as they are not couched in, "language or metaphorical contexts that cause them to appear to be something they could never be" (p.22). Horwood (1994) expands on Oles' ideas and suggests that ceremonies and rituals allow people to express themselves and connect with others in ways that go beyond words. Horwood suggests there are many practices that can be adapted from ones own cultural background or it is possible to create new ceremonies. Rights of passage ceremonies (Venable, 1997), solos, evening debriefs, sweats, morning swims, gift giving, poetry events, summit songs and many more ideas can be used to offer significant impact to experiences.
Solos are used by many programs as an important period of reflection. McKenzie (2000) found that solos were one of the most effective activities in the programming at Outward Bound Western Canada. I have used solos on many of my own programs with an equally high level of success. Students always report that the experience was very meaningful and offered them powerful insights into their own personality and life direction.

Sweats have also been studied as a powerful method of group therapy. Colmant and Merta (1999) conducted a study with at-risk aboriginal boys. A sweat is usually conducted in an outdoor sauna-like structure in which water is poured over rocks that have been heated in a fire. This process is common to many Scandinavian and native cultures and results in intense heat that affects both the body and mind. After a series of sweats the boys in the study found it to be a positive experience and that they were able to share personal concerns and receive assistance with problem solving. Increases in self-esteem were also noted in a number of the participants. Unlike many adventure programs where the facilitation occurs after the activity, with a sweat the facilitators work with the participants while they are enduring the heat. "This provided the opportunity for the therapist and other group members to better enter into an individual's psychology while they struggled" (Colmant and Merta, 1999, p. 26). Again my own experiences concur. We often send small groups of students to work with a native interpreter in the Stein Valley near Lytton, British Columbia. Amongst several of the ceremonies he chooses to share with our students is a sweat. It is remarkable the sharing that takes place within the confines of that small structure. Students often share very personal thoughts and receive thanks or guidance that they might not normally be willing to accept.

There are many ceremonies such as the solo and the sweat that can be an integral part of a holistic approach to outdoor education. Whether the ceremonies are culturally sensitive and appropriate adaptations or completely new creations they offer the possibility of building positive personal and interpersonal outcomes.

One method of using European based culture to create holistic connections within an experiential learning experience could involve the use of archetypal patterns found in literature. Lee (1997) develops the work of Joseph Campbell (1949) to compare the
patterns of archetypes depicted in mythological quests with the stages and trials of adventure participants. Lee suggests that,

the basic pattern of separation, times of trials, and return to community in heroic adventures is reinterpreted in terms of the adventure program as leaving a safe place (home, school, community) to face strange trials (weather, getting lost, group conflicts, anaphylactic shock) and returning home with a sense of personal growth (maturity and confidence). The role of the outdoor leader is similar to the guide in an epic adventure who shows the way; gives instruction, tools and encouragement; and allows the hero to accomplish his goals by himself. (Abstract)

Activities can be developed within this context by building structures and rituals that develop the archetypal connections. Lee examines contemporary notions of rites of passage and suggests ways in which the various stages of the adventure can be maximized. He also offers concrete ideas of how leaders who understand this relationship can make conscious use of rituals and the sharing of stories. Lee suggest rituals within the daily routine can focus on the way we wake-up, the serving of food, the evening debrief and the way we say good night. Ceremonies could take the form of the 'chow circle' where everyone holds hands before a meal and shares their thoughts or the talking stick which the group has created and is passed around during a the evening reflection session. Particular key points in the experience can also provide points for celebration: the beginning, the summiting of a peak, the crossing of a river, the visiting of a special site, the solo, or the final farewell ceremony. Rituals could include a ceremonial leaving behind of an article at the start of a trip to represent a new beginning or the accepting or making of a gift as a memento of everything learned in an experience. Lee emphasizes that it is not so much the type of activity but rather the time taken, the resources used and attitude that give a ritual its power. Lee also cautions that it is important not to adopt the rituals that are culturally inappropriate and warns against getting carried away and end up creating a cult. If properly used, however, rituals that are derived from archetypal patterns can have a positive influence on the personal experiences of the participants.
Spirituality and Wilderness

This sudden splash into pure wilderness –baptism in Nature’s warm heart –how utterly happy it made us! Nature streaming into us, wooingly teaching her wonderful glowing lessons, so unlike the dismal grammar ashes and cinders so long thrashed into us. Here without knowing it we still were at school; every wild lesson a love lesson, not whipped but charmed into us. (John Muir, 1912/1965, p. 52 in Knowles, 1992, p. 6).

Muir eloquently captures the very special impact that wilderness can have on the individual. Though difficult to pinpoint, wilderness somehow offers an opportunity for revitalization and rejuvenation of the inner spirit. Wilderness is a place where we can re-charge our inner batteries and learn or re-learn many of life’s important lessons.

Spirituality, like rituals can be an important part of a holistic outdoor education experience. When talking about spirituality it is important to clarify that I am not referring to organized religion. That is not to say that organized religion can’t play a role in outdoor education but it is a different type of approach that is more applicable for some individuals than for others. In this context spirituality refers to a special connection that people often have with the earth during an outdoor experience. There is something magical that often happens in wilderness places that creates a level of harmony and connection that might not be found in other settings. McKenzie found that the use of wilderness settings led participants to an increased sense of personal awareness and a feeling of being alive, real and peaceful (2000, p. 81). One participant in McKenzie’s study noted that “[t]he wilderness gets you back in touch with what is important to you. Civilization has too many advantages and too many artificial things that we put in place to build barriers between people. But the wilderness just strips that all away” (p. 81).

The study by Barret and Greenaway (1995) found similar findings about the natural environment and a spiritual connection. Several studies examined supported this finding and The Alister Hardy Centre (1987, in Barret and Greenaway) suggests that most young people
aged 15-16 in the UK recognize spiritual outcomes of this kind. Of 6,000 youth in this age range, 80% of youth claimed to have an experience similar to this one:

I remember one evening standing by the sea. The sun was setting, the tide was going out, leaving little streams and pools of water, and wet sand. There was a marvelous feeling of light and peace all round me. I felt a great joy [and] also a strong desire to find meaning and purpose in life. A little later I remember feeling the same when I was sitting on a hillside and looking out over the spreading green countryside. It was beautiful and also strange: you feel you are somehow part of a mysterious whole. (reported by Hannan, 1991; quoted in Barrett and Greenaway, p. 27)

This type of spiritual connection is not uncommon and is something that many youth write about in assignments and journals or mention during debriefs and other reflective sessions. Cooper (1998) and Knowles (1992) both speak to the important spiritual aspect of wilderness and recount impressive stories of magical experiences. In recounting his experience in taking students on a nighttime canoe trip in New Zealand Knowles refers to 'geopity' a term that “connotes action and notions of responsiveness towards a place that is regarded as sacred. It refers to a person’s special attachment and reverence for particular places or locations in the environment” (1992, p. 9). Knowles explains the power of his experience: “On the tributary of Lake Karipero, and for the first time in my teaching career the meaning of my teaching mission became clear. In my mind, and in the minds of several students, a sacred place was established. It was the site of a special event, a place, if you will, at which individuals united with the power of Nature” (p. 8). Clearly wilderness does have a significant impact on youth and it allows them to see themselves within a much larger realm of existence. This sense of identity seems to play an important role in helping youth make sense of the world and appears to help them strengthen their own self-concept. The use of wilderness places is a powerful ally that allows the outdoor educator to help students positively build their personality.
Student/Teacher Relationships

Several studies (Crompton & Sellar, 1981; Barrett and Greenway 1995) make mention of the potential of outdoor education to lead to an improved relationship between participants (students) and instructors (teachers). The relaxed atmosphere on trips often leads to students viewing teachers or other adults in a very different way than they might have in a more traditional institutional setting. Sharp (1968, in Crompton & Sellar, 1981) states that:

With the spirit of observing together and learning together comes a better relationship between student and teacher.... In the outdoor classroom the student stands beside the teacher; they are facing the same direction, looking towards the object under observation; they are partners in learning. Teachers who have given outdoor education a trial are quite emphatic in saying that it improves the chances for mutual trust and confidence. And they say, further, that when they go back into the indoor classroom with these same students, much of the stiffness has gone out of the educational process, to be replaced by a new kind of eagerness never before seen within those four walls.

Crompton and Sellar's (1981) study goes on to substantiate this type of statement with findings that suggest that 24-hour per day contact with a small group of students allows the teacher to get to know the needs and personalities of the students and likewise the students get to know the teachers. There was some contradictory evidence but it was based on short five-day programs.

Barrett and Greenaway (1995) also found results of measurable improvements to staff/student relationships when dealing with at-risk individuals. One of the studies reviewed (Bates, 1993 in Barrett & Greenaway, 1995) indicated youth had a higher tendency to 'trust', 'talk to' and 'listen to' staff during outdoor programs. They also found, however, that the benefits of enhanced relationships were only fully realized in programs that were of a significant duration (ie. longer than a few months). Long term programs allow for the building of relationships and the development of trust between participants and staff.
These findings on staff/participant relationships fully support my own experiences working with both at-risk and other youth. Extended time away from the school in an intense setting breaks down perceived barriers and leads to much higher level of trust and respect. Teachers see the real character of a student and likewise students usually have the opportunity to see beyond the mask of authority behind which teachers seem to exist. The result can, in my experience, be a very high level of honesty and mutual respect that I have never witnessed in the classroom setting. These experiences go a long way to assisting students to see teachers as trustworthy role-models. This type of relationship can be a powerful ally in helping students to build their self-confidence and learn to communicate effectively with others.

Fun
One area that seems under-researched as a desired outcome or a process to achieve that outcome is "fun". While fun may not seem to fall into the same category of personal and interpersonal development outcome, it is one of the most common goals students share when talking about their expectations for a trip or experience. While fun may seem trivial and secondary to our other objectives it is important to students, myself and many instructors. After all, who wants to return from a two week trip and say, 'we didn't have any fun.' I have talked about fun at length with students during de-briefs to try and tease out what determines if an experience is fun or not. It usually seems to relate to their interpersonal-experience with the group, a good group sense of humor and a high level of challenge (often involving some adrenaline inducing experience) in the activities. Thus, if fun is considered an outcome many of the processes described above would help determine how much fun a program was perceived as being.

Fun also seems to work as a process. When students are having fun they are engaged. If, for example, a lesson on communication is framed inside an activity that participants perceive as being fun then the learning will often be more effective. Most teachers know that if learning can be made fun it will be more effective. McKenzie, in her study of Outward Bound (2000b), considered fun as a quality of course activities that contribute to course outcomes. Participants in her study suggested that both 'fun' and 'humor' were important course components. Participants and instructors seemed to agree that fun increased student
interest and offered an increased level of motivation. Theory relating to ‘play’ also seems to support this finding and suggests that when people are aroused through stimulating and fun activities there is an increased positive tendency towards behavioral change (Ellis, 1973). In designing programs and activities it is important, therefore, to utilize fun to our advantage. If we can create opportunities in which participants feel that they are aroused and having fun then they are more likely to embrace positive personal and interpersonal growth.

**Summary of personal and interpersonal findings**

The findings of the research clearly support the type of personal and gut-based feelings that I experience with my students on a regular basis. Students do develop personally and interpersonally as a result of their participation in outdoor education programs. These outcomes are supported by findings of the meta-analyses by Cason and Gillis (1994), Hattie et al. (1997) and Hans (2000). The studies of Outward Bound (Martin, 2001 and McKenzie, 2000b) into processes also suggest that the outcomes relating to personal/interpersonal development are significant. This knowledge builds upon a variety of other studies with similar findings (Ewert, 1989; Gillet et al, 1991; Marsh, 2000; Crompton & Sellar, 1981). These findings are also supported by Barret and Greenaway (1995) who conducted an exhaustive literature review for the Foundation for Outdoor Adventure in the United Kingdom. Barret and Greenaway found that, despite problems with many of the studies they examined, there is evidence to support the hypothesis that outdoor education can make a significant difference in the lives of young people. While much of their study examined outcomes with at-risk youth they suggest that transference is likely possible to other populations. Exactly how personal and interpersonal growth is measured varies somewhat from study to study but there are definitely more similarities than differences. Some differences relate to terminology while others are concerned with which variables are better indicators of change. It is clearly very difficult to isolate variables and suggest which causes which. But, when looking at outcomes, it is important to look at the ability of a program to affect a participant’s view of themselves and their ability to interact with others. Based on this literature review and my own experiences it is reasonably safe to say that outdoor education leads to positive outcomes in how participants view themselves (self-efficacy, internalization of locus of control, self confidence, willingness to take initiative, etc) and how
they relate to others (leadership, communication, social competence, co-operation etc). The processes behind these outcomes are perhaps more difficult to distill.

The specific programs of Project K and Outward Bound (Western Canada, New Zealand and Czech Republic) begin to offer insights into the processes that make these outcomes happen. These include the following highlights:

- Longer programs may be most beneficial.
- Clear goals and objectives that relate to desired personal and interpersonal outcomes.
- Mentors may be effective when working with students with low self-esteem.
- The use of carefully planned activities that support objectives is important.
- The natural environment may be utilized to facilitate challenge and learning.
- The use of small groups that stay together maximizes learning effectiveness.
- Utilizing instructors with particular qualities, skills and training is important.
- The characteristics of the participants should include diversity.
- A holistic approach to course design, that integrates a variety of activities may be effective.
- The creation of a learning environment that is positive and supportive is critical.
- Utilizing a range of facilitation methods can be beneficial.
- The use of challenge and adaptive dissonance is fundamental.
- The incorporation of culturally sensitive rituals and ceremonies can be effective.
- Connecting experiences to literature and archetypal patterns can increase impact.
- The importance of fun.

This summary of processes can then be carried forward to help influence the design of programs.
2. ENVIRONMENTAL AWARENESS, ETHICS AND STEWARDSHIP

Four days into our first year of the Discovery program we took our students on their first trip of the year. This hike was designed to provide an opportunity for the students to get to know each other and the program staff, work on a number of low impact camping skills and be introduced to the concept of true wilderness. We invited John Clarke an active environmentalist and renowned mountaineer to join us on the trip. John is something of a legend in British Columbia climbing circles and has over six hundred first ascents to his name. He now runs the Wilderness Education Program where he tries to introduce students to the concept of wilderness and encourage them to develop a sense of appreciation for wild places. John usually presents a wonderful slide show to students and sometimes takes students on day hikes to a local wilderness area. Our three day program was something fairly unique for John and something he was quite excited about. We decided to take our students to an area above Sims Creek, a tributary of the Elaho River. Located approximately 200 kilometers north of Vancouver the Elaho and Sims watersheds have been the site of extensive environmental skirmishes over the past decade. Logging in the Sims is currently on-hold at the present as the logging company, native band and environmentalists seek to find a compromise.

Our group hiked up a trail that John had built and within minutes of leaving the logging road discovered what the battle was over. Towering forests of ancient cedar, hemlock and fir dwarfed our group as we hiked up the very steep trail. John paused the group and we sat and talked about the area and why he thought this area needed preserving. Biodiversity, Grizzly habitat and many other points were raised. It seemed unthinkable to clearcut an area of this grandeur. After a solid hike of several thousand vertical feet we reached our campsite at Bug Lake. The next day we continued another 2500 feet into the alpine. We lunched on the snowfields and looked down on the valleys below. To the northeast was the logging patchwork of the Elaho River valley and to the northwest was the untouched valley of Sims Creek. We talked more about the need for wood supply, houses and paper products. We looked at the marshes and the avalanche slopes and wondered about the Grizzly habitat and the quality and quantity of wood. We talked about the future and the sustainability of our
current practices. The students questioned John’s expertise and struggled to find solutions that would answer our wood consumption needs without destroying wilderness areas. As we returned to the valley on the third day it was clear that the students understood the difficulty in answering tough questions and the need to make personal choices based on their own ethics.

Two months after our visit to the Sims we went for a site visit to the plant of Interfor Wood Products. As part of a large systems-study that the students complete we visit range of facilities that either provide inputs to the school or manage our outputs. Visits include the recycling center, landfill, sewage treatment plant, hydro generating facility, sawmill, and water reservoir. The Interfor Plant we visited was a specialty mill that cut lumber of unusual dimensions for specific customers. Most of the work involves cutting very large timbers of high quality. This is the mill that specializes in cutting Interfor’s most prized old growth. Interfor is also the company that is logging in the Elaho and has licenses in the Sims Valley.

Our students were fascinated during our sawmill tour and were curious about the process of turning trees in to lumber. They wore hard hats, ear protection and safety vests and enjoyed checking out the big saws and other heavy equipment. After the tour we headed to the boardroom and met the chief forester responsible for sustainable logging practices, and two others responsible for the production and sales. After a PowerPoint presentation on sustainable practices and standards the students had lots of questions. They spent almost three hours questioning statistics, asking about biodiversity and bear habitat, talking about the shipment of raw logs offshore, and getting a handle on how Interfor’s plan for sustainable logging fit within their ethical context of wilderness and economics. By the end everyone was exhausted from the discussion. The students had asked dozens of important questions that clearly showed that they were beginning to understand the issues and were thinking about their own ethical stance. They were weighing out their experience with John Clarke with the words of the foresters and trying to re-formulate their own notions of wood consumption. The Interfor staff were amazed by the knowledge of the students and their interest in the subject and I was thrilled to see them so engaged. I do not know for sure whether or not the students changed their views or will alter their actions as a result of their two visits but I am confident
that they have the knowledge and willingness to ask highly informed questions. And, ultimately when they become the business and political leaders of tomorrow what more can I ask for than for them to ask tough questions and see whether or not the answers being proposed are ethically acceptable.

**Rationale: What are we trying to achieve?**

Any mention of environmental education raises a host of ethical questions and, in many cases, concerns. Questions of indoctrination and moral agenda are often voiced by individuals with preconceived notions about how the environment should be considered. In a school like St. George's, where many parents are heads of industries and take a rather instrumental approach towards the environment, environmental education can be perceived as suspect. It is important, therefore, to present environmental education in a forthright manner that clearly addresses concerns of “overly environmental” indoctrination. It must be made clear that the goal of this program's environmental education program is not to instill a particular set of values but rather to assist students in developing the mindset to ask insightful ethical questions relating to the human/environment relationship.

A great deal of work has been done in the field of environmental education to come to terms with why it is important, what lessons are most important to share with students, and how this process might take place. There are several themes that are important to explore before expanding into the use of outdoor education to achieve environmental education outcomes. These include the judgements that: potentially all education is environmental education, environmental education involves ethics, environmental education is worthwhile, and that there is a direct link between environmental/outdoor education and social justice.

**All education is environmental education**

Skeptics might question whether or not environmental education should be part of a grade ten education. Proponents of a particular view towards the environment could, for example, suggest that environmental education is attempting to implant a set of normative values that are different from their own. They might suggest that it would be better, and less controversial, if environmental education were left out of the school curriculum. The
problem with this thinking is that all education is environmental education. David Orr suggests that, "[b]y what is included or excluded, emphasized or ignored, students learn that they are part of or apart from the natural world. Through all education we inculcate the ideas of careful stewardship or carelessness" (1992, p.90). Pamela Courtenay Hall continues this thought, "all education involves environmental education, because all education either explores notions of human-nature interactions, or leaves prevailing notions unexplored or even unmentioned, hence quite likely reinforcing them via the implicit curriculum" (1997, p. 11). Given this perspective it seems far more ethically questionable to teach an implicit curriculum than to put significant environmental questions on the table where they are open for debate.

**Environmental education involves ethics**

Environmental education quickly becomes complicated and controversial because it is laden with judgements about actions and inactions that are perceived as either right or wrong. Each individual's relationship to the environment is built upon a foundation of attitudes that are extremely complex. Therefore any attempt at educating for or about the environment means addressing issues of environmental ethics. Clifford Knapp (1999, p. 5) summarizes that,

Environmental ethics is a branch of philosophy that questions how humans relate to nature more than how humans relate to other humans. By seeking answers to these questions, we investigate our moral conduct both as individuals and as communities. This form of inquiry views the planet as made up of interconnected human and non-human elements, processes, and systems and asks how all elements can live together in harmony. Behaving responsibly towards the Earth, some environmental ethicists believe, requires us to make sacrifices so all living things can exist under healthy and sustainable conditions. Such changes necessitate thinking about who we are in relation to others and developing systems of beliefs, attitudes, values, and principles to guide us as we live compatibly with the rest of the Earth's inhabitants.

Given the beliefs that all education is environmental education and all environmental education involves ethics it becomes clear that all students need to be exposed to the
concept of environmental ethics. Outdoor education is no exception and is perhaps, due to its connection with natural places, the ideal place to tackle these complex topics.

**Environmental education is worthwhile**

Clearly it is important that we, as educators, believe that environmental education is a worthwhile endeavor. Pamela Courtenay Hall (1997, p. 2) lays out her assumptions to include:

First, that the environmental problems of our time are serious. Second, that we all want children to be educated in ways that help them to be intelligent and responsible in their interactions with nature (though we might disagree wildly as to what this consists in). And third, that we all want (or should want) schooling to proceed in ways which are resistant to anyone's efforts or agenda to indoctrinate students.

Given these assumptions it is clear that we need an explicit and well-conceived environmental education curriculum. Given the seriousness of the problem and the consequence of its outcome on the planet can we afford to be complacent? The time has come to recognize that an environmental education curriculum is indeed necessary.

**Getting beyond sustainability**

There exists, in the literature of environmental education, an ongoing debate about whether or not environmental education should be framed in the context of “sustainability education”. The notion of sustainability is certainly enticing. The idea of human-environmental relationships that could exist indefinitely suggests exactly the type of balance that we, as environmental educators, so desperately seek. UNESCO and many national governments are keen to adopt the concept of sustainability as the focus of their environmental reform. This focus seems to offer a clearly mandated means of addressing a range of complex problems. But as Bob Jickling, an outspoken critic of sustainability education suggests, this approach might not be the panacea we are seeking. Jickling argues three main points: firstly, “we must recognize the educational limitations of education for sustainable development or sustainability” (1999, p. 2). Second, “we should seek to avoid the intellectual exclusivity
that such an agenda brings” (p. 2). And, lastly there are, “conceptual errors inherent in using sustainability as an aim” (p. 2). In developing his arguments he puts a strong emphasis on suggesting that education for sustainability involves implanting a normative set of values in students’ minds. This indoctrination, he suggests, goes counter to what we should be trying to achieve in environmental education (p. 2).

Jickling does confess that “sustainability is a useful term” (1999, p. 4) but that we need to get beyond its limitations. He continues:

We need to speak more confidently about assumptions, lifestyles, worldviews, and conceptions of human place and purpose in eco-systems. We need to talk about cultural, spiritual, and aesthetic values, and not try to subsume these ideas beneath inadequate labels and limited conceptualizations. And, we must find space to discuss cultural identities, respect, society-nature relationships, tensions between intrinsic and instrumental values and other ideas that lie beyond sustainability. (p. 5)

While I am not entirely convinced by Jickling’s argument, he does make suggestions that are valid and could be used to deepen the environmental discussion. Going beyond the rhetoric of a simple term allows us to engage students in considering a wider range of possible questions.

**Social justice, outdoor education and environmental education are inter-related**

Environmentalism raises a host of questions relating to social justice. Who are the environmentalists? What is their message? Whose values are they representing? Movements that seek to maintain the status quo or protect the backyards of the advocates are open to criticism and questioning. Similarly, we must consider that environmental concerns affect different groups of people in different ways (Barrett & Greenaway, 1995, p. 29). Race, gender, occupation, socio-economic status, urban vs. rural home address, level of education, and other factors often affect environmental attitudes and can easily be dividing lines in the environmental equation. Which factors are most likely attributed to higher levels of environmental concern is quite controversial (Ewert, 1996, p. 31). Research in western Canada suggests that age, urban residence, political ideology and education are
considered the best variables from which to predict environmental concern (Wall, 1995 in Ewert, 1996). In considering environmental questions it is critical that students consider the assumptions and values that are being espoused either implicitly or explicitly. Students need to examine interpretations of nature that include not only the mainstream culture but also a wider cross-section that includes other cultural and socio-economic groups (Di Chiro, 1996). It needs to be drawn to the attention of students that not all people have an equal relationship to the environment and that many voices need to be heard.

Similarly, outdoor education raises questions of social justice. Not all people have the same values about outdoor recreation or the same access to it (Barrett and Greenaway, 1995, p. 31). Individuals from different ethnic backgrounds, for example, often have different perceptions about the value of time spent outdoors and often economic wealth dictates the accessibility of wilderness recreation and education. Students need to contemplate these different issues and, perhaps, question their own assumptions. Again, the issue of ethics arises and students need an opportunity to explore outdoor education within an ethical framework. Helping students to ask questions about social justice is important. Outdoor and environmental education can provide an opportunity to open dialogue about complex social issues.

**The connection between environmental and outdoor education**

Aside from the fact that all education either implicitly or explicitly involves environmental education there are reasons to suggest that outdoor education is a logical place to address such issues and questions (Orr, 1992). There is, however, reason to tread cautiously. Just because outdoor education usually takes place in outdoor settings does not necessarily mean that it is the best place to work on concepts relating to environmental ethics (Ewert, 1996). There are several areas that seem problematic when considering the use of outdoor adventure-based programming in the pursuit of environmental objectives. The first involves the type of adversarial relationship that often evolves when natural places are used as a tool to create challenge. It is easy for the student to become engulfed in a 'me against the river/mountain/weather' type mindset (Haluzka-Delay, 1999). This is a traditional problem in human/nature relations that can be seen in the early explorers and pioneers of North America (Cronon, 1996). When one is in the mindset of overcoming nature it can be
potentially difficult to generate a necessary sense of empathy to generate environmental concern. Some outdoor educators do, however, emphasize that this relationship can be different (Henderson, forthcoming in Haluza Delay, 1999). The second area of concern involves the lack of place-attachment that outdoor educators and their students might have (Haluza-Delay, 1999). These groups are highly nomadic in nature and do not permanently reside in the areas in which they study. Research that examines place-based environmental concern has usually focussed on people who are ‘rooted’ in a given location (Relph, 1976 in Haluza-Delay, 1999). A recent study into nomadic cultures has, however, suggested that nomadic groups can have significant connections that reflect in environmental concern (Cuthbertson, Heine & Whitson, 1997 in Haluza-Delay, 1999). In light of this debate it seems prudent to be wary of findings and try to consider the underlying beliefs and assumptions.

Making sense of wilderness

One of the key issues in wrestling with attitudes involves one’s context about what “the environment” entails. Are we referring to an examination of completely “wild” places, modified natural places (such as agricultural land or parks), or heavily modified places such as urban centers? Similarly what about the air above these places or the water around? Is it our actions in pristine wilderness areas (be they hiking, driving, logging or mining) or our day to day actions in urban areas (living, commuting, consuming) that are most impactful upon “the environment”.

In considering the topic of educating in and for the environment, a host of complex paradigms begin to emerge. At the forefront of the discussion is the need for a conceptualization of the relationship between humans and natural places. The building of an environmental ethic is anchored upon this conceptual framework. Coming to terms with our interpretations of ‘wilderness’ and ‘nature’ seems to be at the forefront of this discussion. Clearly the relationship of people to the natural world has changed. William Cronon, in his discussion on wilderness, suggests that until the mid-nineteenth century, “it was a place to which one came only against one’s will, and always in fear and trembling” (Cronon, 1996, p. 71). He develops this discussion and suggests that it was not until there was a change in values that people’s attitudes showed signs of change.
Henry David Thoreau declared, in 1852, that “In wildness is the preservation of the World” (in Cronon, p. 69). The evidence for this change in attitude is complex but it does, Cronon suggests, support the belief that wilderness is, “quite profoundly a human creation” (p. 69). Our interpretations of ‘wild’ places are built within our specific cultural context. Moreover, any place we visited has either been previously affected by people or will in the instance of our visit be affected. Anne Whiston Spirn (1996) develops this notion to suggest that nature, like wilderness, is also a social construct. People, animals, rivers, glaciers and wind impact the landscapes and form new physical creations. And, those creations are visited and interpreted by humans within the context of their own cultural experiences.

Wilderness, therefore, is not about remote hidden corners of the earth that have never seen humans but rather are all places in which humans interact with the planet. There need not be a hierarchy of places that privilege some places over others. In recognizing that wilderness is not some remote place ‘out there’ we are directed away from, “imaging that we can flee into a mythical wilderness to escape history and the obligation to take responsibility for our own actions that history inescapably entails” (Cronon, p. 90). Thus, if we work with this interpretation we recognize that our relationship to the world includes all places, be they urban, rural or wild. Our concept of the environment must, therefore transcend boundaries that were once entrenched in a hierarchy of places.

One argument in favour of visiting less disturbed areas is that at least we see what places looked like prior to significant human intervention. This is not to suggest that all urban places should or could be returned to some illusionary original state but rather to offer a sense of perspective. These are very challenging questions that environmental philosophers struggle with at length and are outside the scope of this discussion. It is important to recognize that the outdoors is only one possible place to learn about the environment and perhaps, some might argue, not the most effective.

**Making connections outdoors**

Despite the concern about whether or not the outdoors is the best place to teach about environmental ethics there is an argument to suggest that it is a valuable locale for such a
discourse to take place and that the connections between environmental and outdoor education are significant (Ford and Blanchard, 1993 and Mathews & Riley, 1995 both cited in Yerkes and Haras, 1997). Priest suggests that, “adventure education and environmental education have been described as two trunks of the same tree” (1986). Barrett and Greenaway’s (1995) review found that the two fields are becoming more and more similar. Others have also examined this relationship and have concluded that outdoor activities can play a role in developing environmental attitudes (Shepard; Speelman, 1985-1986; Hanna, 1995; Cooper, 1998). In a study of 73 schools that visited the Metropolitan Wigan outdoor centres Cooper found that,

> [t]eachers recognize the value of this form of experiential learning which for some children *unlocks the talent which would remain hidden in more formal situations*. All young people can experience success and this leads to high motivation and confidence. Models such as this based on *responsibility* and *empowerment* clearly have much to offer the new education for *sustainability*. (Cooper, 1994 in Barrett & Greenaway, 1995, p. 28)

The Foundation for Outdoor Adventure in the United Kingdom has issued a "Manifesto for Outdoor Adventure for Young People" sheds some light on the possibilities.

> Outdoor and adventurous activities provide a special opportunity to assist young people to explore their surroundings, and to appreciate the finely-balanced relationships between humanity and the total eco-system. Such direct experiences help them to develop a stronger affinity for their surroundings, to achieve a better understanding of the need for sustainability, and to manage responsibly their own relationship with the environment in which they live and work. (Foundation for Outdoor Adventure, 1997)

Others take this concept further and suggest a need for action. Haluza-Delay states that, “the aim of environmental education is to impact knowledge about the environment with the hope of making change” (1999, p. 129). Other environmental educators would likely take this even further. David Orr suggests that, “education relevant to the transition to a
sustainable society, demands first, an uncompromising commitment to life and its preservation” (1992, p. 133). But, it would rarely appear that outdoor educators make this level of commitment. Outdoor education tends to be centered first on people and their experiences and second on the environment. There are several potential pitfalls of this arrangement. Firstly, it can lead to an anthropocentric view of the environment. It is easy for the environment to be viewed as a place for spiritual or aesthetic enjoyment or simply a playground in which to exercise and challenge ourselves with our favorite sports. Some have also raised concern that without a conscious effort being placed on environmental attitude and behavior outdoor education classes and recreational users are destroying the very environment upon which their activities are based (Ewert, 1996; Newhouse, 1990 and Robertson, 1986 in Hanna, 1995). Furthermore, to what degree do people make connections between their wilderness experiences and their everyday lives? Once we leave the pristine wilderness places and return to the city it is easy to forget about the lessons we learnt and too easy to ignore our everyday impact.

Perhaps one of the strongest arguments for the use of outdoor education to teach concepts relating to environmental ethics relates less to the use of the outdoors and more to the ability of outdoor programs to create changes in personal beliefs and attitudes. The processes of personal and interpersonal growth developed in the previous section are seen by some as being key to the development of new environmental attitudes (Hanna, 1995; Cooper, 1998). “Adventure programming enhances internal locus of control and helps individuals and groups develop decision making capacities. These outcomes are crucial to effective environmental activism on both the personal and social levels” (Priest, 1986 in Hanna, 1995).

Lessons in simplicity: where less is more

Another powerful benefit of using wilderness locations is that they provide an escape from the complexities of modern society that allows us to look at natural systems and our interaction with them in a much simpler manner. Several authors (Postman, 1995; Knapp, 1999; Gass, 1983) suggest that it is important for students to escape the power of technology and reconnect with a more basic form of existence. This has both the power to create a connection to nature and a therapeutic effect. “[T]he absence of technology
instantly eliminates adolescents' opportunities to repress feelings by distracting themselves with television or music” (Gass, 1983, p. 25). Gass continues, “the environment is so novel, the lifestyles so different, the mundane world so far away that the teen is impelled into a kind of 'altered state of consciousness.' This state is implicitly conducive to letting go of unproductive personality strategies” (p. 26). As previously discussed, this new state of consciousness is parallel to the mindset needed for youth to reframe their environmental attitudes and ethics.

Thus, outdoor education may just be providing students with the right tools to think about complex environmental ethics issues and possibly enact change.

**Environmental outcomes**

Given the potential power of outdoor education to create environmental change it is interesting to examine the degree to which various outdoor programs make environmental outcomes part of their explicit mandates. Numerous programs lay out environmental aims in their objectives or mission statements. New Zealand's largest outdoor education provider The Sir Edmund Hillary Outdoor Pursuits Centre's mission statement is “Developing human potential and environmental awareness through challenging adventure programs facilitated in a fun and supportive manner” (OPC Teachers’ Handbook, p. 8). Outward Bound Western Canada’s objectives include promoting, “self reliance, care and respect for others, responsibility to the community, and concern for the environment” (Outward Bound Canada, 1999 in McKenzie, 2000, p. 1). Other programs make environmental education an even more important part of their agenda. Located on a small island outside Vancouver, British Columbia, "Sea to Sky Outdoor School for Environmental Education provides quality educational programs that aim to strengthen a new generation of leaders responding to the challenge of sustainability” (Sea to Sky, 2001). The stated goals of the Sea to Sky programs are that students will:

- increase their knowledge of how the natural world works;
- develop an understanding of their connection to and dependence on the services of Nature and the value of these to the human economy;
• recognize the ecological and social cost and benefits of personal lifestyle choices;
• be motivated to change elements of their behavior;
• understand the values and responsibilities of membership in healthy, sustainable communities;
• explore ways of finding freedom without taking it from others;
• experience a community which celebrates the wisdom and wonder of nature and promotes positive energy, teamwork and personal responsibility.

Clearly environmental goals are being articulated in program advertising and mission statements but whether or not programs are actually achieving their goals is difficult to assess. Firstly, how we measure success is not clear or consistent. Is a program successful, for example, if the participants gain a new sense of environmental awareness? Or, are changes in attitude required? Or, perhaps participants need to commit to environmental action in order for success to be determined? There are no easy answers with which to measure. The second challenge is that very little research has been done to look at the environmental outcomes of outdoor education programs. The majority of studies, to date, have focused on personal and/or interpersonal findings. Similarly, in cases where studies have been conducted, there has been little examination of what processes within outdoor education programs might be generating determined outcomes (Hanna, 1995). To the best of my knowledge no meta-analysis has been done to look at environmental outcomes so it is necessary to examine a number of individual studies in order to get a sense of whether or not outcomes are being achieved.

A few researchers have tried to tease out the relationship between outdoor education programs and environmental outcomes but with limited success. Gillet, Thomas, Skok and McLaughlin (1991) found that there were changes in self-concept and ecological knowledge, but not environmental attitudes after a six-day backpacking trip with teenage participants. The study concluded that it was important to consider the process and ensure that programs are well planned, with clear objectives, include follow-up activities, involve a sense of progression and contain an emphasis on goal setting. They also suggested that optimal trip length and intensity and leader attributes should be examined.
Haluza-Delay concluded a similar finding after his wilderness trip with youth. "As effective environmental education, this trip was not a success, at least in the short term. The trip experience generated only general feelings of goodwill for the natural world. Post-trip reflection did not indicate any increase in environmentally responsible behavior" (1999, p. 136). This suggests that part of the concern could be a lack of transferability and that, "[p]erhaps outdoor leaders should help participants appreciate the natural world in general rather than wilderness-specific ways" (1999, p. 136). This type of mindset might ease the difficult transition back into a society that undervalues environmentally sustainable lifestyles.

The results of Haluza-Delay seem consistent with earlier findings by Shepard and Speelman (1985) who studied youth at a residential outdoor camp in Ohio. Shepard and Speelman found that while conceptually a positive learning experience took place the programming, despite its environmental emphasis, had very little impact on environmental attitudes. Three useful findings were: a relationship between program length and conservation attitude development, the use of an acclimatization process for urban campers, and a noticeably more significant change in attitude for first time campers.

Palmber and Kuru (2000) in their study of Finnish outdoor experiences for 11 and 12 year-olds found that outdoor education led to increases in self-confidence, safety and a willingness to participate in outdoor activities. Students with a higher level of outdoor experience seemed more empathic towards the environment and displayed a higher level of moral judgement. The study suggests that increased awareness and knowledge of environmental action strategies contributes to increased motivation to take action. The authors concur with others (Mathews & Riley, 1995 in Yerkes and Haras, 1997) that knowledge and values are both important elements in creating environmental concern. These, coupled with a sense of ownership and empowerment, are important in generating action. The findings do not seem to include a great deal of concrete programming suggestions but they do suggest that outdoor education can play a role in affecting changes in environmental attitudes and action.

Mittelstaedt, Sanker and Vanderveer (1999) found a more impressive change in environmental attitude in their research with a one week science-based summer camp but
the highly self-selected nature of the participants and their pre-existing attitudes towards the environment do make it hard to draw conclusions. The study does, however, help emphasize the relationship between knowledge, skills and attitudes and the potential importance of using attitudinal change as a barometer of program effectiveness. This builds on the work of Hanna (1995) and emphasizes the strong relationship between beliefs, attitudes and intentions. Hanna does caution, however, that gains in attitude do not necessarily translate into pro-environmental behavior. Hanna’s work is based on an adult student population but the findings do seem to be useful in considering programs for youth. Hanna suggests the importance of leaders and their knowledge and the value of including an introduction to environmental concepts and the environment being traveled in. Hanna also outlines the importance of including time at the end of outdoor education experiences to have students look at their future intentions and set goals.

McKenzie’s study of Outward Bound Western Canada (2000) found that the program’s stated objectives were met and that a substantial number of students linked being in a wilderness setting with increased concern for the environment. A 17-year old male student in the study explained, “This course led me to realize how much ‘filth’ and garbage is found in the modern world compared to the mountains, and I have found a new respect for nature and desire to do my part to keep it clean” (p. 82). These themes of caring and appreciation are common in the participants’ responses and suggest an understanding of the interrelatedness between people and the environment. Whether or not these changes in attitudes transferred into changes in action back home is not clear from the findings. A number of students indicated that it was the positive role modeling of the instructors that was most influential in generating their shift in attitudes. A 62-year old participant noted, “I have never been that conscious of my environment before. Our instructors set such a wonderful example that I found myself wanting to do the same. I now have a new appreciation for our natural environment” (p. 89). The positive role-modeling of instructors can clearly play an important role in generating positive shifts in environmental attitudes.

In summary, the limited amount of research in the field has not created a conclusive link between outdoor education and changes in environmental attitudes and action. This appears to be in part due to the elusive nature of the concept and partly due to the wide
variety of programs attempting to affect change. This may result from the complex construction of "nature" itself. Our historical and cultural contexts of what even constitutes nature make it very difficult to define our relationship to it. It seems important that students are at least introduced to competing ideologies of nature in order that they can begin the process of comprehending environmental ethics.

The signs that direct-experience in outdoor-type settings can have a positive impact are evident but further work is certainly required. The connection between changes in self-concept and personal development is particularly interesting and offers hope that as participants develop themselves the environment may become a larger part of their sphere of concern. Theory and research do suggest that there are a number of concrete processes that outdoor educators can employ as they struggle for effectiveness. Locations, program length, types of activities, instructor competencies, goal setting and other suggestions are all potential ingredients in success. It is important that programs integrate these recommendations and carefully monitor the outcomes. It is only through this method of collective growth that positive environmental outcomes will evolve. The next section overviews a number of process considerations that offer the potential to guide educators as they seek to shape program design.

**Environmental education processes**

As elusive as they may be, it is clear that environmental outcomes are worthwhile and that outdoor education offers the promise of creating positive changes in social patterns. Despite the lack of concrete measurable outcomes theorists and researchers do have constructive approaches to suggest. While some consider larger issues that can be applied when laying out an entire program others are applicable at the level of a given lesson or activity. The following are a number of processes, which can be used to maximize program effectiveness.

**Interdisciplinary approach**

Environmental ideas are complex and cannot be limited to single disciplines. "A more promising approach," David Orr (1992, p. 90) suggests, "is to reshape institutions to function as transdisciplinary laboratories." Science, math, English, social studies can all
contribute to a complete understanding of environmental issues. In creating the structure of school outdoor education programs an interdisciplinary approach is fundamental. Teachers need to recognize that the world is not as neatly compartmentalized as our institutions would have us believe. The challenge of finding a balance to human-nature relations will require a holistic approach that considers all aspects of the human experience. Students will need to conceptualize the world in a way that sees the interaction of various disciplines. Programs should, therefore, provide a structure that allows for a holistic and interdisciplinary examination of topics and issues.

**Better to go deep than wide**

Environmental education is a vast and growing field with an endless number of possible case studies and examples. It is very tempting to want to cover as many examples as possible but there exists a compelling argument to restrict ourselves to a smaller number of in-depth studies. Rather than focusing on making sure students know about all types of environmental concerns it is better to assist them in examining one or two examples in more detail and developing the skills to analyze and critically consider the dilemmas. If we teach students these skills they will then be more inclined to continue critically examining other cases themselves in the future. Robert Stevenson, in studying breadth versus depth, suggests that:

> in an in-depth, authentic study of an environmental education study students: identify an issue within their local environment that is meaningful or significant to them; conduct a sustained, interdisciplinary inquiry or investigation into that issue; and by constructing their own understandings and values, develop a defensible position on the issue, and make judgments about appropriate actions that should be taken. (1997, p. 191)

This type of an approach takes emphasis off the study of facts and examples and places it on the learning of enduring habits of mind. In so doing, students are better prepared to be effective citizens. Stevenson continues:
As environmental issues change and our knowledge of human-environment interactions change, future citizens will need a disposition to carefully and thoughtfully analyze new evidence and new concerns in order to make informed decisions that will sustain and enhance the quality of life on our planet. (p. 198)

In an effort to create better-equipped students, programs need to reflect this emphasis on the in-depth study of authentic examples.

**Direct experience**

Direct experience with the natural environment can play a pivotal role in helping students gain an appreciation for and understanding of the natural environment and people's relationship to it. Teenagers in modern society are increasingly disconnected from the natural environment. As David Orr so eloquently states, "Today's student is largely shut off from the natural world, sealed in a cocoon of steel, glass, and concrete, enveloped in a fog of mind-deliberating electronic pulsations" (1992, p. 134). Given how distanced students are from the natural world the more time we can offer them to directly connect with it the better.

Through multi-day out-trips and day-long field-trips students are provided with the opportunity to connect directly with the natural landscape. This can lead to a stronger sense of appreciation (both aesthetic and spiritual), a greater knowledge of "how" the environment works, a sense of caring, a basis for considering ethics and perhaps even a reason to take action. The British Columbia Ministry of Education (1995), in their document "Environmental Concepts in the Classroom" acknowledges that:

Direct experience with the environment, both individually an in groups, is an important and vital way to learn. Such opportunities must be provided for the studies to be relevant, because they help provide students with a deeper understanding of natural systems and the impact humans have on those systems.
Direct-experience is a central theme of outdoor education that allows for the interdisciplinary connection of subjects in way that touches all of the students’ senses.

**Program length**

The impact of program length on generating positive changes in environmental attitudes seems somewhat inconclusive. The summary of meta-analyses by Neill and Richards (1998) found consistent evidence that longer program result in slightly better outcomes. Specifically, they found that programs of greater than 20-days duration were most effective. But, their findings were not looking specifically at environmental outcomes. Gillet, Thomas, Skok, and McLaughlin (1991) who were looking for changes in environmental attitudes, but only within one study group, found that short and long-term wilderness experiences can be equally effective. They also suggest the findings of Ignatiuk (1978) who found that trips of greater than five days duration are most effective. It would appear however that Gillet et al. did not examine programs greater than 17-days in duration. This leaves us with some degree of uncertainty about programs that are greater than 17 or 20 days. In general it would appear that the impact of program length, particularly those that span multiple weeks or months is unknown. This is clearly an area for further research.

**Instructors**

Clearly, instructors/teachers play an important role in developing a shift in environmental thinking. From the initial planning of objectives to the design of activities to meet the desired outcomes the role of educators is key. Hanna (1995) emphasizes the importance of instructor competency:

Outdoor leaders themselves must have a basic working knowledge of ecological concepts, current minimal-impact technology, wilderness-related history and philosophy and environmental issues. They not only must be taught the relevant facts, concepts and skills, they must be trained in effective and efficient processes for delivering these messages in a manner that adds to the overall program experience.
This builds on the list of recommended teacher competencies developed by the North American Association for Environmental Education (NAEE). These fall into seven categories: (1) knowledge and skills, (2) educational and psychological foundations, (3) outdoor education foundations, (4) environmental understandings, (5) instructional methodologies, (6) learning environment, and (7) assessment (Simmons, 1995 in Richardson & Simmons, 1996). While this is a broad list, it emphasizes the need for teachers bring a host of complex competencies to the educational setting. In the outdoor setting this is made more complex. In addition to the instructional outcomes the teacher is also concerned with transportation, equipment, group management, route finding, meal preparation, first aid other necessities. The outdoor educator's job is a challenging one.

A more difficult aspect of the outdoor educator to quantify is that of role-model. Both McKenzie (2000) and Martin (2001) mention the importance of the unique relationship that develops between participants and students. Exactly what makes an effective role model is difficult to ascertain but it can definitely be effective. When a strong relationship develops the participants see the actions of the instructor as worthy of emulating. It is important for instructors to be aware of their position as role model and to ensure that their actions are congruent with the values and outcomes that they are trying to teach. When they are congruent, role modeling can be a powerful process in generating positive outcomes.

**Emphasis on clear objectives and planning**

The findings of Gillet, Thomas, Skok and McLaughlin (1991) suggest that generating effective outcomes involves careful planning that includes carefully articulated environmental objectives. While there may be a certain amount of osmosis that will occur, without planning the outcomes will not realize their full potential. This type of suggestion is common in educational methodology and needs to be transferred to the outdoor setting. While this might not seem like a particularly startling revelation it is easy for outdoor instructors not to make the time for this level of educational planning. It is easy for the pressing needs of equipment, food, and route planning to take precedence. To maximize educational outcomes instructors must prepare and plan their programs to address environmental concerns.
Follow-up activities

Environmental education will not be effective if it is an isolated occurrence that only occurs during a particular trip or residential experience. Gillet et al. (1991) found that follow-up is crucial for transfer to take place. This seems particularly important when outdoor programs are of a short duration. The use of pre and post experience lessons and activities (Sea to Sky, 2001) is important. This also addresses the concern that students see environmental concern as only an issue at camp and that they can return to their previous beliefs when they get home.

Use of progression in activities

As with any subject, environmental progression needs to be viewed within a progression of learning. Each activity needs to build upon the previous experiences in order to move the student forward and increase their level of understanding. Gillet et al (1991) emphasizes the importance of a progression that leads towards independent goal setting. Cooper develops a neat model that sees five elements in the process: awareness, knowledge, skills, attitudes and values, and action (1998, p. 7). While it is possible to start with the first element and work through to action its is also possible, Cooper, suggests, to start at other points and create an effective progression. It might, for example, be desirable to have students start with an environmental project that involves action such as a stream clean-up. This will generate interest and concern and fuel the students’ curiosity to explore the other elements. There is no one formula that is necessarily better than the next. It is necessary however that instructors recognize the importance of progression and work through a cycle of learning with their students.

Goal setting

As discussed in the personal/interpersonal chapter, forward thinking and goal setting is an important step towards enacting change. Students need to process information and determine steps for themselves that are consistent with their revised attitudes and beliefs. Gillet et al. (1991) discuss the importance of goal setting in the environmental education process. Effective programs should include a component, in which students are engaged in reflection and goal setting.
**Use of acclimatization process**

Shepard and Speelman (1985) suggest that participants from an urban setting may need a period of acclimatization outdoors before they are ready to start grasping more conceptual ideas. Van Matre explains that as an educational tool, "acclimatization is a program which helps people of all ages build a sense of relationship—through both feelings and understanding—with the natural world" (1979, p. 5). He goes on to discuss the four components: sharpening **senses**, building **concepts**, providing opportunities for **solitude** and emphasizing the importance of the **mechanics** of learning. In the end these four elements are held together with a special glue—the glue of **magic** in living and learning with joy" (p. 6). Van Matre continues to suggest the importance of these elements and describes activities that can be use to help people acclimatize. What is important, for the purpose of this discussion, is to recognize that people need a period of adjustment in a new environment before they are ready to start thinking about bigger concepts. This is particularly true for participants who are not familiar with outdoor settings and need transition time.

**Summary of environmental outcomes and processes**

Achieving environmental outcomes with outdoor education remains somewhat of an unknown entity. Limited research that lacks solid conclusions restricts the ability to solidly connect environmental education knowledge to outdoor education practices. The findings that exist, however, suggest that positive outcomes may be possible if a number of process considerations are heeded. Inherently problematic is the elusiveness of the wilderness concept. In order to make any headway it seems important that students and educators alike grapple with the relationship between nature, wilderness and the environment. With that conceptual foundation in place it is possible for educators to experiment with a number of processes. It should be emphasized that none of these items are proven solutions but are rather possibilities. The following is a brief review of points for consideration:

- Engage students in a discussion that relates wilderness, nature and the environment.
• Go deep rather than wide.
• Maximize the direct-experience approach.
• Design programs to be interdisciplinary.
• Help instructors develop the requisite skills and attitudes and utilize positive role modeling.
• Emphasize the importance of clear objectives and careful planning.
• Use follow-up activities after the outdoor experience to increase transferability.
• Recognize the importance of progression and include: awareness, knowledge, skills, attitudes and values, and action.
• Include time for reflection and goal setting.
• Utilize an acclimatization process to help students adapt to the outdoor environment.

If educators integrate these processes into their programming it will then be possible to assess their effectiveness. Strategies for assessing the effectiveness of programs should be central to their design. Without a means of ongoing evaluation it is impossible to know whether or not programs are meeting the stated objectives. Similarly, studies that compare the effectiveness of different programs will be very important in determining which processes are most important. It is through this process of implementation and continuous review that educators will be able to reap the full benefits of outdoor education’s potential.

3. ACADEMIC CURRICULUM INTEGRATION

Our trip began on the north end of Vancouver Island in the fishing and logging town of Port McNeil. Here we launched our boats and paddled across to our first destination: the native community of Alert Bay. Paddling into Alert Bay we were greeted by a number of thought provoking and often incongruent sights: the world's tallest totem pole, a longhouse that holds the Umista cultural center, an imposing brick structure that was once a large residential school, a collection of poles in the traditional cemetery, the worn-out buildings of the B.C. Packers Fish Cannery, a mixed collection of homes knitted together by power and telephone lines, the ferry dock, a marina full of fishing boats, and a large Coast Guard antenna on the
hill that acted as the obligatory cherry on top of the cake. Without even landing there were at least a dozen lessons that could be shared and experienced. We quickly realized that we could spend a week just exploring Alert Bay and we had only a few hours! We landed our boats on the beach in front of Umista and started our visit with a narrated introduction to the area's cultural past, present and future. We watched a video on the area that focused on the traditional potlatch, its significance and how the government had outlawed its practice. The students learned that the last potlatch was held on Village Island, a place that we would visit by kayak in a few days. We then explore the longhouse and the potlatch mask collection. This is an incredible array of masks that are displayed in life-like manner where the visitor can experience their magic. The students were awed by the richness of the culture and how dramatically it had changed after the arrival of European settlers. We examined a large map on the wall that showed the hundreds of traditional village sites -these dotted the route that we would be exploring over the next two weeks. After Umista we visited the cemetery and its rich collection of poles. The students read out descriptions of the poles and we imagined how different life would have been less than one hundred years earlier. The students began to think about everything they had studied in the classroom about the smallpox epidemics, residential schools, potlatches, fishing practices, the creation of Indian Reserves and the power of the Department of Indian Affairs. As we paddled away from Alert Bay, with an incredible rainbow off our bows, I knew we had captured the hearts and minds of our students. Our introduction to the area had served its purpose. We had not found or provided answers, rather we had discovered a host of questions that needed to be explored.

The highlights of the trips and their related learning are too numerous to recount in detail. On several nights we camped at former village sites, explored middens that were thousands of years old, discovered native burial sites complete with cedar-bark blankets and baskets, witnessed pictographs on the coastal rocks, and imagined what it would have been like to be a native child who had misbehaved and was punished with a night on Trembling Rock in the center of Nakwakti Rapids -the fastest tidal rapids in the world. The students caught and ate fish, crab and sea urchin and imagined what it would have been like living without modern amenities. During a torrential coastal rainstorm they sat around in their Gore-Tex jackets and talked about how amazing it was that natives lived in clothes made of cedar bark. As
they navigated their fiberglass and plastic kayaks through the fog by compass bearing they talked of the traditional native canoes that were carved from a single cedar tree and paddled without modern navigational aids. And, as they went to sleep at night, exhausted, they thought about the villages of long houses that once stood in the very same spot. For two weeks the students were captivated by a way of life that had been lived sustainably for thousands of years. Natives had learnt to use the natural resources without depletion yet in less than two hundred years Europeans have depleted the sea otters, almost destroyed the fish stocks and logged almost all of the old-growth forests. We visited logging camps and fish farms and learnt for ourselves why the loggers in Port McNeil are now unemployed and why the fish boats remain tied to the docks in Alert Bay. In two weeks the students had seen for themselves the results of the past and had gained possible insights into how we might choose to conduct ourselves in the future. Most importantly, however, they had discovered the importance of knowledge and the need to think and ask questions.

Social studies was also augmented by English assignments. Each evening the students who had led for the day chose a quote which they read to the group and then hosted a discussion. The students always amazed me with their insights and reflections. Journal and letter writing were also an integral part of the overall experience. These lessons were never framed as "assignments", they were merely part of the trip experience. We also had lessons on intertidal life, whales, fish, edible plants and numerous other subjects. Sometimes lessons were planned and other times a topic just presented itself and we took advantage of a teachable moment.

There was no test at the end of the trip and no marks were assigned yet the students had been fully engaged in an incredible process of learning. Not only had they completed a great distance by kayak, they had really discovered the true essence of learning. They had found new ways of looking at the world and had formed a new context from which to ask some of life's most important questions.

The possibilities for integrating academic curriculum into outdoor education are extensive and can be organized into three main groups. The first, as described in the introduction
above, involves teaching and experiencing lessons in the outdoor setting. The second involves using outdoor experiences back in the classroom as a teaching tool. And, the third includes more conceptual ways of thinking that are acquired outdoors and can be applied to any type of learning. In examining the possible outcomes that can be achieved by integrating academics and outdoor education it becomes useful to consider the results in terms of these three groupings.

Before going further it is useful to clarify my definition of “academic curriculum integration”. A common term in educational circles is “curriculum integration” which, for my purpose, seems too broad. The current curriculum in British Columbia includes a host of learning outcomes that include many aspects of physical, personal and social development. These are particularly common in physical education and could be applied to almost any type of outdoor education. While I agree that a program that incorporates these types of outcomes is integrating the curriculum in an outdoor setting it is not what I am referring to. By including the word “academic” I am referring to the learning of more traditionally classroom-based subjects such as English, math, science, social studies, and second languages. It is the ability of outdoor education to provide a learning opportunity for these subjects that is the focus of this chapter.

**Academic integration outcomes**

Despite the extensive historical background of direct-experience learning (Socrates, Dewey, Kolb, Hahn) there is surprisingly little research to connect academic outcomes with current outdoor education practices. It appears that the main reason for this is the small number of outdoor education programs that are geared towards this type of learning. The majority of programs are short term in nature and are focused much more heavily on outdoor skills, personal and interpersonal development and, in some cases, environmental objectives. The numbers are also limited because it is mostly schools, colleges and universities that are interested in these types of outcomes. Programs that are more recreational in nature (summer camps, wilderness retreats, etc) are not usually interested in promoting academic inquiry. Despite these limitations there are a number of programs that are utilizing outdoor education in this manner and a number of studies have touched on this relationship.
Learning academics in the outdoor setting

The meta-analysis by Hattie et al (1997) did examine academic outcomes and offers a few insights into the use of the outdoors as a site to teach academics. Not surprisingly the authors found that only a few courses have been specifically designed to promote gains in the cognitive domain. They suggest that language and mathematics are the most common areas and often include remedial teaching, normal school work and activities to promote self-esteem. They point to notable positive gains in direct effects such as mathematics. They also conclude that the findings of other researchers, such as Gillis (1981), can be misleading when they state that specific programs have no effect on academic outcomes. This, Hattie et al. indicate, is because most programs do not aim to make improvements in this area. It is important, therefore, when evaluating programs for academic curriculum integration to determine if academic improvement is in fact a desired outcome. The study of Marsh and Richards (1988, in Hattie et al.) examined a program with specific academic objectives and determined that the program was successful in its work with ninth graders.

A number of authors have explored the use of field-school types of learning to teach academic subjects. Sciences such as biology, ecology, geology, physics and environmental sciences seem to be particularly conducive to this type of approach. Landis (1996) overviews a number of field-based opportunities and suggests that the outcomes can promote positive cognitive development (Lisowski & Disinger, 1987 in Landis, 1996). This can range from more nature-based programs to studies that look at computer physics in the playground (Taylor et al, 1995 in Landis) and the principles of physics in amusement parks (Reno and Speers, 1995 in Landis). The emphasis is that through direct-experience out of the classroom the subject comes to life and the learner engages with a sense of excitement to learn. Unfortunately, research supporting the use of the outdoors to teach about other subjects such as English, second languages and social studies seems more difficult to find.

Using outdoor experiences in the classroom

The use of outdoor experiences as a point of connection in the classroom, beyond traditional field school experiences (geography and biology for example), seems to be an area that is
overlooked in the research. While there do not appear to be any studies to support the use of these experiences, in our school this has proven to be a powerful type of learning. When the English teacher has the students write about their experiences on an out-trip or engages them in a novel about climbing Everest after a mountain trip, the level of enthusiasm is always very high. Similarly, when the biology teacher connects a lesson on fish farming and genetically modified foods to a recent kayaking trip the students are engaged. A favorite is a chemistry lesson that looks at the science behind fire and the importance of fire for human survival. From our experience, time outdoors can provide an engaging springboard to a variety of classroom lessons. This is certainly an area worthy of further research.

**Conceptual thinking and outdoor education**

In a more general way, it has been noted that outdoor education leads to a more process-based method of learning. Rather than learning facts, outdoor education offers a way of experiencing and processing information than can translate into future academic success (McNamara, 1971 in Ewert, 1989). Ewert notes a number of studies that have shown that outdoor education can be useful in enhancing problem-solving skills or values (Godfry, 1972; Knapp. 1986). Ewert states that, "the components of problem solving –identifying the problem, identifying and reviewing solutions, picking and implementing a solution, and evaluating that solution –lend themselves particularly well in an outdoor adventure situation” (p. 53). Wilderness travel involves a host of decisions that on a day-to-day basis are potentially significant to one's well-being and must be resolved in a timely manner. He also emphasizes that the small group size can lead to important lessons in communication and co-operation that are important in problem solving. Lastly, Ewert suggests a study (Zook, 1986) that examines the potential of outdoor education to teach the important distinction between what is needed and what is wanted. Hattie et al.'s meta-analysis concludes that, though there are many variances in the effects, outdoor education programs do enhance general problem solving competencies.

Findings also suggest that improvements in self-concept, as mentioned in section one of this chapter, are closely related to improvements in academic grades (Cason and Gillis, 1994). As a student's self-confidence grows they often experience improvements in their academic
performance. The findings in this area are somewhat thin but it is an area worthy of further examination.

**Processes of academic curriculum integration**

Despite a lack of research into the processes of academic curriculum integration it is possible to distill a number of key components. While these suggestions are shaped more by experience and theory than empirical research, they do offer guidance in the quest to maximize the benefits of outdoor education.

**Clear objectives and thoughtful planning**

The findings of Hattie et al. (1997) and Gillis (1994) clearly illustrate that academic outcomes are not usually a result of chance. The programs that are most effective are those with program designs that support clear objectives. This type of planning takes time and commitment on behalf of program staff and teachers. The design of lessons for the school and the field need to be dovetailed with the outdoor experiences. Similarly, outdoor experiences need to be designed to support the academic outcomes. In situations where multiple teachers are working with the students it is important that there is cooperation and good communication between staff. It is often desirable to take an interdisciplinary approach to the educational process. A project may, for example, be assigned that has English, social studies and science components. In this type of learning it is difficult for teachers to plan their courses autonomously from the other educators.

Scheduling of time at school and on out-trips must also be done with a broad vision to include all aspects of the educational experience. Scheduling an integrated approach to education is definitely more complex than the traditional student and staff timetable. Flexibility is required. There will be times when students and staff will be away for extended periods and instances when extra time might be required in the classroom.
Use of cohort groups

It is also important that the program is structured so the students stay together in a cohort group. The interdisciplinary nature of the program and the fact that the students are away from the school for extended periods of time means that they must be educated as a unit. In the school setting this means the students form an individual class and do not break up for different subjects. While it may be possible and desirable for students to take one or two electives outside of the cohort, academics should be taken together. Similarly the groupings on trips need to reflect grouping in the classroom. Maximizing the integration between classroom and outdoors requires the sharing of common experiences.

Utilize experts

Clearly teachers and instructors cannot be expected to be experts in all fields. It is important to recognize the limitations of our own expertise. Just as a teacher might hire a canoe instructor to lead a wilderness trip they should be prepared to bring in outside experts to assist with academic integration. These are usually subject specific professionals and could include environmental engineers, foresters, biologists, naturalists, environmentalists, or a host of other experts. In addition members of cultural groups can be brought in to share their culture and tell their experiences. We have had incredible success at our school by utilizing native interpreters and elders both in the classroom and on trips. While there is always a risk that this type of endeavor will not work out as planned, when it does the awareness and appreciation gained can be quite remarkable.

Activities and lessons

There are no simple recipes for academic lessons that work in an outdoor setting. Landis (1996) explored a number of science-based fieldwork that included the development of environmental study areas, development of nature trails, extended field schools and a variety of other activities. Cooper (1998) also examines a number of activities that can help build students' knowledge of natural systems and lead towards sustainability action projects. Project Wild and other organizations have also published a number of books that suggest possible science-based activities in the outdoor setting (Cornell, 1998). There are plenty of
resources available but what is important is to ensure that activities are consistent with stated objectives.

For English studies there have been articles written on the use of journals, drama, poetry, literature, storytelling and ceremonies (Lee, 1997; Cooper, 1998; Oles, 1992; Martin, 2001). Bennion and Olson (2002) explore the powerful relationship between writing personal narratives and outdoor experiences. Martin's examination of dramaturgy and the holistic inclusion of a variety of activity types can lend itself nicely to academic curriculum integration. The only challenge, that Martin revealed, is that this type of holistic course planning can take a great deal of time and energy. While it may be important to plan a certain number of activities before leaving home it is also valuable to be flexible and willing to create or adapt activities based on the need of the group. The dramaturgy programs illustrate this need to be willing to adapt and be flexible in choosing and designing activities. Again, there are no pre-set formulas for success. What is required is a commitment to the process and a willingness to integrate academics with the outdoor experience. The results can be highly rewarding.

One process that has received some attention in the literature is the use of mindfulness training to help enhance program effectiveness. Mindfulness training involves the use of a form of meditation to assist students in being fully focused in the moment (as opposed to thinking about the past or the future). Mindfulness training increases awareness, facilitates how information is processed, enhances insight and learning and promotes unity and creativity (Kabat-Zinn, 1990 and Langer, 1989 in Trunnell, White, Cederquist & Braza, 1996). The training is composed of two aspects: concentration meditation and insight or wisdom meditation. The study conducted by Trunnell et al. with university-age students demonstrated that students who participated in a ten minute mindfulness meditation each day during a three-day out-trip were more aware, less bored, and received greater value from the program. The authors found that this state of awareness set the stage for a higher level of learning. This seems consistent with the findings of other researchers (Iso-Ahola, 1988 and Neulinger 1981 in Trunnell et al.) and, "suggests that those participants who trained in and practiced mindfulness were in effect more present and aware, and more able to participate in the outdoor experience, thereby setting the stage for enhanced acquisition
of information and learning” (Trunnell et al, p. 47). Whether or not mindfulness training would be effective with adolescents is unproven but it is certainly worthy of further consideration as a means of assisting students to acquire knowledge and understanding about academic material.

**Teaching for historical understanding**

One area that is worthy of special consideration is the use of outdoor education to teach about history. In the opening of this chapter my narrative describes teaching about native culture and history during a two-week sea kayaking trip along British Columbia’s west coast. During the trip we visited a modern cultural center and numerous old village a sacred sites. We also met with native elders, museum interpreters and a number of other individuals who each shared a bit of their knowledge. But what, one must ask, is the history we are teaching? And, whose history?

There has been a shift in recent years away from ‘great men’ and ‘important dates’ and towards a social history that is more inclusive. “Social history is not part of history, but all history from the social point of view” (Osborne, 1995, p. 89). The examination of people’s experience outside of the great explorers and early politicians is an important step towards understanding the province’s past. Taking students out into the field to visit native sites and explore the stories of people’s ancestors certainly seems like a step in the right direction but there are challenges.

What is most important is that students understand that they are not going to visit the past. While traces of the past may live on in the form of artifacts in the present, any experience students have with those artifacts is definitely in the present. When visiting it is important to remember that:

> [every] museum and historic site is a present day reality. It is not, nor can it be, the past brought to life. It is not, nor can it be ‘authentic’. The dream of authenticity is a present-day myth. We cannot recreate, reconstruct or recapture the past. We can only tell stories about the past in a present-day language, based on our present-day
concerns and the knowledge (built, to be sure, out of documents and evidence) we construct today. (Handler and Gable, 1997, p. 223)

Students need to be aware of this distinction. It would be nothing short of dishonest to suggest to students that they will be experiencing life as, for example, the natives did 200 years ago. This form of illusion would be counter to the very notion of social history and the desire to have students critically reflect on the narratives they are seeing or creating.

In particular, when visiting museums and reconstructions it is important that students are not swept into an apparent past (Seixas, 1997). The interactive displays, videos and costumed characters are often designed to have students imagine that they are in fact experiencing the past as historical people would have. It is important as educators to help students make this distinction and begin to ask critical questions. Students need to examine whose interpretation of the past we are seeing or hearing? What are there implicit and explicit messages? What part of the story seems to be missing?

Outdoor education offers an incredible opportunity to take students beyond the bounds of traditional textbooks and into an engaging realm of social history but it is not a panacea. It is important for teachers to frame the experience in an appropriate fashion and help students to begin asking important historical questions. If used in this way, students will be learning about the breadth of history and the complexities of the relationship between past and present.

**Summary of academic curriculum integration**

Despite the lack of extensive research in this area, there is reason to believe that outdoor education can offer students a unique opportunity to learn traditional academic subjects. This includes the learning of material while in the field, the use of outdoor experiences to enhance classroom learning and the application of outdoor problem-solving processes to academics. All three of these areas show potential and are worthy of experimentation and examination. In terms of processes to achieve these goals the following is a brief summary:
• Achieving academic curriculum integration requires clear objectives.
• Thoughtful and effective lessons require careful planning by staff.
• Program must be structured to facilitate this type of learning.
• Students need to remain together as a cohort for their out-trips and their in-school lessons.
• Activities and discussions must be planned to maximize the dialogue between outdoor and classroom experiences.
• Utilizing experts in various fields can be highly effective.
• There are no simple solutions for activities and lessons. Planning requires time, flexibility and, where possible, integration with other subjects.
• When teaching social studies it is important to teach an inclusive social history.
• Students need to be engaged in questioning historical narratives.

These points can provide a starting point for both program design and further research. As programs build upon this collective knowledge the effectiveness of outdoor education will continue to grow.

4. OUTDOOR SKILLS AND PHYSICAL FITNESS

It was mid November and we were about to embark on our first sea-kayaking trip of the year. The students had practiced their rescue skills in the warmth of the school pool and, over the previous two trips, they had honed their basic camping and wilderness travel skills. But now, as we prepared set to the cold water in the Southern Gulf Islands, we had a whole new range of skills to teach. Some of the students had paddled before but few had undertaken a multi-day trip. Everyone was shown how to load boats, check his safety gear and prepare for the trip ahead. What seemed like an immense amount of gear eventually found its way into the holds of the boats. Once on the water we began reviewing strokes, talking about paddling formations, reviewing charts and checking last minute details before we headed to our island destination. During the first hour the students struggled to find a rhythm and quickly tired even on the short crossing. When we finally arrived at camp a few hours later the boys were tired and ready for dinner.
Over the next two days we paddled in a variety of conditions including 30 knot winds and large waves that pushed the students' strength and ability. The students learnt to navigate and even had a chance to assist with a rescue when one of their peers took an unintentional swim. By the end of the three-day trip the boys were paddling much more confidently and their skills had improved dramatically. Despite the progress, however, I couldn't help but wonder how they would manage on a sixteen-day trip at the end of the year - only seven months away. Would they be able to organize that many meals? Would they be able to fit all their supplies into the boats? How would they manage paddling day after day with very few breaks? Would they be able to manage open crossings in rough water and be confident paddling by compass in thick fog? Despite a great trip I had many questions about the capabilities of a group of fifteen-year-olds.

As mentioned earlier in this thesis, the year-end kayaking trip did turn out to be an incredible success. The students did a great job preparing for the trip and, on the water, they paddled and navigated with the confidence of seasoned paddlers. Physically the boys trained hard and, despite the long days, they managed to keep going day after day for two weeks. Each day two boys were assigned the role of lead and assistant guide and they navigated the entire route and managed most aspects of the group's organization. From waking the group up in the morning to ensuring the boats were tied-up at night and conducting the evening de-brief the "leaders of the day" took their responsibilities very seriously.

The few other paddlers we met on our trip were amazed that fifteen-year olds were undertaking such a significant expedition. With only seven months experience the boys had completed a significant paddling trip along a challenging section of coastal waters. And, in the final debrief of the trip it was clear that they were proud of their accomplishments. They had pushed their outdoors skills and physical fitness to new levels and proven themselves capable.
Outdoor skills and physical fitness outcomes

Outdoor education programs, by their very nature, involve the acquisition and use of a wide range of outdoor skills. A range of sports and camping skills are employed in the quest to achieve desired learning outcomes. In most outdoor education courses the acquisition of competency in these skill-based areas is not considered a primary goal of the program. Activities are more a set of tools by which to obtain more significant gains (personal development, environmental, or academic). While students often see the activities as an end-goal at the outset their views seem to widen as the program progresses. As they learn about rock climbing, for example, they soon learn that they are actually learning about themselves. It should be noted that while there are programs that focus on skills (eg. a learn to kayak course) these are more in the realm of outdoor recreation than outdoor education.

Despite the acquisition of skills being of secondary importance in many outdoor education programs there is definitely an argument to be made for having students learn new skills and foster excitement and commitment to outdoor activities. The Manifesto for Outdoor Adventure Explains:

A sense of adventure is natural to young people. Outdoor adventure can become a route through which they may be introduced to a wide range of physically and aesthetically rewarding sports, both competitive and non competitive. Adventurous activities may be pursued at any level of difficulty, allow for progression from foundation level to excellence, and are well-suited to lifelong participation. They encourage active and healthy lifestyles, benefiting each individual and society. (1997)

The following is a brief summary of the outdoor skill and physical fitness outcomes that might be anticipated from outdoor education. Most of these points have been observed through personal experience and are generally accepted outcomes. Little effort has been made to support these findings and, for the purpose of this thesis, these assertions are being accepted as largely undisputed benefits of outdoor education.
Summary of Outcomes

**New technical skills in a variety of activities**
Most programs involve a variety of outdoor activities. Almost all programs include basic low-impact or leave-no-trace camping skills plus at least one or more activities (hiking, mountaineering, canoeing, kayaking, rock climbing, backcountry skiing or snowboarding, etc). It is expected that as students participate in a range of activities they will gain proficiency.

**Safe practices in technical skills**
In teaching the acquisition of new technical skills emphasis is always placed on the learning of accepted practices that reduce the possibility of harm to participants. In learning rock climbing, for example, students learn to belay safely, wear helmets, communicate clearly and consistently, use back-up systems, set anchors and assess hazards. By emphasizing safe practices students develop habits that they will like continue to utilize if they pursue these activities after the program.

**Risk consideration**
Many programs also offer the opportunity for students to contemplate why they might desire to include risk in their lives. As students explore various activities and emotions they learn the unique value and importance of challenge and even fear in our lives (Cooper, 1998). Programs can put this desire for risk within a context of risk assessment and management. Students begin to understand the difference between real and perceived risk (Priest & Gass, 1997) and start to determine what types and levels of risks are appropriate. This distinction between risks that motivate people to get outside and enjoy activities and those that get people killed is important for students to contemplate.

**Learning basic life skills**
Outdoor programs distill life down to its most basic elements: food, water, shelter and warmth. Students learn the importance of these elements without the distractions of modern civilization. Out of necessity and urgency, participants learn to look after themselves and stay healthy outdoors. Healthy nutrition, dressing properly and setting up a tent to keep out the rain become essential skills to the outdoor traveler. These skills also transfer to an
urban existence where students become more aware of the need for proper nutrition and hydration in their everyday lives.

**Physical and psychological benefits of fitness**

The physical benefits of participating in outdoor activities are quite clear. As students begin to participate regularly in activities they become stronger, more flexible, more coordinated and demonstrate better stamina (Ewert, 1989). Regardless of skill level students can participate in a non-competitive atmosphere that encourages personal physical improvement. In addition, students often begin to appreciate psychological benefits including a reduction of stress in their lives. The adoption of a healthy physical lifestyle can result in better sleep patterns and the reduction of stress and anxiety. In the midst of a technical rock climb, for example, one's attention becomes completely focussed and it is possible to entirely forget about finances, relationships, work, school or other programs.

**Development of lifelong healthy habits**

In introducing young people to outdoor activities it is hoped that they will continue these or similar physical activities as they become older. This is a traditional aim of physical education and emphasizes the important role of physical exercise in a healthy lifestyle. The importance of good nutrition, sleep and exercise in creating a healthy lifestyle is paramount. Outdoor education introduces students to pleasures and benefits of an active lifestyle with the hope of lifelong benefit.

**Outdoor skills and physical fitness processes**

While often not primary goals of outdoor education programs, there are a number of processes that might be useful in helping develop the above noted outcomes.

**Use of a variety of activity types**

Most programs do utilize a variety of activity types which offers the benefit of helping students find activities that they particularly enjoy. Often a mix between water and land-based activities seems beneficial. It seems that some students are more attracted to water activities (canoeing or kayaking) while others enjoy mountain activities (hiking or climbing).
Ideally students will participate in at least an introduction to a number of activities before they are presented with choices. In this manner students who are, for example, afraid of water will at least have a chance to address those fears. While they may not select a long kayak trip as part of their program it is beneficial for them to at least try it. There are no activities that are necessarily better than others and the only real criteria used by most organizations is that they be self-propelled.

Use of progression

As with other aspects previously examined the use of progression is important in teaching outdoor skills. Students need to be slowly introduced to an activity through a logical and sequential progression (Ewert, 1989). Simply tying someone into the end of a rope and telling them to climb could be both terrifying and non-educational. It might be best to start with ropes and knots and then learn to use harnesses to help students understand the safety systems involved. Students might start by hanging from a small height and seeing that the system does really work. This might then be followed by a bouldering session to learn the basics of climbing without having to worry about heights and falling. Once the students are comfortable with the basics of safety systems and climbing then they might try a short indoor climbing session. As confidence builds the group might move outside and try an easy top-roping route. As the individuals continue to gain experience the routes selected can become increasingly challenging. This type of progression can be applied to most types of activities and allows students to continually advance their skills in small sequential steps without risk of major set-backs.

Use of direct transfer

In teaching activities it is often useful to utilize direct transfer methodology. This works in conjunction with teaching by progression and involves teaching a skill than can be directly applied to one or more activities (Priest and Gass, 1997). For example, students might be taught a number of knots at the beginning of a course. Then, during a session on belaying students will be asked to apply a knot, such as a woven-figure-of-eight, to the activity. This knot might re-appear later in camp during a session on tarp construction. Through this process of transfer students see the importance of various skills and the need to think
laterally and apply skills to different situations. This type of transfer also speeds up the learning process as students do not need to be re-taught the basics with every new activity.

**Teaching protocols**

One of the best ways to help students learn to participate safely in activities is to help them understand the importance of protocols when learning certain activities. Just as an airplane pilot follows certain protocols before take-off, outdoor participants need to make safety protocols part of their everyday routine. There are certain safety checks that are inherent to most activities. Rock climbers need to check and double check ropes, anchors, harnesses, carabiners, and other equipment before climbing and kayakers and canoers need to make sure they have the appropriate safety equipment before setting out on the water. From contingency plans to first aid kits there are certain elements of wilderness activities that cannot be left to chance. By teaching about protocols students will be better equipped to enjoy many years of safe travel and adventure.

**Leading by example**

Probably the most important aspect of instructing outdoor activities is to lead by example. Students are extremely perceptive and notice almost everything we do. From how we wear our harness or PFD to the meals we cook and the clothes we wear students take note. While they often do not ask questions or verbally acknowledge our actions or inactions students quickly adopt our practices. If we arrive late to class each day so will our students. If we race from camp to camp so will they. If we paddle with a certain type of stroke they will usually adopt it also. If we drink from a certain type of water bottle chances are on the next trip they will show up with a matching bottle. Students look up to their instructors and it is important to recognize that with this relationship comes a lot of responsibility. It would be detrimental to both the relationship and the learning to tell the students to do one thing while we do another. We must always remember that what we demonstrate is more powerful than what we say.
Summary of outdoor skills and physical fitness

While often not of primary focus in the planning of outdoor education programs, outdoor skill acquisition and physical fitness development are of importance. Students do learn a wide range of technical skills that can play an important role in the adoption of healthy lifestyle practices. It is important that educators ensure that students maximize their learning potential and skills. It is also important that students understand the delicate balance between desirable and undesirable risk. Students need the skills to assess and manage risk if they are to continue enjoying outdoor activities without incidents or accidents. Given the proper skills students will hopefully adopt outdoor activities into their lives for a long and healthy period of time.
CHAPTER III Program Planning: Models & Theory

Up to this point, this thesis has explored theories, research findings and personal experiences that demonstrate both what effective outcomes might be and the processes by which they may be achieved. These outcomes include personal and interpersonal development; environmental awareness, ethics and stewardship; academic curriculum integration; and outdoor skills and physical fitness development. While it is likely tempting for the reader to grasp at certain concepts and try to imagine designing a new program or consider how ideas might be used within their existing program it is probably wise to slow down and consider the processes that such implementation might entail. The purpose of this chapter is to form a bridge between a vast array of findings and ideas and the intended goal of strengthening or building effective programs through implementation.

A word of caution, however, about the complexities ahead. Despite our best ideas and intentions, modifying and building programs is a challenging pursuit. Even the most optimistic and motivated among us need to be realistic and consider the potential hurdles ahead in order that we can increase our likelihood of success. While it is certainly relatively easy to modify our own instructional ideas and practices it is more difficult to adapt or create entire programs. This chapter is applicable both to those who seek to change their own practices and those who wish to design or redesign entire programs. The first section on organizational change, however, is probably most applicable to the latter group.

Organizational change

Schools, departments, companies, non-profit groups and other bodies that provide outdoor programming are organizations of people. These people share a collective set of values, beliefs, histories, expertise, experiences, and ways of doing things that form the culture of an organization. Whether the culture is effective or not at its task of outdoor education is somewhat irrelevant at this stage. What is important is to accept that people, and in turn organizations, do the things they do because they make collective sense. This is not to say that everybody necessarily agrees but rather that for whatever reasons (power, job stability, unwillingness to upset others, etc) the outcomes suit the needs of the organizational culture.
For change to occur within the organization their must be dissonance within the culture much as we saw with the rock climber who weighed between the knowledge that rappelling is safe and an overwhelming sense of fear. Once the organization sees the potential benefit of a change or action they may be willing to take the important first step.

If you intend to introduce a change that is incompatible with the organization's current beliefs, behaviors and assumptions, you have only three options: modify the change to be more in line with the existing culture, alter the culture to be more in line with the proposed change, or prepare to fail. (Salisbury & Conner, 1994)

Given that our intentions are to succeed, it is important to recognize the complexities of the organizational culture and attempt to determine if the proposed change is in fact going to require changing the organization's structure and culture. Cuban (1988) suggests that if the implementation is going to make what already exists more efficient and more effective without changing the basic organizational structure then it can be considered a 'first-order' change. But, if the implementation is going to alter the fundamental ways in which the organization is put together by introducing new goals or structures that transform familiar ways of doing things then it is of a 'second-order' magnitude. Clearly changes of a second-order nature are going to require a significant amount of work. As outdoor educators it is important to know our organizations in order to determine if the type of implementations we are proposing will be of the first or second order variety. This background will allow us to either modify our proposal or plan for the type of organizational change that will be required.

While it is not the intent of this thesis to delve deeply into the complex arena of organizational change and curriculum integration, it is worth briefly examining a few of the factors that might need to be addressed during any given implementation. Fullan (1991) suggests that there are three sets of interactive factors that affect implementation. The first involve the characteristics of the change itself. This includes the perceived need, clarity, value, complexity, quality and practicality of the change proposed. If the change is not perceived as valuable or seems too complex it will not likely be adopted. The second group of factors involves local characteristics. These include the constraints within groups that are determined by their organizational culture. For many changes within schools this could
affect the district, community (parents and other stakeholders), administrators, and teachers. While some of these people might make judgements based on their values, beliefs and experience it is also important to recognize that financial, structural (availability of space or resources), political, or even job security issues could play a role. The support of these various groups will likely determine whether or not a change succeeds. The third group Fullan includes are external factors and include the role of government agencies and outside bodies. This could include the ministry of education, local laws and other external factors. As we seek to examine the potential of implementing a new outdoor education idea it is important to think through these possible factors and also consider that there are many theories and ideas that are relevant to our success.

**Theories on process, content and outcomes**

While the findings of the preceding chapter offer great insights into the processes and outcomes of successful programs it is useful to organize these ideas around a theoretical structure. By seeing how these ideas fit together it is possible to move towards designing effective programs.

Positive outcomes are a factor of effective program design and program design is affected by both content and process (Hopkins & Putnam, 1993). Content includes the explicit skills and ideas that we seek to teach whereas process refers to the ways in which we convey the messages. It is the form of the process that is the major variable at the hands of the educator and one that we need to treat with care. A very brief examination of process models will shed some light on the path ahead.

John Dewey (1938) suggested a number of principles for developing a model adventure education program. Dewey (in Hopkins and Putnam, 1993) suggests an instructional model that includes:

- learning begins with the learner;
- all learning is social and involves interpersonal interaction with peers, the teacher, and the community or group;
• the learning process is an interaction with the *environment*;
• learners need to engage in *problem solving situations*;
• problem solving is followed by the *reconstruction of experience*;
• this results in a *redirection of future experience*.

Dewey also emphasizes the point that there must be 'futurity', meaning that past and present experiences need to affect the future to be educative, and that not all experiences are necessarily positive. This emphasizes the importance of planning and structure if we are to design educative experiences (Hopkins and Putnam, 1993). Though this does not rule out the potential learning opportunities that may lie in unplanned experiences. Nold (1978) built on Dewey's ideas and formulated a model that interprets Dewey's six points in a more formal way.

Others have continued to build and refine the early work but probably none has probably been more influential than the Outward Bound Process Model created by Walsh and Golins (1976, in Priest and Gass, 1997). Walsh and Golins identify seven important elements that are carefully crafted together: the *learner*, is placed into *prescribed physical environments*, and into *prescribed social environments*, then given a *characteristic set of problem solving tasks*, creating a *state of adaptive dissonance*, leading to *mastery or competence*, leading to *reorganization of the meaning and direction of the experience*.

There are a few important aspects of each of these elements. The process begins with the learner. It is suggested that there be some form of assessment to ensure that the program is appropriate and that the learner is motivated and ready. The use of unfamiliar prescribed physical environments that are multisensory, neutral and straightforward is critical. This gives participants an opportunity to see things that they might overlook at home and discover new things that might not exist at home. The model also recognizes the importance that other group members play in generating positive outcomes. Walsh and Golins suggest the importance of a small interdependent group of 7-15 people with a collective group consciousness, objectivity, autonomy, individuality, conflict resolution, trust, support and reciprocity. The group is then faced with a characteristic set of problem solving
tasks that utilize all the learning domains. These tasks are prescriptive or organized; incremental, progressive or sequential; concrete or recognizable, manageable, solvable, or achievable; consequential or worthwhile; and holistic and complementary. The presentation of tasks in unfamiliar social and physical environments generally creates a sense of anxiety in the form of dissonance. Faced with a gap between where they perceive themselves and where there are, students are faced with the possibility of adapting through succumbing, coping, thriving, and the like. Priest and Gass (1997) also emphasize the importance of challenge by choice as it is the student’s ability to choose that offers the power of personal growth. Through successfully resolving the adaptive dissonance the participant finds mastery or competence. This process of mastery often provides insights into meaning and significance in terms of increased self-awareness, self esteem, self-efficacy, belongingness, and so on that will be valuable in the student’s life.

Others have also built upon the Outward Bound process (Pheiffer and Jones, 1980; Joplin, 1981; Kolb, 1984, Priest 1990) and emphasize the cyclical nature of the learning experience. This emphasizes the experiential nature of the learning experience. All of the models combine to offer a form of framework within which to proceed with designing an effective curriculum.

**Designing curriculum**

Hopkins (1989, in Hopkins and Putnam, 1993) suggests seven points of curriculum design that will be useful for putting the process models into action. These include (1) identifying what job the curriculum has to do, (2) formulating a means of achieving the purpose, (3) selecting appropriate teaching and learning strategies, (4) producing the curriculum, (5) implementing the curriculum, (6) evaluating the effects of the curriculum on participants, and (7) modifying the curriculum. The last two are often overlooked steps that are critical if we are to take a long term view towards building effective programming. As educators we must be willing to assess the effectiveness of our implementations and be willing to adapt and improve.
Rhythm and sequencing are also an important aspect of curriculum design that is perhaps bit more difficult to quantify. Hopkins and Putnam (1993) suggest one possible sequence that includes intensity - quiet - intensity - recovery/rest - intensity. This format recognizes down-time between intense activities that provide time for a variety of forms of reflection. The authors also suggest that a rigid schedule is often not effective and that programmers need to recognize the importance of adaptability. If may be necessary to increase or decrease intensity or adjust the sequencing of activities to seek the needs of the group. In some instances adaptations may also need to reflect the individual needs of particular group members.

Lastly, it is worthwhile to reflect at least briefly on the role of instructors. Two identical programs may end up with different results due to the characteristics of the instructor guiding the group. It is important to consider that no two people will deliver a program in exactly the same way and that there are characteristics that can increase the effectiveness of instructors. It is also important that instructors are able to adapt their leadership style as the group gains competency. It may be appropriate for an instructor to start out with a teacher-centered approach and slowly shift towards a more facilitative approach. Greenaway and Bill (1989, in Hopkins and Putnam, 1993) suggest that instructors must:

- be sensitive to the group’s and individual’s emotion – know when and how to intervene, and when to take a back seat;
- show empathy towards learners (who are experiencing novel events);
- confront their own and the group’s feelings and not remain distant;
- be capable of ‘letting go’ of control in reviews;
- provide facilitation without feeling redundant as trainees take increasing responsibility for their own learning;
- act as a role model for others to follow, eg. continually review their own experience.

It is important to recognize that the success of our programs in achieving their desired outcomes does largely depend on the instructors. It is important to empower instructors
with the requisite tools to achieve success and to recognize that no outdoor curriculum will succeed without their help.

**Summary of program planning: Models and theory**

An examination of program planning models and theory allows us to make an effective bridge between the findings of outdoor education research and experience and the implementation of new or improved curriculum. The organizational change material illustrates the complexities of the field and the need to carefully consider the impact of change on organizations. Furthermore, it allows us to examine the various factors that determine whether or not change is going to be successful. This organizational view then builds a foundation upon which to examine models that are specific to outdoor education processes.

The work of Walsh and Golins (1976) in developing the Outward Bound Process model becomes a cornerstone in organizing ideas related to outdoor curriculum. The seven steps of this model provide an effective framework against which various findings can be placed in order to make future programming recommendations. This combined with an awareness of the need for flexible timing and sequencing can offer a strong starting point. The recognition that teacher and instructor attributes also play a critical role in determining whether or not programs achieve success is a final piece that also deserves attention. With this construct in place we are ready to move forward and see how the findings and experiences can be applied to specific programs like Discovery at St. George's School.
CHAPTER IV  Implementing Findings

OVERVIEW

Having reviewed the literature within the context of personal experience and having examined the theories of implementation it is now time to look at how this information can be used with a specific program such as Discovery 10 or with other programs at other organizations. In doing this it is important to retain sight of Hopkins' (1989) seven stages of curriculum development. Hopkins and Putnam (1993) have simplified this down to six steps that provide a useful guide for developing and implementing outdoor education programs:

1. Assess the needs of the client [school community]
2. Define program objectives
3. Develop the program
4. Run the program
5. Review the program with participants, especially after first attempt
6. Continue to monitor [and modify] the implementation of the program

Depending on the stage of the program being considered (is it a new or existing program) it may be necessary to complete all six steps or it may be justifiable to start with stage five. For existing programs this would largely depend on the amount of review that has been completed on the program to date and whether the needs and objectives are clear and current.

In the case of Discovery 10 at St. George's school, the needs assessment was only recently completed and the program's objectives (Appendix B) seem clear and current. The curriculum has been developed and implemented for one year and some review with participants has been undertaken. The findings of this thesis, however, have suggested a number of areas in which the program could be improved. It is therefore worthwhile to make program design suggestions that either acknowledge existing practices or suggest room for change. The next section of this thesis will focus on the specific needs of the Discovery program and make implementation suggestions. This review will be in the context
of the Walsh and Golins (1976) Outward Bound Process Model. A few additions will be made to emphasize a number of general program design considerations. The review will focus on the first five steps, which are most open to the influence of program design. The last two steps, mastery/competence and reorganization of the meaning and direction of the experience, are more personal and are largely up to the individual participant. This is not to say the instructor cannot play an important role in facilitating this transition, because they can and often do, but it suggests that mastery and transfer is an outcome of effective program design rather than part of the process itself.

The information has been organized around the format of Walsh and Golins' (1976) and emphasizes the importance of viewing outdoor education as a holistic and integrated endeavor. Recommendations are not broken down based on the four program outcome areas (personal/interpersonal, environmental, academic and outdoor skills) used throughout the thesis to emphasize the need for synthesis. This approach recognizes that through effective program design all four areas can be successfully addressed simultaneously.

Lastly, it is important to note that these recommendations are being made specifically for the Discovery program. These suggestions are based on generalized findings but by no means provide a blueprint for other programs. There are numerous factors that vary from one program to the next and making accurate transference can be challenging. The section following the discussion of the Discovery program will examine some of these issues and will be useful to practitioners trying to adapt the findings to their own particular needs.

**DISCOVERY 10**

The Discovery program at St. George's School, as outlined earlier in the thesis, is a unique all-year (10 month) outdoor education program for boys in grade 10 (15-16 years of age). The following are a series of brief program recommendations that are supported by the findings of this thesis and are intended to inform program design.
**General program design recommendations**

**Organized and structured**

It is important that the program is carefully organized and structured to support the program's stated objectives. This includes the need for a carefully crafted schedule that incorporates a balance between the time needs of the Discovery program and the academic requirements of the core academic subjects. It is clear from the research that programs that are poorly planned or do not include specific objectives are less successful in achieving outcomes.

**Integrated**

The integration of the core academic subjects into the Discovery schedule is paramount to maximizing the program's experiential nature. While on trips away from the school students should be working on academics and while in school instruction should include reference to outdoor experiences. Similarly, it is important that the teachers of the academic subjects recognize the need to integrate from subject to subject. A combined, project of study might, for example include elements of math, science and social studies.

**Holistic**

The program needs to be holistic throughout and recognize the different needs of varying types of learners. The use of a mix of teaching styles and activities that include a variety of senses will be more successful at achieving desired results.

**Instructors**

It is important to acknowledge that instructors and teachers are critical to the success of the program. For Discovery this includes the two teachers who are responsible for delivering the Discovery curriculum, the five or six teachers who deliver the core curriculum (math, English, science, social studies, and languages) and the outside instructors who are brought in to assist with specific out-trips. All of these people directly impact the students' experiences and will, in turn, affect the success of the program. These people need to be aware of, and
committed to, the program's objectives and be willing and able to embrace an integrated experiential approach. The following are a few important points relating to instructors. They suggest effective instructors are:

- well organized;
- empathic towards their students;
- supportive of the group setting;
- cognizant that doing is more important than listening;
- prepared to give plenty of feedback and encouragement;
- focused on teaching for transfer;
- prepared to offer positive feedback and encouragement;
- aware that they hold an important position as role-model;
- committed to creating a positive learning environment.

Though not specifically instructors, there is also an important place in Discovery for the use of mentors. Students who are evaluated to hold a low-self concept could be effectively assigned a personal mentor. This could be an older student in the school or an adult who could work with the students on a one-on-one basis. Any mentoring arrangement should include a support and training program for the mentor.

**Learners**

The types of students selected into the Discovery program will affect the program's outcomes. Because the program is limited to students at St. George's School, the pool of students from which to select applicants is rather narrow. As much as possible the selection process tries to be inclusive but enrollment is limited to 22 students out of a grade of 140. For the first two years of the program application numbers have almost exactly matched the number of program spaces but in the future enrollment numbers may require more selection. Socio-economically there tends not to be a great deal of variety in the students' backgrounds. One area of interest, however, is the cultural make-up of the group. The school's population is almost fifty-percent of Asian descent yet in the first year no members of this group applied and in the second year only two did. This is an area that lies outside
the scope of this thesis but is addressed in the research on the sociology of education, beginning with the seminal work of Pierre Bourdieu (1986).

Academic stability is perceived by the school as being an important criterion for acceptance. Due to the time away from academics (particularly languages and math) the school's academic staff are not keen on the program accepting students with failing grades. In selecting applicants it may be advisable to:

- emphasize the importance of cultural diversity;
- give priority to students with low self-concept;
- not limit applicants based on academics (unless they are failing);

**The social environment**

Creating an effective social environment is a critical element in determining successful program outcomes. The following are a number of areas that need to be addressed:

**Cohort groups**

Students need to stay together as much as possible in order to develop a strong social community. The Discovery program is based on a cohort model where students stay together for their academic subjects. This varies from the standard secondary school arrangement where students select from a variety of courses, which they take with different students. By staying together students get to know each other very well and are able to support each other in their learning.

**Out-trip groupings**

When on out-trips the class is divided into two groups of ten to twelve students (for activities in avalanche terrain the groups are usually smaller). This allows for a group that meets the recommended group size of 7-15 students in which maximum interaction and learning can take place. The composition of each group is changed for every out-trip to give students an opportunity to work with other program members and experience different leadership styles.
Supportive environment

The creation of a supportive environment in which students feel safe to express themselves is a critical component of successful learning. The facilitation of this type of environment should be of prime concern to the instructors. The following guidelines may assist.

- The nature of a supportive environment should be explained to students.
- As necessary, the students should be reminded of their role.
- Students who are not being supportive should be dealt with quietly and quickly.
- A venue for sharing concerns should be created.
- Tools for effective conflict resolution should be utilized.

The physical environment

The environment while in school is less open to adjustment or control but experience has shown that it is useful for the students to have a single classroom that they can identify as their 'home base'. This provides the opportunity to post schedules and calendars and keep students aware of upcoming events, trips, etc. Ideally all classes would be taught in the Discovery classroom.

The choice of environments for out-trips offers far more opportunity for selection. The main area of contention is the degree to which areas need to be wild, untouched or natural. This seems to be still open to interpretation and debate but it would seem appropriate that at least some visits should be made to areas that offer at least the illusion of being pristine. The lack of other visitors to the area during the experience seems to be more important than whether or not the area has been visited before. Environments should:

- be novel and offer a change from normal routine;
- be stimulating and interesting;
- offer a sense of wilderness;
- should allow for the group to have private space for activities and reflection;
- offer the opportunity for physical challenge;
Problem solving tasks and activities

Given that we have the right students, social environment and physical environment, what activities should they partake in to maximize their experience? Unfortunately, there are no easy answers to this question. What might work with one group may not succeed with another and, similarly, different activities might be capable of achieving the same outcomes. The purpose of this thesis is not to provide definitive lesson plans but rather to provide suggestions that are flexible and capable of employing a variety of teaching strategies. Discovery 10 is a somewhat complex program in that involves a mix of activities at school and away in the field. While some activities and tasks will bridge between the two locations others do not. Because of the goal of integrating these two teaching venues, design recommendations have not been separated. Some will be more applicable outside and others will work equally well inside the classroom. After looking at a few trip logistic items it will be possible to review the processes and activity design features that the research supports as being most effective.

Trip logistics

There are a few logistical items that need to be considered when planning out-trips:

- Trip Length: a progression of length is important. Start with shorter trips and build up to longer trips. Longer trips seem more effective in generating positive change.
- Activity Types: a variety of activities helps avoid complacency and provides more opportunities to create a new sense of adaptive dissonance.
- Level of Challenge: should be suitable to generate uncertainty of outcome while still maintaining likelihood of success. As students gain proficiency level of challenge will have to be increased.
- Expertise: it is important that programs are conducted within the expertise and experience of the instructors involved.
- Costs: are always a consideration when planning activities.
Activities

Creating a sense of adaptive dissonance for personal growth and maximizing learning involves utilizing an ongoing stream of activities and tasks. While the activities themselves might vary depending on whether a personal, environmental or academic outcome is desired, the underlying principles largely remain unchanged. The following are a number of suggestions:

♦ There should be a commitment to the value of direct experience.
♦ Time and importance should be assigned to the process of reflection and processing.
♦ Students should be encouraged to set personal and educational goals.
♦ Activities need to be integrated between outside and inside the classroom.
♦ There needs to be integration between subject areas.
♦ Programs need to be holistic and multi-sensory (e.g., dramaturgy, archetypes).
♦ Timing and sequencing of activities should be flexible in order to reflect the needs of the learners.
♦ There should be a progression from easier to more difficult activities in order to build a sense of accomplishment and success.
♦ Tasks should be fun.
♦ Rituals and ceremonies should be incorporated into program design.
♦ Experts can be utilized to strengthen learning opportunities.
♦ With environmental topics it is better to go deep than wide.
♦ Utilize acclimatization activities to assist students in the transition to the outdoors.
♦ Emphasize social and environmental awareness with all lessons.
♦ Assist students to question historical narratives.
♦ Teach students to address risk assessment and management issues themselves.

Adaptive dissonance

The creation of adaptive dissonance is a cornerstone of the adventure process model. When designing any program or individual task it is important to question whether or not the
task(s) in question will assist the student in reaching a state where this dissonance will take place. Tasks need to sufficiently push the individual or group’s comfort zone to where they see or feel the gap between where they are or where they might like to be. This may be more obvious in an outdoor activity but it can also be equally applicable in the school. If students see where they are academically, for example, and where they would have to be to achieve what they perceive as success then there exists an opportunity for motivation. The student could choose to give up or they could decide to complete the necessary work or steps to eliminate the dissonance in a positive way. Their choice will determine whether they move forward to mastery and competence.

It is important to recognize that the types or intensity of task required to create an effective level of dissonance can vary from student to student. Tasks must be flexible enough to adapt to the needs of the individual. It is the role of the instructor to ensure that the level of challenge in the activities is suitable for each individual and that dissonance is being maximized in a controlled fashion.

**Summary of implementation at St. George’s School**

This thesis has attempted to cover a great deal of ground in terms of considering the role of outdoor education and the Discovery program. The findings, however, can be simplified down to two primary points. The first is that there is a strong body of literature to support the finding that outdoor education does in fact achieve positive outcomes. In the area of personal and interpersonal growth the evidence is relatively strong whereas in the environmental and academic realms there is definitely a need for further research. As for developing technical outdoor skills and promoting lifelong physical health the outcomes seem relatively straightforward. This supports the premise that the Discovery program is worthwhile and is capable of making a positive difference in students' lives.

The second major point is that outdoor education is a complex compilation of subjects and philosophies that are not always compatible or universally agreed upon. There are definitely some processes that are more effective than others. It is important that the Discovery program's instructors implement those processes that show the most likelihood of success.
The results of these processes should then be carefully examined to determine which are most successful. It is only through this process of implementation, review and adjustment that true progress will be made.

Now that the inaugural year of Discovery has been completed it is already possible see the early successes and shortcomings of the program. There are some areas that have been very successful and others where adjustment is required. The use of an ongoing system of program evaluation is beginning to shed light on what systems work within the specific St. George’s context. By evaluating the students’ experiences and comparing the actual outcomes to those that are being sought, the process of ongoing program development has begun. The infusion of the findings from this thesis will further add the programs ongoing genesis. Ultimately, to maximize its potential, the Discovery program needs to remain a work-in-progress. The influence of the literature in the field and the actual experiences of the program will, hopefully, continually shape and re-shape the program.

PROBLEMS WITH THE TRANSFERABILITY OF FINDINGS

There are a number of areas that pose significant problems for the transferability of findings from one program to another or from research into implementation. This is also relevant to the application of findings to the Discovery program. These problems can be broken down into two groups: those that are based on program structure and those that are based on the socio-economic characteristics of the people involved (instructors and participants).

Program structure

In evaluating a given program it is relatively easy to identify the structural components of program. These include things such as course location (wilderness or residentially based), program length, program type (challenge course, van-camping, or unsupported wilderness travel), size of groups, types of objectives (personal/interpersonal, environmental, academic, technical skills, and the types of activities being conducted. How transferable findings will be based on changes in these variables is not easy to determine but at least they are relatively identifiable. If, for example, we only compare programs of five days in duration then the impact of this particular variable is limited. If, however, we take findings from a five day
program and try to apply them to a 20-day or, in the case of Discovery 10, a 10-month program it is unclear how successful we will be. It is important therefore to recognize that any comparison between programs must take into consideration a wide range of program structure variables.

Social and economic variables

These include variables such as gender, sexual orientation, ethnicity, family background, and economic position of both participants and instructors. This is a complex area that goes beyond the scope of this thesis but it is important for consideration. Many of these variables are not explicitly stated in studies and it is cause for concern when taking findings and applying them to a specific program with a unique population (such as St. George’s). Similarly, the implementation of ideas from St. George’s to another program could be problematic.

The impact of these socio-economic variables can, I suggest, play a significant role in shaping the outcomes of a particular program. The relatively homogenous group of students that comprise the Discovery program illustrates some of the potential for concern. All of the students are 15-16 year old boys of European descent from similar socio-economic backgrounds. The values to which this group espouses tend to be very similar and self-reinforcing. Conversations amongst the students tend to reinforce existing values and further add to a homogeneity of thought. It is interesting to consider why, in a school that is 50% Asian, only two Asian students have applied in two years. What is it about the Discovery program or the type of students it attracts that does not appeal to students from Asian families? Is it a perceived lack of academic emphasis, a fear of the outdoors, or a concern for entering a group in which they would be a minority? Furthermore, what is the impact of having male instructors of a similar socio-economic profile to that of the students? These questions beg further examination. For the purpose of this thesis, however, it is sufficient to recognize that every program generates and reinforces values based upon the make-up of the participants and instructors. This suggests an area that programmers need to be aware of both within a specific program and when considering transferability between programs. Ignoring these variables could be a serious oversight that would impede the goal of using outdoor education for the betterment of society.
Summary

Through the examination of theory and practice it has been possible to make design recommendations that hold the potential for positively shaping programs. The combination of theory and practice allows for a critical examination of both the outcomes and processes that shape programs around the world. The difficulty arises in the transference of this information to different types of programs. How successful any application of findings will be is subject to a host of variables. No two programs will ever be alike just as no two instructors or group of students will be the same. What is important to recognize, however, is that recommendations that result from theory and practice provide an educated starting point. We need to recognize that we do not hold a recipe for success but rather a collection of ideas that are ready to be tried in a specific context.

To address the sub-questions of this thesis, there are no easy answers as to exactly what successful programs should look like. We cannot prescribe specific program lengths or locations and there is no list of activities that assure success. By example, the recommendations for the Discovery program stated in this thesis hold no guarantees but they are informed. They represent a researched approach that provides a starting point. What is now required is implementation and ongoing assessment.

The validity of an idea can only be confirmed through actual implementation. It is therefore critical that the results of theory and experience are used to shape the processes of practice. The next step is to ensure that the tools and resources are in place to assess outcomes. The results of this form of evaluation can then be used to accept, abandon, or make adjustments to a particular idea. It is this process of informed implementation, assessment and adjustment that holds the key to successful program development.

In response to the central question of this thesis, yes, theory can be used to create conceptual frameworks and influence the design of programs. But, we must tread cautiously and never assume that our findings are conclusive. If we heed this and continually evaluate
our programs then we should be well positioned to make a significant contribution to the
youth of today and the future.

Suggestions for further research

While this thesis has provided a number of answers, it has also raised a host of questions
and identified areas for further research. While there does seem to be reasonable evidence
to suggest that outdoor education provides positive outcomes in the areas of
personal/interpersonal and outdoor skill/physical fitness development the results are not as
clear in the areas of environmental and academic curriculum integration. Further
examination into the ability of outdoor education programs to generate positive outcomes in
these areas is needed. Furthermore, in all areas there is need for a more in-depth
examination into what processes are significant in generating the desired outcomes. There
needs to be more research into the specific experiences of participants and instructors and
which aspects of programs they see as generating the most significant outcomes.

All of this further research needs to be conducted with careful attention to the structural
components of programs and the socio-economic profiles of participants and instructors. It
is important that these variable are considered and their impact on outcomes noted.
Specifically, research into socio-economic variables may offer insights into how groups and
instructors are selected and how social issues are dealt with in the field.

Outdoor education offers great potential in offering the type of citizenry education that the
field's forefathers (Dewey, 1938; Hahn in Cousins, 2000) once envisioned. But, to maximize
this reality in the twenty-first century will require a further understanding of the subject.
Educators need to assess the success of their programs, consider which processes are most
effective and be willing to share their findings in order that the collective knowledge of the
field may grow. It is the continual process of research and implementation that will provide
maximum benefit to youth and society.
**Bibliography**


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Appendix A: Personal and Interpersonal Terminology

**Self-concept** refers to, “the way in which a person views or perceives himself, his attitudes, beliefs, feelings, and personal expectations” (Patterson, 1972 in Ewert, 1989, p.49). This is the overarching principle of self-confidence and includes a number of constructs including self-esteem, self-efficacy, and locus of control.

**Self-esteem** is a, “set of attitudes and beliefs that a person brings with him or her self when facing the world. It includes beliefs as to whether he or she can expect success or failure, how much effort should be put forth, whether failure at a task will ‘hurt’, and he or she will become more capable as a result of different experiences. In psychological terms, self esteem provides a mental set that prepares the person to respond according to expectations of success, acceptance and personal strength” (Coopersmith, 1989, in Enkey, 2001, p5). Self-esteem is “the gap between one’s ideal self and one’s actual self or between one’s ideal self and reality’. Self-esteem is the most important dimension of one’s self-concept” (Callaghan, 1991 in Barrett and Greenaway, 1994).

**Self-efficacy** “refers to personal judgements of how well one can perform actions in specific situations that may contain ambiguous, unpredictable and stressful features (McGowan, 1986)” (Ewert, 1989, p. 91).

**Locus of Control** “refers to the extent to which individuals feel they have some control over their own lives (internals), compared with the feeling that life’s events depend upon circumstances beyond their control (externals)” (Rotter, 1996 in Barrett and Greenaway, 1994, p. 44).
Appendix B: DISCOVERY 10 PROGRAM INFORMATION

Discovery 10 is an integrated outdoor education program at St. George’s School. The program is limited to twenty-four students who form a cohort group for the duration of the school year. The program focuses on four key areas: outdoor skills; personal and interpersonal skills; environmental awareness, ethics and stewardship; and academic integration. By having students in a cohort group, teachers are able to schedule around out-trips and conduct catch-up blocks when students are in school. The group takes their core academic subjects (Math, Science, English, and Socials) together. Students in Honours Math leave the cohort and join the regular Honours block. The cohort group is disbanded for one language block and one elective block. Students take two scheduled Discovery blocks. These classes cover the PE and CAPP curriculum, provide time for trip planning and learning outdoor skills, and time for catch-up for classes missed due to out-trips. Trips during the year range from two to seven days and cover a range of outdoor activities (sea kayaking, canoeing, hiking, rock climbing, snowshoeing and cross country skiing). Over the course of the year students are away for approximately forty-five days. The academic year ends with exams during the last week of May, allowing students to participate in an extended expedition style trip during the month of June. Discovery students do not participate in the standard grade ten Sea to Sky program in May. Interest students and their parents are invited to attend an informational session in April of their grade nine year prior to applying.

PROGRAM OBJECTIVES students will:

Inter and Intra Personal Skills
- Consider who they are, what their own strengths and weaknesses are, how they make decisions and how they deal with adversity.
- Consider how they work in a group, what the strengths of others are, different leadership styles and how groups evolve.

Environmental Awareness, Ethic and Stewardship
- Gain knowledge about the natural environment through field study.
- Address issues of sustainability and how humans interrelate with the natural environment.
- Begin thinking about their own environmental ethic and issues of stewardship.

Academic Integration
- Experience connections between classroom and in-the-field learning. English, social studies and science lessons will be directly connected to experiences on out-trips.
- Use journals and other field assignments to reinforce classroom objectives.

Outdoor Skills
- Develop skills in a range of outdoor activities (canoeing, sea kayaking, hiking, rock climbing, back country skiing, mountain biking, etc)
- Adopt general low-impact camping skills that students can use to travel “lightly” in outdoor places.
- Learn to maintain personal health outdoors (food preparation, water treatment, staying warm and dry, etc)