Re/Imagining Indigenous – Western Knowledge Relationships
A Case Study, Trent University Indigenous Environmental Studies Program

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Abstract

The past few decades has seen recognition of the vital role Indigenous peoples and their knowledges play in conceptualizing solutions for the environmental issues facing the world. With political support from governments, the UN and environmental groups, knowledge integration between Eurocentric western and Aboriginal knowledges is increasingly sought after. However, in Canada and the US the current state of knowledge integration practices tends to be extensions of a long-standing history of imperial and colonial attitudes and treatment towards Indigenous peoples. Despite the legacy of colonialism, Indigenous peoples are engaging in decolonization and resurgence efforts to restore their own cultural practices and integration methods. Research and Education are two of the main practices which employ Western-Indigenous knowledge integration methods which are explored within this major paper.

In this paper I explore the current theories and practices surrounding Indigenous-Western knowledge integration within environmental education and research contexts. I approach these subjects respectfully as a woman of euro-Canadian ancestry, raised with significant influences from the Catholic Church and education system and make every effort to acknowledge my privileges and inherent biases throughout the paper. As an ally to Indigenous revitalization, a significant portion of the paper is dedicated to giving space and voice to Indigenous authors and Indigenous approaches to these topics. I also introduce an Appreciative Inquiry research methodology as Indigenous Research Methodology as a means for which allies can approach an Indigenous Research Methodology.

Finally, this paper explores the creation and implementation of the Trent University Indigenous Environmental Studies program, the first degree granting program of its kind in North America. It examines the evolutionary process of the program, its influencing philosophies, individuals and conditions. It also evaluates the program in the context of the Naturalized Knowledge Systems framework originally put forth by Henry Lickers, identifies areas of strength and concern. It is the ultimate aspiration of myself as well as the program director that this paper ultimately serves to inform other individuals/institutions as to one example of how to foster an academic environment of knowledge integration.

Foreword

My Plan of Study is primarily concerned with Western-Indigenous knowledge relationships, specifically within research and education. The topic of my research paper is directly linked to my POS component #2: Decolonization and Restoration of Indigenous Research Methodologies, as it is providing me with a practical application of integrating a Western research methodology into an Indigenous research paradigm while experiencing and documenting my experience within Indigneous-Western knowledge integration in this form. It also relates to my POS through the research's definitive goals to evaluate the knowledge-integration practices of Trent University's Indigenous Environmental Studies (IES) Program. This relates directly to component #3: Western-Indigenous Knowledge Integration in Education. Both aspects of the research topic are inter-related and fall under my learning component #1: Western-Indigenous Knowledge Integration, which encompasses all of the processes, theories and critiques of current integration practices I must navigate in my research.

Acknowledgements

So many beings and entities contributed to the creation of this work and thinking and so I offer my gratitude; niawen'kówa, chi miigwech, dank u wel, thank you to my family and friends for supporting me in multiple ways to achieve this goal. To my mentors and academic inspirations; Brigitte, Dan, Ravi, Tim and my fellow MES peers for keeping my fire lit throughout this process. To my son Elliott and four legged companion, Huxley for keeping me grounded and surrounded by love and laughter through my learning journey. Niawen'kówa, chi miigwech, dank u wel, thank you, to the lands and places in Southern Ontario and Northern New York State and to the non-human beings who supported me both physically and spiritually throughout this process. My gratitude goes out to the ancestors, both my own and those of the lands which I currently occupy, as well as the coming generations; this work is dedicated to you both.

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1.0 Introduction

1.1 Relating and Situating

Before I delve into the content of this paper, it is imperative that I introduce myself in a good way (Wilson 2008; Absolon 2011). Shawn Wilson speaks at great lengths about the concept of 'relational accountability' in his book; *Research is Ceremony* (Wilson 2008). He wrote his book in two fonts; one font to denote personal communication, often addressed to his three sons in order to create a sense of relationship between author and audience, and the other in an academic font to fulfill the requirements of his PhD thesis. While I will maintain the same font throughout this paper, I wish to create a relationship with, and be accountable to, my readers much the same as Wilson did. I will spend a brief moment clearly addressing the questions of; *who* is writing and *who* is the intended audience, so that you may better understand the context of my writing.

I approach this subject matter respectfully as a woman of euro-canadian ancestry, raised with significant influences from the Catholic Church and education system. I am second generation Canadian on my mother's side who came to Canada from Holland, following the atrocities of WWII. On my father's side I am 20-something generation Canadian, originally from Scotland. My Dutch ancestors forged one of the earliest treaties with the Mohawk peoples exemplified in the Two Row Wampum Treaty Belt (Porter 2008). The intent of this treaty – for two parties to travel down the same river in peace, neither disturbing nor altering the other embodied an ethic of non-interference (Simpson 2011; Ross 1990; Brant 1990; Barker 2010). I am attempting to embrace my responsibility to this treaty and re-establish the mutual respect, peace and understanding my ancestors acknowledged so many years ago. The Two Row Wampum Belt Treaty greatly influences my thinking and approach to knowledge relationships.

In the spring of 2011 I was honoured in ceremony with a traditional Anishinaabeg name. In Anishinaabeg tradition, one would introduce themselves in the language, in the proper way, before anything else. However, because I am not of Nishnaabeg descent I chose to re-introduce myself here, thus acknowledging this part of my identity as second to my Euro-Western heritage.

Aanii,
Ndishnikaz Tabusung
Kingston, Ontario ndojeba
Guelph, Ontario ndinndaa

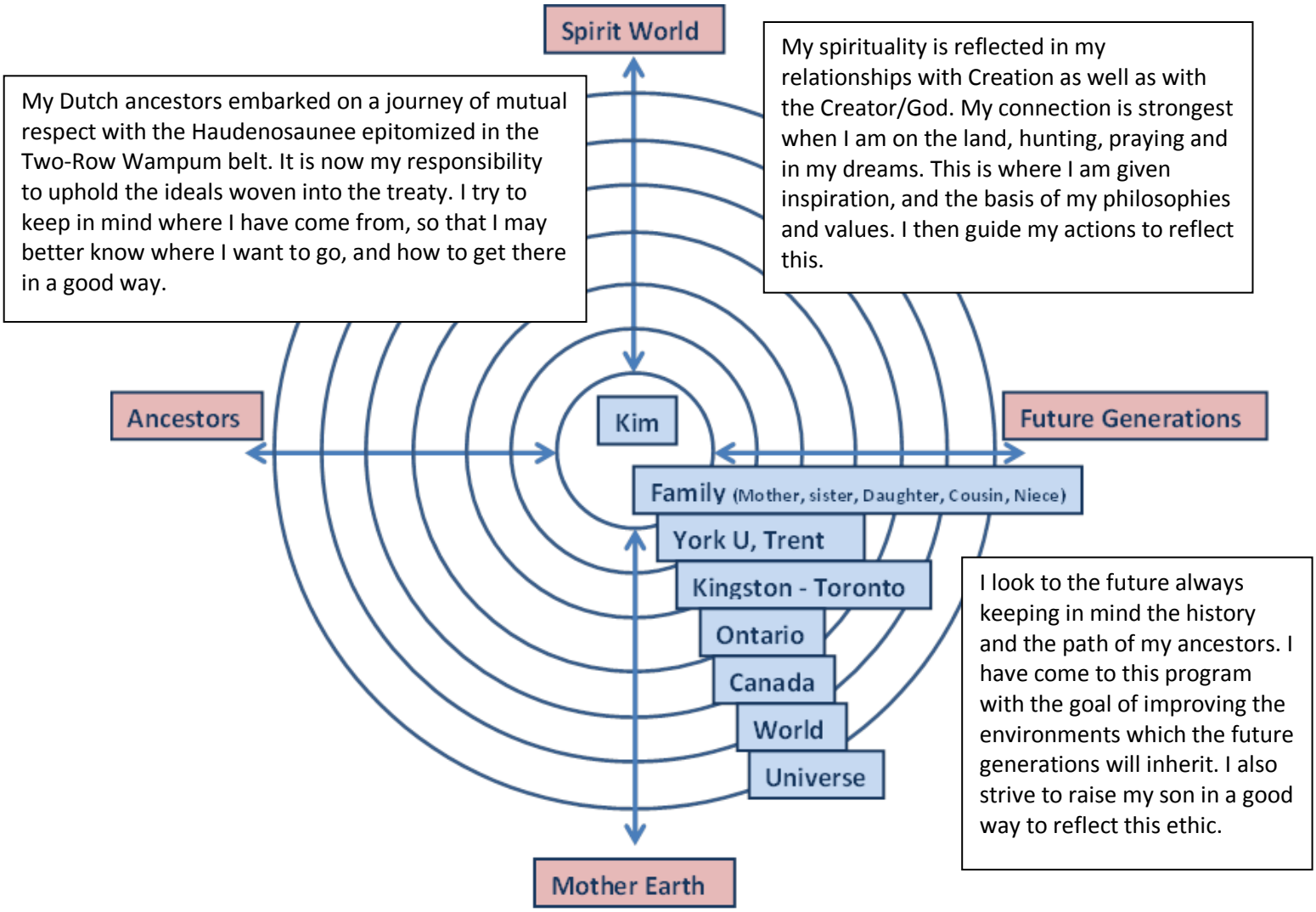
Hello,
My name is Tabusung
I currently live in Kingston, Ontario
I am from Guelph, Ontario

The name Tabusung means, "Where the lightning strikes". It is an action name, a catalyst, a force of energy. My mother has told me that ever since I was a child, I have always been drawn to storms, excited by thunder and lightning and never frightened as my siblings often were. After receiving my name I have become more even connected to, and aware of, the energy of thunderstorms and lightning, mentally and spiritually.

I conceptualize my knowledge as being constantly, "in motion" or "in relation" to myself and other knowledges. What follows here is merely a snapshot of my understanding of the knowledges I have experienced at this explicit moment in time. I relate ideas and knowledges I am exposed to through my life journey and my studies back to the epistemological framework I come from and then attempt to re-project a collective understanding in such a way that it lifts the edges of the dominant narrative of knowledge, incrementally creating space for a new relationship.

My academic background consists of an undergraduate degree in Indigenous Environmental Studies from Trent University and my professional background includes a host of positions held in the outdoors, education, municipal government and environmental realms. My personal influences are made up of being a mother, academic and activist. Combined, these backgrounds created my interest in the relationships between Western and Indigenous Cultures. My studies at Trent University along with my experience working with the Sacred Water Circle taught me to seek the spiritual and cultural dimensions in every issue; while some of my studies also taught

me core scientific values such as empirical research and critical thinking. One of the teachings I have received from Mohawk teacher, Dan Roronhiake:wen Longboat is to always know your place in the Universe in relation to Creation and so I situate myself thusly;



My writing is for all of those who are traveling along the paths of the environmental and native sciences; those with an interest in environmental education, interdisciplinary studies, and cross cultural relationships with First Nations Peoples. This paper is especially for non-indigenous

scholars and students seeking to understand our place(s) in this relationship and fields of study. While much of the writing in these fields has been by and for Indigenous scholars (Simpson 2004, 2011; Smith 1999; Wilson 2001), I will attempt to address the role of the settler in these Western-Indigenous knowledge relationships according to my experiences and education.

1.2 Opening Words of Gratitude

To acknowledge my greater relations, I will use the words of the Mohawk Thanksgiving Address; Ohen:ton Karihwatehkwen; *The Words that Come Before All Else* as taught to me by Mohawk teacher Bonnie-Jane Maracle; Iehnhotonkwas.

Kentiokwa, sewatahonhsi:iost ken'nikarihwesha. Ne:'e kati tehtshitewanonhwera:ton ne Shonkwaia'tison ne:'e wahi rohsa'anion akwekon tsi naho:ten teiotewen:rie ne tsi ionhontsa:te.

Tehetinonhwera:ton ne;
Onkwehshon:a; Iethi nistenha tsi ionhontsa:te;Ohneka'shon:a; Kentsion'shon:a; Ohonte'shon:a; Kahi'shon:a; Ohtera'shon:a; Tionhehkwen; Ohnonhkwa'shon:a; Karonto'shon:a tanon okwire'shon:a; Kontirio; Otsi'ten'okon:a; Otsi'nonwa'shon:a; Kaie:ri Nikawera:ke; Ratiwe:rahs
Tehtshitewanonhwera:ton ne;
Tiohkehnekha Karahkwa
Tehetinonhwera:ton ne;
Iethi'sotha Ahsonthehnehkha Karahkwa; Otsistohkwa'shon:a
Tehtshitewanonhwera:ton ne; Shonkwaia'tison

E'tho niiohtonha'k ne onkwanikon:ra. Tho niiowenna:ke.

I also give thanks; niawen'kówa, chi miigwech, dank u wel, to the Ancestors and to the future generations. This work is as much for them as for those here now. My intention is that my work here will contribute to the assemblage of knowledges coming together from the four directions in order to promote, enhance and sustain all life. Conveying gratitude is a means by which I attempt

to prepare myself for engaging in these thoughts and conversations and commence a process of Biiskaabiyaang (Simpson 2011; See Section 3.3). I invite you to do whatever you may need to in order to participate in this work with peace and an open mind.

1.3 Terminology

I use the term Indigenous to describe any of the Earth's First Peoples and where possible, I will use the chosen name of a group (ie; Haudenosaunee, Anishinaabe). It is imperative to recognize that Indigenous peoples, communities, knowledges, values and methodologies are not homogenous and therefore will always be pluralized to acknowledge differences and uniqueness. It should also be noted within the literature there exists various related terms for Indigenous Knowledge (IK) such as; traditional (ecological) knowledge (TK or TEK) and local knowledge. I will be utilizing the term Indigenous Knowledges to acknowledge the heterogenous nature of knowledges across Indigenous cultures. To define my use of the terms eurocentric and western I borrow on Kovach's definition as she describes;

> *"a particular ontological, epistemological, sociological, and ideological way of thinking and being as differentiated from Eastern thought, an Indigenous worldview, and so forth. It is understood that Western thought is not monolithic or static, that it holds within it rich diversity and contributions; however, this [paper] is not devoted to examining the intricacies of a Western worldview" (Kovach 21) [It is however a paper concerned with Indigenous knowledges, methodologies and education and so] "by necessity must examine Western colonialism and its influence on Indigenous knowledge. The purpose is not to propagate unhelpful binaries, but to point out that Indigenous approaches to seeking knowledge are not of a Western worldview, a matter that colonialism (and its supporters) has long worked to confuse" (Kovach 21).*

I intentionally use the lower case for eurocentric and western to disrupt the privileging of these terms (Evering 2012).

Carter and Little acknowledge that "*Method*, *methodology*, and *epistemology* are defined in conflicting ways in the research literature" (Carter and Little 1317). Epistemology will be defined for this paper as, the study of knowledge; how it is acquired, understood, legitimized, and connected to aspects of truth, belief, value and culture. It should also be noted that there is no equivalent word for *epistemology* in any Indigenous culture (Cajete 2005) "However, there is certainly a body of understandings that can be said to include what this branch of Western philosophy would explore as the origins, nature, and methods of coming to know a way of life" (Cajete 69). In defining methodology I borrow from Schwandt's definition that it is an "analysis of the assumptions, principles, and procedures in a particular approach to inquiry" (Schwandt 161). Method is the action of research where epistemology and methodology take form. Indigenous methodology will be defined in detail in section 3.0.

1.4 Creation Stories and Language

When Anishnaabe scholar and Professor Deborah McGregor teaches her course at the University of Toronto, she always begins with Creation stories (McGregor 386). She explains that Creation stories are "conceptual frameworks that provide an Indigenous understanding of our own relationships to all of Creation" (McGregor 386) and chooses to begin her classes with these stories to illustrate that Indigenous peoples had "well-developed philosophies or conceptual frameworks, ethics, and values that had flourished for thousands of years" (McGregor 386) prior to European contact. "I do not begin with the newcomers' understanding of us, with their theories and assertions, but instead start with our own" (McGregor 386). I have included two abbreviated Creation stories below to acknowledge my own Christian roots, as well as the Creation story of the Haudenosaunee which has been a significant influence in my being and learning. Although Anishinaabe teachings and culture have been significant in shaping my thoughts, learning and sense of self, I have elected not to include a Creation story here because one has not been shared with me in a personal way. I fully acknowledge that I am unable to truly encapsulate the full teachings within the Creation stories as they have been given to me, in a good way in this form and accept responsibility.

In the beginning God created the heavens and the earth. He then said, "Let there be light" and he saw that the light was good and so he separated the light from the dark and that was the first day. He then separated the waters from the sky and called the sky Heaven on the second day. Then God separated the water from the earth, creating land and sea. He called for the earth to sprout vegetation in the varying forms of plants, trees, fruits and vegetables and that was the third day. On the fourth day God created the lights in the heavens, the Sun and the moon and all the stars to light the earth. Then God created the creatures of the sea and the birds of the sky and he told them to go forth and multiply and be fruitful and that was the fifth day. On the sixth day God created the beasts and animals of the earth and then set out to make man in his image.

26. So God created man in his own image,
in the image of God he created him;
male and female he created them.

And he gave them dominion over all the animals, plants, fish and beasts he had Created and told them to be fruitful and multiply, to fill the earth and keep the gardens and animals that God had set in their custody. And God saw everything that he had made and saw that it was good. (The Bible EVS; Genesis 1)

I offer Paul Williams, Kayanesenh's words speaking about the Haudenosaunee Creation story;

The Creation Story tells us of the great relationships within this world and our relationship, as human beings, with the rest of Creation. We learn how the Sky Woman became our Grandmother Moon, of how her daughter became our Mother Earth. We understand why we consider animal and plant life our Brothers and Sisters. When we are born, we are born with numerous relatives to greet and welcome us. We are born as part of Families, Clans, Communities, Nations, the World, and the Universe. When we are born, we may be naked, but it is our relatives,

> *from the rest of Creation, who will share what they have for our continuing support (Haudenosaunee Environmental Task Force 2).*

The Creation story forms the backbone of the Haudenosaunee culture teaching human beings how to relate to each other, the environment, all Creation, and how to organize themselves, conduct ceremony and so much more. What follows is my personal recounting based on the oral stories told to me by Dan Longboat and Ryan DeCaire with input from Tom Porter's book *And Grandma Said: Iroquois Teachings as passed down through the oral tradition* as well as the Haudenosaunee Environmental Task Force (HETF)'s book *The Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee.*

> *The story begins with Skywoman who falls from the Sky World as she is pregnant, grasping at dirt and roots as she falls towards a water world. The birds slow her fall and she rests on the back of a giant turtle while the water creatures attempt to bring her earth from the sea floor. With the earth she danced what is now known as 'Turtle Island' (North America) into existence. She plants the roots and seeds she grabbed during her fall and gives birth to her daughter. Her daughter grows up and is impregnated by the North Wind and gives birth to twin boys and dies during childbirth. Their grandmother, Skywoman raises the boys. One of the boys is of a good mind 'Teharonhiawako or Creator', and the other a devious one sometimes known as 'Flint'. When the brothers were grown they used their creative powers to create life on the earth. The good minded brother created deer, flowers, and other beings, while the devious brother followed and created wolves and put thorns on flowers… When all of Creation was finished, the Creator made the human beings and gave unto them original instructions just as he had the plants and animal beings.*
>
> *Teharonhiawako, gave original instructions to all the beings when he finished creating them. To the plants and animals he said go and reproduce for other beings will rely on you just as you will have to rely on them. He also told them of the coming beings, human beings. These beings will come and they will need you to sustain*

> *them. When the human beings were created, Teharonhiawako told them that they were to take care of the plants and the animals and to always give thanks. Prophecy tells that if there comes a time when the human beings no longer give thanks to the Creator and to Creation, then the animals will disappear, as their instructions are to provide for the human beings, and if the human beings are no longer expressing gratitude and following their instructions, then it is understood they no longer require the animals. Some versions of the prophecy say the animals will turn white and retreat into the forest, other stories simply say they will disappear (Longboat 2012; DeCaire 2013; Porter 2008; HETF 1992).*

Haudenosaunee oral teachings describe the interdependencies of Creation and how humans are to give thanks. The importance of giving thanks and expressing gratitude, so vital to Haudenosaunee culture, is expressed through the Ohén:ton Karihwatéhkwen, The Words That Come Before All Else, or the Thanksgiving Address. The Ohén:ton Karihwatéhkwen is a ceremony which Paul Williams, Kayanesenh describes as "Giving thanks together, recognizing the power and duties of every part of the World, and joining our minds and determinations together to fulfill the obligations of human beings in the web of life, is the proper way to begin to approach any environmental problem" (HETF 1). The following is an excerpt from the Ohén:ton Karihwatéhkwen as spoken by Danny Beaton;

> *"As we travel about on this sacred Mother Earth we look around us and see that it is a new day it's a beautiful day for this sacred day for this beautiful day. We put our minds together in that special way, the way our ancestors taught us and we give a great thanks to our relatives; for the four-leggeds, the winged ones, the insects and the fish life. It was our ancestors that taught us, you will never forget your relatives… For the spirit of our relatives, for the beauty of our relatives, for sharing this Mother Earth with us, we give a Great Thanks, Nia:wen" (Danny Beaton 2012).*

It has been my experience that relationships are at the core of many Indigenous stories, teachings and philosophies. Relationships are prominent in Indigenous pedagogies, Indigenous spiritualties, and Indigenous methodologies as we will see in the next section of this paper. If Creation stories offer the first teachings of relationships, then these teachings are strengthened through the use of traditional languages.

Consider the Mohawk language. Mohawk is a verb-based language centred on relationships. For example; in English we convey a feeling of 'possession' of the people in our lives, 'my mother' and 'my girlfriend,' whereas in Mohawk, words are phrased in a way that describes the relationship to the person, "She who is a mother to me" or, "She who mothers me". Even commonplace nouns find themselves expressed through relationships; a chair is "that which holds me up…" (Decaire, personal communication, 2010). Language can then be understood as an articulation of the Mohawk epistemology and a cultural understanding of everything being in relation to each other. A concept stressed within their Creation story. Combined, the Creation story and language articulate the beliefs, attitudes, behaviours, and culture associated with the Haudenosaune. This resonates deeply with Dan Longboat's teaching of the bio-cultural framework (See 2.1, Fig 1 & 2)a final reflection of the deeper manifestations of a people developed over hundreds of years. Research, as discussed within this paper, can be understood as behaviour; Indigenous research and methodology can then be viewed as a product of one's Creation teachings and language influences.

Mino bimaadiziwin is an Anishnaabemowin word which translated simply means; "living the good life" (Simpson 2011, 17). This is just a surface-level English translation of a word so complex, so riddled with meaning and levels of understanding that it may denote an entire lifestyle and belief system of the Anishnaabe. In 2010 I attended the 33rd Annual Elders & Traditional Peoples Gathering at Trent University. That year the conference was entitled; *Mino bimaadiziwin: Living the Good Life.* I attended various speaker series, roundtable discussions and workshops all speaking about *Mino bimaadiziwin* in different contexts, but with similar underlying values. There were workshops about living the good life through language restoration, through living on the land, through engaging with children and promoting family

wellness, there was even a display on how healthy eating promotes *Mino bimaadiziwin.* Winona LaDuke, Anishinaabekwe scholar, economist, environmentalist, activist and mother translates the term as "continuous rebirth" (LaDuke 132). Leanne Simpson expands on this definition;

> *"…it means living the good life in a way that promotes rebirth, renewal, reciprocity and respect. It is my understanding that although there are many ways to live the good life and that within Nishnaabeg contexts, there is no dichotomy between the "good life" and the "bad life," rather living in a good way is an ongoing process" (Simpson 2011, 27).*

This paper has served as the platform from which I was able to develop my relationship with these ideas. Wilson explains throughout his book that, when done within an Indigenous research paradigm, research is a ceremony. Ceremonies work to bridge the space between people and bring them together, "and this bringing things together so that they share the same space is what ceremony is about. This is why research itself is a sacred ceremony within an Indigenous research paradigm, as it is all about building relationships and bridging this sacred space" (Wilson). It is my hope that I may accurately describe the relationships I formed to these ideas, authors and environments succinctly in this paper. I have tried in earnest to represent others' words and ideas in a good way and any misunderstanding or miscommunication is solely my responsibility.

2.0 Understanding Knowledges – Exploring Epistemologies: Literature Review

2.1 Understanding How We Come To Know

Carter and Little assert that "Epistemology is inescapable. A reflexive researcher actively adopts a theory of knowledge. A less reflexive researcher implicitly adopts a theory of knowledge" (Carter and Little 1319). Either way, it is not possible to participate in the creation of new knowledge without owning assumptions about what knowledge is and how it should be measured. I feel it is important to understand one's epistemological framework before

conducting research or creating new knowledge. Another way to frame this would be to check one's biases before delving into a research subject, similar to how I engage with Simpson's concept of Biiskaabiyaang (See 1.4). Wilson explains the difference between a western and Indigenous epistemology thusly; "dominant paradigms build on the fundamental belief that knowledge is an individual entity: the researcher is an individual in search of knowledge, knowledge is something that is gained, and therefore knowledge may be owned by an individual. An Indigenous paradigm comes from the fundamental belief that knowledge is relational. Knowledge is shared with all of creation. It is not just interpersonal relationships, not just with the research subjects I may be working with, but it is a relationship with all of Creation. It is with the cosmos, it is with the animals, with the plants, with the earth that we share this knowledge. It goes beyond the idea of individual knowledge to the concept of relational knowledge" (Wilson 2001, 176).

Relational knowledge is embodied in non-Indigenous scholar Martusewicz's concept of collaborative intelligence. Building on Bateson's *Ecology of Mind* (Bateson 1972), the concept of a collaborative intelligence; a system of communication and transformation which involves all aspects of Creation in an animate dialogue, transcends cultural boundaries and denounces knowledge hierarchies. Martusewicz points to a number of diverse cultures which employ a conscious recognition of collaborative intelligences within their environments, many of them Indigenous cultures (257), and there are still many others which choose to ignore or are unaware of this relational phenomenon. Humans naturally seek to understand their worlds, but the manner in which we do so varies; "humans map th[e] world with our discursive (linguistic, textual and other symbolizing) forms… thus we build powerful epistemological patterns and practices – including our words, our knowledge, indeed our culture" (Martusewicz 255). Such maps give rise to our epistemological frameworks and knowledge systems continuing to shape our maps through time. Historically, knowledge systems have been considered separate entities betwixt cultures and within cultures as seen with the "fragmentation and disciplining of knowledge" (Klein 2006). Brigitte Evering offers an alternative to the notion of separate and disciplined knowledge in her article *Relationships between knowledge(s): implications for 'knowledge integration'*. She conceives knowledge as constellations occurring simultaneously

and independently of one another. She counters the hegemonic practice of fragmentation and disciplining;

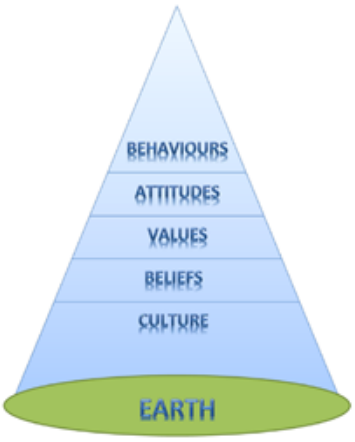
> *"When I look at the star field at night, all of the stars are there simultaneously. By connecting up those stars that represent the content, process and interaction elements of my knowledge, I perceive my knowledge constellation. Your knowledge constellation exists simultaneously with mine. Any given star can simultaneously be in an infinite number of constellations. There are also an infinite number of stars, some visible and others not yet. Each individual's or group's knowledge constellation is unique; however, it may share more stars with some than with others. Every star contributes something, and all constellations have something unique to offer. I could choose to add stars or diversify my constellation myself or by working with others so that our collective knowledge constellation has a greater number of stars" (Evering 367-368).*

Understanding knowledge systems in this way helps to break down the current epistemological barriers present in dominant society allowing an understanding of a collective intelligence connecting each of our individual constellations to a greater collective constellation including non-human beings and all the elements of the world. Lacking a true understanding of multiple and simultaneous knowledges, "the hegemony of the dominant paradigm makes it more than just another way to view the world – it claims to be the only legitimate way to view the world" (Matsinhe 844). This thinking has led to a map shaped over centuries to "form a deeply embedded set of assumptions that underlie and lead to both the ecological crises and social crises plaguing our communities" (Martusewicz 256).

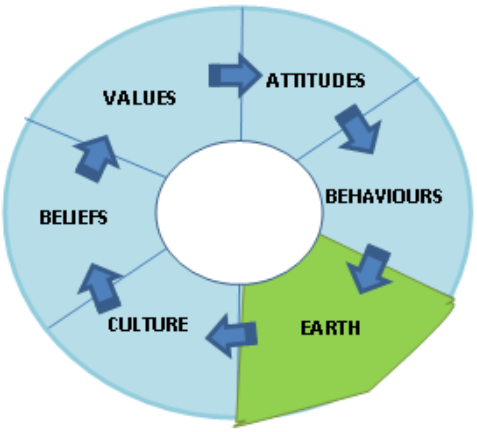
Cheney and Weston in their article *Environmental Ethics as Environmental Etiquette: Toward an Ethics-Based Epistemology* assert that perhaps Western thought's most fundamental assumption of the world is false; "that the world consists of a collection of more or less given facts to which we must respond, responses which ethics then systematizes and unifies" (Cheney and Weston 115). Rather, this relationship may be reverse – the world arises out of our ethical practice. The

means of systematization and unification of these purported 'given facts' actually gives form to the world we inhabit, which we then respond to, "responses which ethics then systematizes and unifies" (Cheney and Weston 115) – a cyclical relationship! To illustrate this concept, I employ Dan Roronhiakewen "He Clears the Sky" Longboat's "bio-cultural framework" (Fig. 1), a framework he developed to emphasize that one's relation to the earth gives rise to their culture, values, attitudes, beliefs and therefore behaviours.

(Fig. 1)



(Fig. 2)



I have modified his triangle to represent the cause and effect of this reciprocal relationship (Fig. 2). Implicit in understanding the framework are the close relationships at work between the Earth and human beings, with the Earth representing greatly the land-base of a people and all of the non-human elements interacting within a collective intelligence of that area. The second part of the cycle is that of the relationship of human beings to all of the thought processes, ideas and behaviours developed from this relationship to the Earth systems. This bio-cultural framework is at the core of the Indigenous Environmental Studies program explored in section 4.0. In speaking about the foundation course for this program; ERST-INDG 2601 Introduction to Indigenous Environmental Studies, Evering and Longboat articulate the framework thusly;

> *"Place is manifested in culture and culture is embedded in place. Culture includes the beliefs people have. Values are intertwined with those beliefs. Attitudes arise out of those values and then precipitate behaviours…when the interconnection between place and culture is strong, the resulting beliefs, values, attitudes and behaviours*

> *lead in turn and back to sustaining and enhancing biocultural diversity" (Evering and Longboat 248).*

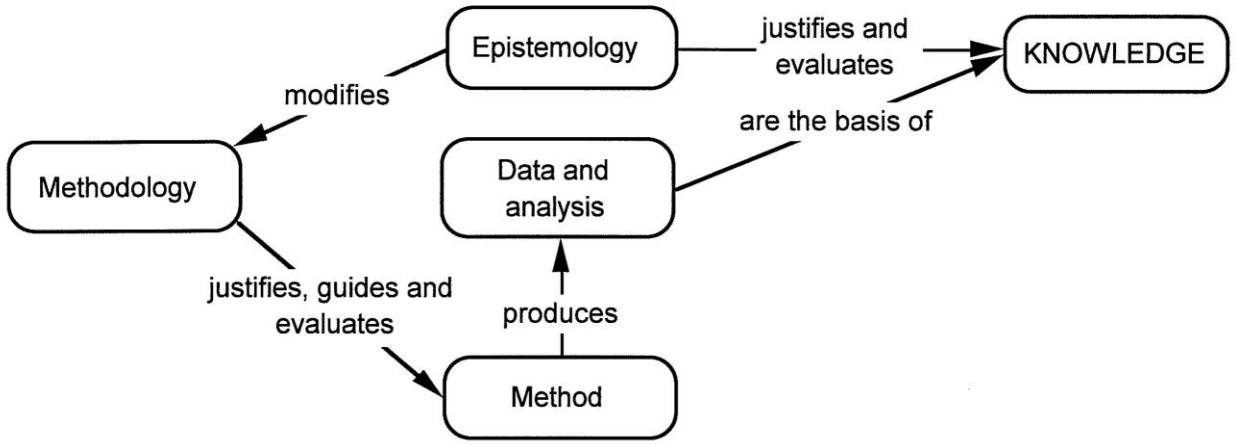
My adaptation reflects Cheney and Weston's assertion that whatever ethical practice we employ percolates upwards through our spiritual core and subconscious thought processes and is emanated in our conscious thoughts and physical behaviours. These thoughts and behaviours impact our landscapes either in ways to promote and sustain life, or in ways that work to degrade life, and so the landscapes change and so we again employ our ethical practice to systematize and unify thus continuing the cycle. Consequently, the two, human psyche and earth land-base, are bound together to evolve and change based on the spirit and intent of the relationship between them. In their article, *The Haudenosaunee Imagination and the Ecology of the Sacred,* Sheridan and Longboat communicate how Haudenosaunee Imagination conceptualizes this binding of human mind to nature;

> *"Haudenosaunee realism is a reciprocally interactive, enabled system whose encounter with Creation's forever re-establishes the autochthonous archetype of engagement with the natural world that grows and plants an autonomous way of life from the ground upward. That is, the entities that compose Haudenosaunee traditional territories and culture interact with each other in ways that continually re-establish and maintain those entities and their recurrent relations" (Sheridan and Longboat 368).*

The maps held and understood by the Haudenosaunee employ an ancient understanding of imagination to continue to promote, sustain and enhance life, culture, and the generations past as well as those to come in the future. Unfortunately, modern society's maps do not engage with the landscape or mind in a similar fashion arguably resulting in the myriad of social and environmental crises present today. While maps are not necessarily "right" or "wrong", the "denial or rejection of this system of collaborative intelligence and communication leads to a set of maps which hold its own set of consequences and implications" (Martusewicz 257). The bio-cultural framework clarifies why today, we are experiencing the highest rates of language,

cultural, and biodiversity loss on our planet (UNDP 2007; DeCaire 2013; Solash 2010). There exists an, "important relationship among linguistic, cultural, and biological diversity which creates different maps or ways of seeing and behaving relative to the natural world as well as toward other humans" (Martusewicz 255). Modern society employs a bio-cultural model which works to elevate the needs, status and desires of humans above the well-being and well-balancing of a collective intelligence which would promote and sustain all life. "We live in a culture that presents these problems as inevitable consequences of human progress" (Martusewicz 257) and so our degraded collective intelligence continues to degrade our landscape. What is needed now is for dominant society to open its eyes and mind to a ubiquitous collaborative intelligence, accept it, and immerse human beings as active participating partner within the dialogue working to promote, enhance and sustain all life.

Explicit in the work of Cheney and Weston is the crucial understanding that "there are alternative ways of intelligently engaging the world. To construe one's thinking in terms of belief is characteristic of a particular kind of world view…" (Cheney and Weston 115). Historically in Canada the dominant epistemology – or form of interpreting, understanding and legitimizing knowledge – is that of a euro-western belief system, characteristic of an empirical worldview where "only that which is perceivable by the five senses – taste, touch, sight, smell and audition – counts as legitimate evidence of knowledge. The rest – such as gods or spirits – is dismissed as non-knowledge" (Matsinhe 841). This is problematic as it is this dominant world view which controls academia and decides what counts as legitimate knowledge. I refer to this diagram offered by Carter and Little to introduce through illustration, the relationship between Epistemology, Methodology, Method and Knowledge.



(Carter and Little 1316)

Missing in this diagram is an expression of what influences epistemology. Along with one's worldview and ethical practice as discussed above, knowledge, rather than being the end product of a series of research steps, can also be an influencing factor in shaping epistemology. Another cyclical relationship. Knowledge influences Epistemology which modifies Methodology which justifies, guides and evaluates a chosen Method which produces a specific form of Data and Analysis which then provides the basis for knowledge and so it goes round and round. Historically we have seen epistemologies shift and mold as new understandings are reached, as when we discovered the world was round and not flat, or when the scholars moved away from religion towards science (Matsinhe 2007).

In setting out on the course of research, a researcher either consciously or unconsciously asserts their epistemology through their choice of methodology, decides what knowledge is worth pursuing based on their established understanding of what knowledge 'is' or 'is not'. It is here that Indigenous knowledges have historically – and presently – been pushed aside to make way for immobilized concepts of 'fact', 'truth' and 'science'.

Another concept I wish to explore and incorporate into my own work is that of personal and reflexive truths. To illustrate this point I will draw on the Nishnaabeg word for truth. *Debwewin,* is an Nishnaabeg word simply described as meaning truth. When the word is broken down however, there is a deeper explanation as described by Leanne Simpson;

> *"The first component of the word is "ode" which means heart. The component "we" means the sound of. So (o)debwewin is "the sound of the heart;" or more specifically, in my own case, it is the sound of my heart. This means my truth will be different from someone else's" (Simpson, 2011).*

Basil Johnston, Anishnaabe scholar, storyteller, teacher and writer builds on this understanding of personal truths by explaining that in a sense, that person is casting their knowledge as far as he or she can. That each person is "acknowledged to be telling what he or she knows only insofar as he or she has perceived what he or she is reporting, and only according to his or her command of the language" (Johnston, 2007, X). To wit, the speaker is exercising the highest degree of truth or accuracy given their own knowledge. Johnston also notes that in Nishnaabeg thought, there is no such concept as "absolute truth". A sentiment mirrored by Barker;

> *"'There is no such thing as a nice monotheism… the god of any other people is traif (non-kosher)'(Akenson, cited in Alfred, 2005:108); any absolute truth incorporates an element of domination over those who disagree with that truth. In a general sense, as Hardt and Negri (2001) point out, contemporary Empire engages in juridical construction, which is to say the large-scale defining of right and wrong, moral and immoral, in order to engage in the bio-production of power which is used to 'directly structure and articulate territories and people' (31)" (Barker 324).*

In my understanding, the concept of personal truth is pivotal to work concerned with re-imagining knowledge integration. As Cheney and Weston state, "Other nations are beings with their own structures of meaning, which we conceivably could join or at least move in concert with, but not structures that we should expect to fit neatly or smoothly with our own" (Cheney and Weston, 1999, 119).

To balance the diagram put forth by western scholars, Carter and Little, I would like to share a story. This story is called "Coyote's Eyes" and is an adaptation of Terry Tafoya's 1982 version

of the story told by Jo-ann Archibald in her book, *Indigenous Storywork: Educating the Heart, Mind, Body and Spirit* (Archibald 8). I have moderately shortened the story for the constraints of this paper.

Long time ago, when mountains were the size of salmon eggs, Coyote was going along, and saw that Rabbit was doing something. As Coyote watched, Rabbit sang his spirit song, and the Rabbit's eyes flew out of his head and perched on a tree branch. Rabbit called out, "Whee-num, come here," and his eyes returned to their empty sockets.

This greatly impressed Coyote, who immediately begged Rabbit to teach him how to do this.

Rabbit said no.

Coyote begged.

Rabbit said no.

"Oh please," cried Coyote.

"No," replied Rabbit.

"But it's such a wonderful trick! Teach me."

"No."

"But I'll do exactly as you say!"

"I will teach you," said Rabbit, "but you must never do this more than four times in one day, or something terrible will happen to you." And so Rabbit taught Coyote his spirit song, and soon Coyote's eyes flew up and perched on a tree.

"Whee-num! Come here!" called Coyote, and his eyes returned to him.

Now Rabbit left, and Coyote kept practising. He sent his eyes back and forth to the tree four times. Then he thought, "I should show off this new trick to the Human People."

So Coyote went to the nearest village and once all the people were gathered, Coyote sang his spirit song and the crowd was impressed to see his eyes fly up into the tree.

"Whee-num!" Coyote called out. But his eyes just sat on the branch.

"Come here!" shouted Coyote, but his eyes didn't move.

Just then, a crow flew by, and spotting the eyes, thought they were berries. The crow swooped down and ate them.

Now Coyote was blind, and staggered out of the village hoping to find new eyes. He found a river where he tried to use bubbles as eyes. But the bubbles quickly popped. He found huckleberries, and tried to use them as eyes. But they were so dark they made everything look black. Now Coyote was really feeling sorry for himself. He sat down and cried.

"Why are you so sad?" asked a small Mouse.
"My dear Cousin," said Coyote, "I've lost my eyes…I'm blind…I don't know what to do."
"Poor thing," said the Mouse, "I have two eyes, so I will share one with you." Mouse removed one of his eyes and handed it to Coyote. Now Coyote's are much larger than mice, and when Coyote dropped Mouse's eye into his socket, it just rolled around in the big empty space. The new eye was so small it only let in a tiny amount of light. It was like looking at the world through a tiny hole.
Coyote walked on, still feeling sorry for himself, just barely able to get around, still crying.
"Why are you crying?" asked Buffalo in his deep voice.
"Oh Cousin," said Coyote, "all I have to see with is this tiny eye of Mouse. It's so small it only lets in a little bit of light, so I can barely see."
"Poor thing," said Buffalo, "I have two eyes, so I will share one with you." Then Buffalo removed one of his eyes and handed it to Coyote. Now Buffaloes are much larger than Coyotes, and when Coyote tried to squeeze Buffalo's eye into his other socket, it hunt over into the rest of his face. So large was Buffalo's eye that it let in so much light, Coyote was nearly blinded by the glare…everything looked twice as large as it ordinarily did. And so Coyote was forced to continue his journey, staggering about with his mismatched eyes.

Indigenous storytelling philosophies deem it inappropriate to explain the meaning of a story; there are as many meanings to one story as there are listeners (Archibald 2008; Wilson 2008). Stories can even hold multiple meanings to the same listener over time. A story told to you when you are six may reveal a different understanding when you hear the story again at age 20, and again at age 50. Indigenous pedagogy teaches that a listener would not ask a question regarding a story they have heard, "They would know that another story would come their way if and when they needed to know some answer to [the] question" (Archibald 139). Elder storyteller, Ellen White shares her work with teachers and children in British Columbia. She explains that "the story isn't telling the children what to think or feel, but it's giving them space to think and feel" (Archibald 134). However, I feel I must offer a brief context for the story in relation to the subject matter of my paper. Please understand that this is just one interpretation and that you are free to disagree and understand the story in your own way. I interpret Coyote's eyes as a metaphor for the integration of Indigenous knowledges in western academic frameworks. Two eyes; two different epistemologies; the one made smaller, barely letting in the light, would be analogous to an Indigenous epistemology within a dominant society and the bulging eye, that of

the western epistemology overflowing the face, blinding it to other ways of coming to knowledge. Two different ways of seeing the world and filtering the knowledges within it, gone terribly out of balance. I do not offer more on the interpretation of this story and instead urge you to mull it over in your mind's eye and make your own understandings of it.

Cheney and Weston also touch upon an aspect of storytelling in describing the dissimilarities between Western and Indigenous modes of interpreting words and worlds. They claim that Western researchers seek to understand the beliefs encoded in the words of Indigenous peoples as a reflection of that culture. However, they may be approaching the issue conversely. Typically the words expressed by Indigenous cultures produce the worlds in which they inhabit. "Euro-Americans tend to be concerned with ontology, correct descriptions of indigenous worlds. Many indigenous people, on the other hand, are concerned with the right relationship to those beings that populate their worlds, they are concerned with mindfulness, "respect"" (Cheney and Weston 122). Many Indigenous cultures use storytelling as a cornerstone for pedagogy. Western epistemologies interpret these stories as descriptions of how Indigenous peoples view their world, rather than stories which were created to describe and teach their relationships within their world.

2.2 Indigenous – Western Knowledge Relationships

In 1987 the Brundtland Report not only drew international attention to issues of 'sustainability' but also called for collaboration with Aboriginal peoples and integration of Aboriginal knowledges in environmental frameworks. Following this report the UN has launched numerous initiatives calling for increased collaboration with Indigenous knowledges including; the 1992 UN Convention on Biological Diversity, the 2000 Millennium Development goals and the 2007 UN Declaration on the Rights of Indigenous Peoples to name a few. The Canadian government echoed this movement calling for collaboration, consultation and integration through policies such as the Canadian and Ontario Environmental Assessment Act and the Species at Risk Act. While government recognition of Indigenous knowledges is surely positive, the manner in which integration is executed often is not. Anishinabe scholar Deborah McGregor indicates that in

Canada, there are two views; "…there is the Aboriginal view…which reflects an Indigenous understanding of relationships to Creation, and there is the dominant Eurocentric view …which reflects colonial attitudes toward Aboriginal people and their knowledge…" (McGregor 389).

Although there have been efforts to move beyond limited colonial approaches to knowledge integration, in their review, *Indigenous Knowledge, Science and Resilience: What Have We Learned from a Decade of International Literature on "Integration",* Bohensky and Maru found that;

> *"The practice of knowledge integration continues to present a number of challenges. Some of these are undoubtedly due to the tensions posed by competing, or even unclear objectives of integration processes. Scientific research, natural resource management, conservation, development, self-determination, and advocacy for indigenous rights have all been legitimate drivers of efforts to integrate knowledge. In some cases, however, knowledge integration has merely become a fashionable trend in natural resource management (Wohling 2009) that amounts to little more than a box-ticking exercise. At present, the broad picture is one of a knowledge integration in-practice that has not benefitted from extensive academic debate on the subject (Castillo 2009)" (Bohensky and Maru 2011).*

Brigitte Evering identifies in current literature, three standard approaches to western-Indigenous knowledge integration in her article, *Relationships between knowledge(s): implications for 'knowledge integration'*; 'just one not others', 'degrees of separation' and 'hierarchy'. These methods of knowledge integration reflect a separation of knowledges, not only between western disciplines and Indigenous knowledges, but also a separation of Indigenous knowledges into distinct categories or subsections –an approach which is highly critiqued among Indigenous (McGregor 2004; Simpson 2004; Battiste andYoungblood-Henderson 2000) and non-Indigenous scholars (Evering 2012; Berkes 2008). Battiste and Youngblood Henderson argue; "Indigenous knowledge is not a uniform concept across all Indigenous peoples; it is a diverse knowledge that is spread throughout different peoples in many layers" (35). Further, McGregor offers that

knowledge be regarded as a verb rather than a noun or thing; knowledge is something that is lived and embodied in a person's active being rather than a static object one acquires and cannot be separated from the person or place (McGregor 2004).

Underlying all of Evering's identified methods are power dynamics and colonialism (Watson-Verran and Turnbull 1995; Smith 1999). Within western-Indigenous knowledge relationships, western knowledges are typically privileged over Indigenous knowledges; this is exemplified through the use of Indigenous knowledge to "fill the gaps" in western science and when western science is used to legitimate Indigenous Knowledge (Evering 363). Nancy Rich identifies, "The challenge for navigating the relationship between knowledges is to protect the integrity of each, particularly in light of the history of genocide and cultural erasure and the ongoing inequities of power that render one knowledge privileged and the other largely invisible" (309).

These identified practices inherently reflect a "fragmentation and disciplining of knowledge (Klein 2006) increasingly result[ing] in knowledge silos" (Evering 361). Interdisciplinary thinking may be offered here as a solution, however "just including other disciplines does not necessarily lead to integration" (Evering 361). They are also concerned with the binaries inherent in western thought systems; Indigenous knowledge/western knowledge, science/culture, traditional/modern, insider/outsider. Similarities and differences are then charted using venn diagrams among other methods. This approach is criticized for it "still works from the premise that Indigenous Knowledge and science can be put into labeled containers even if these are conceptualized in a horizontal instead of a vertical relationship" (Evering 368). The Mohawk Creation story emphasizes balance in all things (Longboat 2011; Porter 2008), and so an erosion of the dichotomous placing of Indigenous/western knowledges and the creation of a third space for knowledge integration has been suggested by some (Lutz 2008; Bhabha 2004; Whitchurch 2008). Third space theory describes a space where two distinct cultural groups typically embodying a colonizer-colonized relationship, come together to exchange information. Lutz describes the creation of a hybrid language, "Chinook jargon or wawa" (Lutz 11) between Aboriginal peoples and white settlers as a means for knowledge integration; maintaining the integrity of either culture while simultaneously creating a different space for integration.

The (over)use of dichotomies is important to understand when discussing relationships between western and Indigenous epistemologies. Western theory is very concerned with dichotomies, whereas Indigenous cultures do not necessarily believe in dichotomies as expressed above. Dan Longboat mirror's Simpson's sentiments when he shares the Haudenosaunee Creation story. He uses the part of the Creation story where the Twins are fighting over Creation to exemplify this point. Neither Brother is "good" or "bad" but rather, they are a balance to each other. While one Brother creates deer and roses, the other Brother creates wolves and thorns, keeping the Earth in balance. Matsinhe asserts that "Indigenous knowledges do not have to be positioned as the opposite of modernity and science" (Matsinhe 848). When we erode the concept of concrete opposites or dichotomies, we can restore Coyote's eyes and create a balance of both western and Indigenous epistemologies and methodologies. In order to accomplish this, Simpson states, "I believe we need intellectuals who can think within the conceptual meanings of the language, who are intrinsically connected to place and territory, who exist in the world as an embodiment of contemporary expressions of our ancient stories and traditions, and that illuminate mino bimaadiziwin in all aspect of their lives" (Simpson 2011, 31).

2.3 Indigenous – Western Knowledge Relationships in Education

Margaret Kovach (2009) suggests that for Indigenous cultural knowledges to continue they "must live in many sites, including Western education and research" (Kapyrka and Dockstator 105). Many scholars have articulated the need for cosmological and relational knowledge integration in education (Bateson 1972; Evering 2012; Kapyrka and Dockstator 2012; Martusewicz 2009; Sheridan and Longboat 2006; Mokuku 2012). "Although most mainstream educators will concur with the idea of an integration of Indigenous perspectives into their curricular practices, Lorenzo Cherubini (2009) warns that most will implement a shallow integration with an incoherent approach to Indigenous knowledges, which can result in a superficial treatment of culture and a reinforcement of stereotypes" (Kapyrka and Dockstator 107). Currently there are various educational institutions engaging in 'two-world' or 'two-eyed seeing' (Gross 2005; Kapyrka and Dockstator 2012; Bartlett et. al., 2012) or 'both ways

learning', or 'two way schooling' (Harris 1990; Marika 1998) approaches to Indigneous-western knowledge integration in the classroom. Kapyrka and Dockstator describe the 'two-worlds' approach as a pedagogy which;

> *"offers both students and educators opportunities to expand their understandings at the intersection of difference between Indigenous and Western knowledges as well as ameliorate and strengthen relationships between settler populations and Indigenous peoples…A crucial aspect of this approach is that it does not merge two knowledge systems together, nor does it paste bits of Indigenous knowledges onto Western curricula, rather it avoids knowledge domination and assimilation by engaging in a learning philosophy based in equitable inclusion. Both Indigenous and Western epistemologies are acknowledged in equal measure" (Kapyrka and Dockstator 105-106).*

The "Two-Eyed Seeing" approach utilized by Marshall, Bartlett and Hatcher at the (former) Integrative Science program at Cape Breton University mirrors this effort to incorporate two worldviews; Indigenous and western, into the science classroom; "This transition involves a move from inside to outside, both physically, spiritually and intellectually. It also involves an incorporation of ceremony, preparing the learner to listen and observe. Most importantly, a close engagement with the community and the cycles of Mother Earth must occur, reinforcing and expanding the engagement of the learner and the knowledge" (Hatcher 346).

After reviewing both the Indigenous Environmental Studies (IES) program at Trent as well as the Integrative Science program at Cape Breton, Australian scholar, Vivian Hauser touches on the necessity for ontological pluralism in programs engaging Indigenous knowledges. She asserts that; "Including Indigenous knowledges in tertiary science education without challenging the dominance of Western science and embracing genuine ontological pluralism is problematic for Indigenous peoples as the legitimacy of Indigenous knowledge systems cannot be recognised. This inability precludes any meaningful negotiation of how the knowledge domain of science education is occupied" (Hauser 49).

Centering Indigenous-western knowledge relationships in place has been identified as necessary practice, particularly within educational contexts (Evering and Longboat 2012; Lickers 1997; Cajete 2005; Sheridan and Longboat ????; Orr 1992; Wilson 2008; Archibald 2008; Hatcher 2012; Aikenhead and Ogawa 2007). Saylan and Blumstein open their book with the following;

> *"Environmental education has failed to bring about the changes in attitude and behaviour necessary to stave off the detrimental effects of climate change, biodiversity loss, and environmental degradation that our planet is experiencing at an alarmingly accelerating rate" (Saylan and Blumstein 1).*

The bio-cultural framework can be employed to understand that environmental education is bound to fail in bringing about changes in attitudes and behaviours when environmental education itself is conceived from the same collective intelligence – the same culture-beliefs-values and attitudes – which created the environmental problems listed above. It is a classic example of Einstein's famous dictum; "the hallmark of a real problem, is that it cannot be solved within the same framework that generated it" (Weston 10). Our frameworks need to be altered and re-imagined if we have any hope of overcoming current environmental crises. A collective intelligence which creates a bio-cultural cycle such as this does "not arise from some part of humans' essential individualistic "nature." They are culturally created and maintained and they contradict those collaborative interdependent relationships that help us to survive" (Martusewicz 259). However, this also means that positive elements of collective intelligence can be culturally created and maintained so as to promote those relationships which help us to survive. By rooting education in place and cultural practice, emphasizing a resurgence of gratefulness and relational-understanding, we can begin to expand the dominant system's knowledge constellation so as to enter into a collaborative intelligence promoting and sustaining all life for future generations.

In his book, *Ecological Literacy: Education and the Transition to a Postmodern World,* David W. Orr communicates how place has been consistently overlooked in education for several reasons (126). He describes the first reason as "the ease with which we miss the immediate and

mundane. Those things nearest at hand are often the most difficult to see" (Orr 126). To portray this point, try the following exercise;

> *"Choose a familiar street or place at random, and list to yourself the stores or houses, trees or bushes, the physical characteristics of that place in the order in which they occur. Itemize the place's major features one by one. Then walk down the real street or visit the place and notice what you missed. Express your success rate as a percentage. Less than 50 percent accuracy, when it is a place you visit most days, is a poor showing" (Kipfer 022).*

Orr also points to the reality that "place is nebulous to educators because to a great extent we are a displaced people for whom our immediate places are no longer sources of food, water, livelihood, energy, materials, friends, recreation or sacred inspiration" (Orr 126). Contrary to the dominant system's manner of living, Indigenous peoples still greatly emphasize place in their cultures, lives and subsequently education. Within the context of the Haudenosaunee as related by Longboat and Sheridan, it is understood that "Where one is has everything to do with who one is" (Longboat and Sheridan 369). Indigenous education includes more time spent on the land, learning cultural land-based activities and forging relationships with one's landscapes. With dominant society lacking this inherent sense of place in both culture and education, Orr continues by quoting Whitehead's take on the danger of increasingly abstract thinking "as the "fallacy of misplaced concreteness": the confusion of our symbols with reality" (Orr 127). Similar to Martusewicz's resolution that 'Western' maps confuse their maps for the territory in which they are standing, actually blinding us "to the fact of our immersion in this wider living system" (Martusewicz 255). Understanding the social and psychological reasons for the severance of place from education, we can move forward into the merits of place-based education for the betterment of social and environmental problems.

In the 1940s Lewis Mumford constructed the regional survey which was an expression of the importance of place in education. He describes the survey in his own words thusly;

> *"Not something to be added to an already crowded curriculum. It is rather (potentially) the backbone of a drastically revised method of study, in which every aspect of the sciences and the arts is ecologically related from the bottom up, in which they connect directly and constantly in the student's experience of his region and his community. Regional survey must begin with the infant's first exploration of his dooryard and his neighbourhood; it must continue to expand and deepen, at every successive stage of growth until the student is capable of seeing and experiencing above all, of relating and integrating and directing the separate parts of his environment, hitherto unnoticed or dispersed" (Mumford in Orr, 128).*

A substantial influence of place in environmental education serves to promote a healthier, reciprocal relationship between humans and land. While the Haudenosaunee did not have a form of "environmental education", but rather a lived knowledge constantly evolving through the oral tradition, the same concept is evoked; "Speaking the sacred dimensions of North America profoundly anchors mind in landscape and landscape in mind by manifesting qualities of each in the other" (Longboat and Sheridan 376). Integration of place in environmental education is crucial because it combines intellect with experience. Learning within the confines of a classroom that does all it can to eliminate aspects of the natural world (Weston 2004) does little to educate students of the natural, physical, spiritual, intellectual and environmental qualities of a place. Metis scholar Cora Weber-Pillwax expresses that talking intellectually about the land and learning about it through books and videos rather than actually going to the land and spending time to cultivate those relationships; "It's like writing "bread" on a piece of paper and eating the paper instead of having the bread" (Wilson 103). The act of experiencing your knowledge also fits within an Indigenous paradigm for their definition of knowledge as a verb as I described in the above terminology section. When we understand knowledge as something which we live, do, feel, and experience, it is my thought that we will cease the dominant approach of "acquiring", "disciplining" and "conquering" knowledge, but rather embrace a larger ecological system of collective intelligence.

Orr says it best; landscape shapes mindscape (Orr 130). Mindscape then relates back to the landscape in ways to degrade life or as with the Haudenosaunee Imagination; "Properly understood, imagination is a homing device for finding a way into the sacred unity of time, mind, spirit and place. Unfortunately, the disconnected imagination is aimless because it forfeited belonging somewhere (Sheridan and Longboat 375). That is precisely what Indigenous scholars seek to rectify in education; a grounding in place. Implicit in a rooted foundation of place in environmental education is the necessity for such education to be connected to ceremonial practice (Hatcher 2012; Aikenhead and Michell 2011).

Because Indigenous cultures are more grounded in their land-place-bases their articulation of the bio-cultural model in educational contexts emphasize respect, reciprocity and care for the earth to support, create and sustain Life. Incorporating place in such a way also presents as a challenge to integrating Indigenous knowledges into western science and environmental education programs, since western frameworks are used to a "one size fits all" format. For example; while the Ontario Ministry of Education sets out curriculum for environmental education from Thunder Bay to Windsor, Indigenous knowledges are extremely varied throughout Ontario and so generalist curriculums for integrating Indigenous knowledges cannot be manufactured in accordance with western practices.

2.4 Alliances

"If you're going to do anything, then talk to us. Let's do it together, because… our responsibility is not just for the [environmental] cause; our responsibility is for the generations to come. Everything is inter-related… Your agenda is short and ours is long…"

First Nations Leader (Davis and Shpuniarsky 334)

Indigenous scholars have written extensively about the colonization of not only their lands, cultures, languages, spiritual practices, bodies and identities (eg., Cardinal 1969; Smith 199; Battiste 2000; Alfred 2005; Simpson 2008) but also the mind "through imposed systems of ideas and beliefs, a phenomenon that Battiste and Henderson (2000) call 'cognitive imperialism'"

(Davis and Shpuniarsky 335). This long standing history of colonization is a "looming presence in relationships between Indigenous and non-Indigenous peoples. Indeed, one of the most pressing reasons for forming relationships between Indigenous and non-Indigenous peoples is to combat current colonization and to try to deal with the many complex outcomes of past colonization" (Davis and Shpuniarsky 346)

Over the course of my studies and particularly on this research journey I have questioned what it means to be an 'ally' to Indigenous peoples. Understanding the place of settlers (and indeed where we do *not* belong) within sites of Indigenous resurgence and 'decolonization' is of the utmost importance if real progress is to be made towards these goals. Barker states that, "To be an ally first requires recognition of the need for action in a real and present struggle: in this case, the struggle of Indigenous survival and resurgence against colonial and neo-colonial power, within Canada and globally" (Barker 316). Further, settler allies must be open to "assist Indigenous peoples, groups, and nations in the pursuit of their goals, regardless of whether or not these goals fit a Settler individual's pre-existing idea of what form the struggle should take" (Barker 324). This means opening ourselves up not only to another culture, but also an epistemology entirely divergent from our own. This is especially difficult for those operating within academic institutions. In what Regan (2006) refers to as 'unsettling the settler within', we must;

> *"question literally everything that we do, all of the assumptions which underpin our personal lives and larger societies, and the myths which inform our very identities. We must be prepared to face the fact that our comfortable lives, our 'privileges' exist because we are useful to imperialism, and that being an ally and confronting imperialism requires us to risk our comforts and to confront the entire imperial system" (Barker 321).*

This is difficult work and not to be taken lightly. As Davis and Shpuniarsky observed; "Working through something as intense and deep as colonization causes pain for both Indigenous and non-Indigenous peoples" (Davis and Shpuniarksy 343). The difference is while Indigenous peoples

had the pain of colonization forced upon them; settlers have the choice whether to engage in the pain of (re)learning our histories. "To be in a position of privilege and power and not to question the source of that power and privilege indicates a deliberate choice of colonial action and intent. This, I assert, is one of the defining characteristics of a colonial Settler: the ability to access such knowledge, but the refusal to do so" (Barker 319). We as settlers must start asking ourselves basic questions about who we are and what are our histories? In their work to understand the complex dynamics of settler – Indigenous alliances, Davis and Shpuniarsky found that "Developing an awareness of these historic and contemporary realities is necessary in order to approach a relationship with Indigenous peoples honestly" (Davis and Shpuniarksy 341). Recognizing these realities brings to light that "globalization, social oppression, and racism are connected to the wider imperial project. Rather than being based in separate, rigid, ideological, cultural, or economic concepts, these uses and abuses of power all serve the same overarching system(s). This awareness must be internalized by Settler peoples, or we can never hope to truly confront colonialism because we will always confront it with one hand while supporting it with the other" (Barker 321).

After the intense self-discovery work is done and settlers are ready to entire into relationships with Indigenous peoples, a new set of understandings must be realized. In my own experience and education one concept has constantly come up as foundational for any relationship with Indigenous peoples; respect (Longboat 2009; 2012; Simpson 2011; Archibald 2008; Wilson 2008). Barker supports this saying "…an ally must accept that all potential solutions to the problems generated by imposed colonialism must be based in a clear and engaged understanding of the principles – primarily, respect" (Barker 328). Although the importance of respect is widely acknowledged in both the literature, Davis and Shpuniarsky emphasize that "respect is something that has to be demonstrated in day-to-day interactions" (Davis and Shpuniarksy 337). Due to the longstanding history of colonialism and imperialism, broken promises and blatant racism, there exists an inherent mistrust of non-Indigenous peoples within Indigenous communities. Overcoming this mistrust to forge alliances and relationships can be extremely challenging and need to be addressed with sensitivity and patience on the part of settlers;

> *"'…As a white person, it's important to enter into alliances with Native people fully aware that you are the direct representative of a colonial history that has damaged or destroyed whole communities…' (Davis, O'Donnell, and Shpuniarsky 2007)" (Davis and Shpuniarksy 345).*

Often non-Indigenous peoples can break Indigenous social or cultural codes of which they were simply unaware, which can cause the relationship to be marked "by same disregard of Indigenous values and traditions that characterize Indigenous/non-Indigenous relationships in the broader society. Despite the good intentions of allies, colonial relationships can be reproduced" (Davis and Shpuniarksy 337). For this reason, Davis Shpuniarsky found that "Successful relationships tend to have an Indigenously driven agenda" (Davis and Shpuniarksy 339).

I feel that a lack of "Indigenously driven agenda" contributed to the failure of my first proposed MRP. My motives were of good intent and I felt I was following Leanne Simpson's expression that "Academics who are true allies…. Challenge the way research is done..." (Simpson 2004; 381) as I adapted a 'western' methodological framework into an Indigenous paradigm. However, I did not consult the community prior to constructing my proposal and in the end it did not fit with their needs, goals or resources at the present. Barker's previous statement applies here in how allies need to assist Indigenous communities on their terms and in their ways, as opposed to fitting Indigenous goals into a pre-conceived settler notion. Moving forward in my second proposal for a case study of Trent University's Indigenous Environmental Studies (IES) Program I was very aware to first consult members of the IES community including the director of the program, Dan Longboat, a personal friend and mentor, of their needs prior to constructing a proposal. Even with the difficult lesson I had just learned I found I was entering into discussions with a pre conceived notion of what research I would be conducting. Flexibility was also key here as the needs for the research changed subtly several times over the course of our conversations.

Kowalsky et. al., wrote a paper analyzing their experiences a northern Dene community regarding Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) (Kowalsky et. al.,

1996). They felt so strongly about their experiences in entering the community, forging the relationships and building the mutual respects that they published this work in addition to their findings on FAS and FAE. They identified 18 recommended guidelines for entrance into an Aboriginal community. While I fully acknowledge that this list oversimplifies the complexity of cross-cultural relationship building, I found this article helpful in my undergraduate education in building the foundation for my understanding and have thus decided to include it here;

- Be prepared for uncertainty
- Recognize that the Aboriginal People are in charge and be patient
- Consider the implications of the number of researchers
- Be honest about your motives
- Be yourself and participate in the community
- Monitor feelings (your own and those of the Aboriginal peoples)
- Be ready to teach and to share ideas
- Prepare for the unexpected
- Allow for time
- Be sensitive
- Recognize and respect the spiritual component
- Consider what facilitates interaction with community members
- Enjoy and allow humour
- Contribute to the community in economic terms
- Respect confidence and guard against taking sides
- Follow the lines of Authority and thus show respect for it
- Be aware of general etiquette expectations
- Maintain ongoing consultation

In closing, I wish to draw on the words of Barker once again to summarize and reflect on my experiences which mirror so many others before me;

> *"In the course of such efforts, some relationships will not turn out as expected or intended, and some plans may have to be scrapped and new ones undertaken. This must not be viewed as a reason to stop trying. So long as respect is the driving principle, mistakes are a source of useful information. There is no failure when attempts to build a different world do not reach the lofty goals of those who plan them; there is only failure if pursuit of those plans entails the abandonment of respect, or reliance upon control and domination, or an attempt to build harmful absolutes. Ultimately, to do nothing is itself failure; to risk oneself and become unsettled is a success in and of itself. There is no one way to be an ally, just as there is no one way to be colonial. There is not one struggle against imperialism, and so there is no one single solution to these struggles. No one solution, that is, except to try" (Barker 329).*

3.0 Methodology

3.1 What is an Indigenous Research Methodology?

When it comes to decolonization, a popular approach is to 'use the master's tools to dismantle the master's house." Leanne Simpson articulates that she is "not so concerned with how we dismantle the master's house, that is, which sets of theories we use to critique colonialism..." rather she is "very concerned with how we (re)build our own house, or our own houses" (Simpson 2011, 32). This is precisely what Indigenous methodologies are concerned with – shedding the colonial overcoats of the past 300 years and creating new methodologies to conduct research in line with Indigenous philosophies. Indigenous research methodologies are those that challenge the current western paradigms of research to establish "alternative way of thinking about research processes" which are, "respectful and ethically sound from an Indigenous perspective" (Louis 130). Simpson states that "This Indigenous approach is critical to the survival of Indigenous Knowledge and ultimately Indigenous Peoples" (Simpson 381). Shawn Wilson defines Indigenous research as "research done by or for Indigenous peoples" (Wilson 15) as opposed to the historical ""Native-as-informant, scholar-as-interpreter" paradigm" (Kievit et al. 41). I identify my own work as being 'for' Indigenous peoples and feel that it is the role of the

settler to dismantle the colonial houses we built, in order to create space for Indigenous scholars to rebuild their own houses in their own way.

Linda Tuhiwai Smith delves into the history of research methodologies in her book, *Decolonizing Methodologies.* She exposes the way research has been created from an imperialist agenda and articulated through the language of colonialism. The thrust of this critique draws attention to "the imperialistic character of western science – that is, science as an instrument of ideological, cultural, psychological, economic, political and social violence and domination in the march of colonialism" (Matsinhe 838). Smith establishes that western methodologies are an expression of "a cultural orientation, a set of values, a different conceptualization of such things as time, space and subjectivity, different and competing theories of knowledge, highly specialized forms of structures of power" (Smith 42). It is unnerving then, that empirical research and academic writing has the ability to forge collective thought-processes, that " can effectively make some lives, ideas, and events appear to be momentous and others inconsequential. For this reason, power and responsibility reside in the way we go about telling stories" (Kievit et al. 15).

Confronted on all sides by the power dynamics of the dominant western paradigm, how then do Indigenous peoples and allies conduct research according to mino bimaadiziwin? Matsinhe asserts that the application of Indigenous philosophies is the only way to effectively and non-imperialistically decolonize methodologies. He notes that given their "plurality, open-endedness and non-hegemonic status, indigenous knowledges have the potential to decolonize methodologies; with their non-historicist ontologies and epistemologies, not only can they be critical, but they can also enrich and fracture our methodological imaginations" (Matsinhe 847). Leanne Simpson begins the research process with *biskaabiiyang.* Biskaabiiyang is a verb which means "to look back" or "returning to ourselves" (Simpson 49). It is also used by Indigenous scholars to mean "decolonizing" – Anishnaabe scholar, Wendy Makoons Geniusz explains;

> *"Biskaabiiyang research is a process through which Anishnaabe researchers evaluate how they personally have been affected by colonization, rid themselves of the emotional and psychological baggage they carry from this process… When using*

> *Biskaabiiyang methodologies, an individual must recognize and deal with this negative kind of thinking before conducting research… The foundations of Biskaabiiyang approaches to research are derived from the principles of anishnaabe-inaadiwiwin (anishnaabe psychology and way of being)…They have developed over generations and have resulted in a wealth of aadizookaan (traditional legends, ceremonies)… Through Biskaabiiyang methodology this research goes back to the principles of anishnaabe-inaadiziwin in order to decolonize" (Simpson 50).*

This raises an excellent point about acknowledging one's biases and shedding baggage that may affect or limit the research process. Only through up-front acknowledgement of your demons can you effectively conduct research. "The key, and usually unremarked, problem is not that we are distanced from the language/cultural horizons of our interlocutors. The problem is that we are insufficiently distanced from our own worldview. The bigger obstacle is not so much knowing the other (that is what dialogue is for) as it is knowing oneself" (Lutz 27). Barker states that;

> *"There is much discussion in the literature about the need for Indigenous peoples to 'decolonize', but there has traditionally been little recognition that Settler people can, and perhaps must, decolonize as well" (Barker 318).*

It is in this spirit that I engage with the Nishnaabeg concept of Biiskaabiyang from an allied settler perspective. Western methodologies have concerned themselves with knowing the 'other', such that non-aboriginal people became experts *on* Aboriginal people (Wilson 49) as discussed above in the ontological correctness of western epistemologies by Cheney and Weston. Fixed with their own epistemology as 'rule', armed with reason, objectivity and science as their tools of truth (Wilson 57), western researchers have shaped the way we do research with Indigenous peoples. The active component of their research, methodology, is therefore an "exercise of power to include and exclude, that is, the erection of boundaries and gate keeping. Without methodology, 'Western and Westernized academic disciplines, particularly in most social sciences, [cannot] continue to marginalize and exclude ethnically diverse interpretations of

reality and styles of knowing in relation to mainstream normative knowledge creation and reproduction" (Matsinhe 839).

One problem this creates (among the myriad), is that Indigenous methodologies are consistently expelled beyond the boundaries. Leanne Simpson recalls how she has made copious efforts to publish papers involving concepts of decolonization and Indigenous knowledges in scientific, academic journals "with little success" (Simpson 376), as editors repeatedly remove these aspects as being "too off topic". Wilson echoes a similar situation when he describes how difficult it was to justify his PhD thesis by citing western researchers since empirical evidence is perceived as being sounder than cultural knowledges in the academy (Wilson 58). Indigenous authors fear losing their connections and relationships to their research and to Creation through adopting western methodologies which do not make room for their cultural, traditional and spiritual relations; "these social phenomena in which the religious and the secular interact are beyond the scope of mainstream western theories and methodologies. So the answer is dismissal, or false consciousness perhaps" (Matsinhe 847).

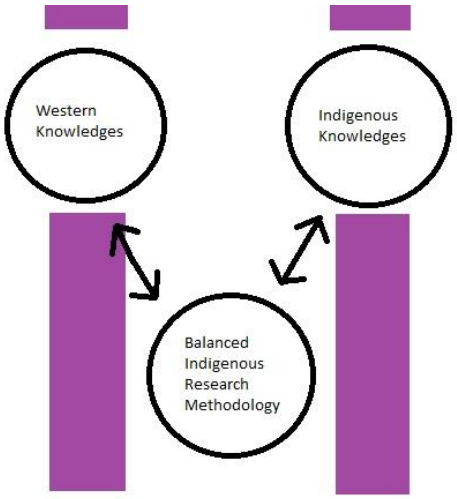
I would argue that this false consciousness is created and supported through the deliberate expulsion of methodologies and knowledges that do not fit a pre-configured, western epistemological lens. It is perpetuated through the misguided belief that western research (or any research for that matter) is without bias, emotion or spirit and is purely objective. As noted above, western efforts focus on distancing the researcher from, as Lutz put it, "the language/cultural horizons of our interlocutors" rather than from the researcher's own biases and assumptions of reality and knowledge. Many Indigenous (and some non-Indigenous) authors argue that research *must* involve the researcher on an emotional level (Matsinhe 2007; Simpson 2011; Wilson 2001; Wilson 2008; Hampton 1997; Lutz 2008; Cheney and Weston 1999). Shawn Wilson wrote his book about Indigenous research methodologies, *Research is Ceremony,* almost entirely in first person, addressing his three sons. He claims that "we cannot remove ourselves from our world to examine it" (Wilson 2008, 14) and that "if research does not change you as a person, you aren't doing it right" (Wilson 2008, 83). Lutz states that "there is no such thing as disinterested scholarship. The topics upon which we choose to write, our interpretations of them,

the arguments we derive from them, and what counts as fact depend upon who we are and what our interests are" (Lutz 26). Perhaps it is possible to claim objectivity in the hard sciences – studying finite numbers in calculus or light refractions in physics – but certainly not in the social sciences, definitely not in environmental studies, where there is infinite space for personal bias, emotions, culture, spirit and innumerable methods of interpretation and validation. I feel that Eber Hampton said it best when he said;

> *"One thing I want to say about research is that there* is *a motive. I believe that reason is emotional because we feel. We feel because we are hungry, cold, afraid, brave, loving, or hateful. We do what we do for reasons, emotional reasons. That is the engine that drives us. That is the gift of the Creator of Life. Life feels…Feeling is connected to our intellect and we ignore, hide from, disguise, and suppress that feeling at our peril and at the peril of those around us. Emotionless, passionless, abstract, intellectual research is a goddam lie, it does not exist. It is a lie to ourselves and a lie to other people. Humans – feeling, living, breathing, thinking humans – do research. When we try to cut ourselves off at the neck and pretend an objectivity that does not exist in the human world, we become dangerous, to ourselves first, and then to the people around us" (Hampton 52).*

Indigenous peoples have seen first-hand the damage wrecked when researchers feign objectivity, as Taiaiake Alfred describes "a class of Aboriginal "citizens" whose rights and identities have become defined solely in relation to the colonial state" (Coulthard 197). The danger is in the unbalancing of oneself, therefore unbalancing the methodologies employed in research, subsequently leading to the unbalancing of the knowledge produced and put back into the dominant epistemology. When we feign objectivity, we are ultimately just staggering around like Coyote with his mis-matched eyes. Wilson claims that "knowledge[s] and peoples will cease to be objectified when researchers fulfill their role in the research relationship through their methodology" (Wilson 2008, 74).

I reiterate the aforementioned assertion that Indigenous knowledges do not have to be in opposition to Western knowledges. Although historically this has been the case, moving forward, it is possible to balance both in a mutually beneficial manner. Going back to the Mohawk's Two-Row Wampum Treaty Belt, I draw upon the visualization of two boats travelling parallel down the same river embodying an "ethic of non-interference" (Brant 1990; Ross ; Simpson 2011; Barker 2010). *Aanijigone* is Nishnaabe concept of an ethic of non-intererence (Simpson 54). While the Two-Row Wampum Treaty Belt was meant to express an ethic of non-interference between two sovereign nations (Porter 2008), *aanijigone* is a more personal understanding of a non-interference ethic where critical interference is withheld, and instead, framed in the positive (Simpson 54). Both conceptualizations are relevant to a research methodology integrating a non-interference ethic. In creating a balanced research methodology between western and Indigenous epistemologies, the ethic of non-interference as described by the Wampum Treaty Belt can be called upon to ensure that both sides retain their integrity by not attempting to predate or change the other, but rather come together respectfully in a complimentary fashion. I offer this crude illustration to demonstrate how this may look (Fig. 3). The concept of *aanijigone* would be



(Fig. 3)

important in this methodology to frame it within an Indigenous paradigm. Emphasizing the good and the positive in order to move forward and (re)build should be integral to the balancing of any methodology employed within Indigenous contexts. Research cannot help communities if it focuses solely on Biskaabiiyang, it needs to move forward in a positive light to achieve mino bimaadiziwin.

3.2 Appreciative Inquiry as Indigenous Research Methodology

My original research project held the intention of utilizing Appreciative Inquiry within an Indigenous Methodological context. I feel strongly about this concept, especially in its relevance for white-allied researchers seeking to do respectful research in a good way. For these reasons I have chosen to include it in my paper despite not being able to use it fully in my research endeavors.

I wish to introduce Appreciative Inquiry methodology within the frameworks of an Indigenous research paradigm. Before continuing, I need to provide you with a basic understanding of Appreciative Inquiry. An Appreciative Inquiry methodology is an adaptation of Participatory Action Research models which employs a positivist approach. Instead of asking "What is wrong?" and taking a "fix-it" approach, Appreciative Inquiry asks "What is working" and builds on constructive methods already established within a specific community or organization. Appreciative inquiry was created as an alternative to conventional "action research" in the 1980s (Cooperrider and Srivastva 1987), it brings to the forefront the strengths and successes of individuals, organizations and communities to promote life, health, vitality and excellence (Cooperrider and Whitney, 2005). Possibly the greatest strength of appreciative inquiry is its flexibility and adaptability in practice (Nyaupane and Poudel, 2011) which makes it ideal for working with Indigenous communities operating under a different paradigm than Western research models.

Appreciative inquiry is a "strength-based, generative, constructivist, and participatory action research method, and is a highly dynamic and adaptive process that emphasizes the use of innovative methods to study complex human systems" (Nyaupane and Poudel 978). Its roots can be traced back to Buddhist and Hindu philosophies as well as the classic works of well-known psychologists; William James, Erik Erikson, Carl Jung, Abraham Maslow, Carl Rogers and

others (Nyaupane and Poudel 2011). It adopts a social constructivist paradigm – a middle ground between post-modernism and post-positivism – which embraces the following; "1) relative ontology – that there are multiple realities; 2) transactional and subjectivist epistemology – that investigator and participants are interactively linked in an inquiry; and 3) hermeneutic and dialectic methodology – that reality can be elicited and refined through the interactions among researcher and participants" (Nyaupane and Poudel 978). Appreciative inquiry rejects the current research regimes which employ rigorous, systematic and objective research methodologies and instead advocates for research with people rather than research on people. The appreciative inquiry process is presented in several models, the most common being the original Cooperrider/Srivastva model referred to as the 4-D model (Cooperrider and Srivastva 1987). The 4-D model is a 4-D cycle that involves the following four steps (Appendix A); 1) Di*scovery,* appreciating what gives life; 2) *Dream,* envisioning what might be; 3) *Design,* co-constructing what should be; 4) *Destiny,* sustaining the changes (Cooperrider and Whitney Ch.3).

Multiple successful applications of the Appreciative Inquiry process have been documented in a wide-ranging variety of disciplines including; psychology (Compton 2005; Gable and Haidt 2005), sociology (Glaser 1992), tourism (Andereck and Nyaupane 2011., (Nyaupane and Poudel 2011), criminology (Liebling et. al. 2001, 2009), business and organizational development (Cooperrider and Srivastva 1987; Elliott 1999), health and nursing (Elliott 1999; Carter 2006), and environment (Ashley and Carney 1999; Department of National Park and Wildlife Conservation 2008) but there is no published record of a researcher using Appreciative Inquiry with Indigenous peoples/communities.

I was first introduced to Appreciative Inquiry by Master's student and Wahta Mohawk Community member, Ryan DeCaire. He explained to me that Indigenous people in Canada experience ill-health disproportionately compared with the rest of the population; "The Aboriginal population in Canada has a life expectancy 5-7 years lower than that of the Canadian population as a whole, and experiences higher levels of chronic respiratory disease, diabetes, obesity and cardiovascular disease" (Mundel and Chapman 2010). Focussing on these facts and approaching research from this "problem-based" perspective can be demoralizing, degrading and

disheartening. To birth one's research topic out of the negative is to focus on alienation and neglect relationships, even to the point of degrading already existing relationships (Wilson 2008, 109). DeCaire points out that framing research so as to focus on what *is* positive and successful in a community holds the potential to invigorate, enthuse and promote positive success to other aspects of community life (DeCaire 2012). This supports Simpon's use of the *aanijigone*, as well as Wilson's assertion that Western research approach "focuses on problems, and often imposes outside solutions, rather than appreciating and expanding upon the resources available within Indigenous communities" (Wilson 16). Appreciative Inquiry achieves this balance by immersing a Western methodological framework within an Indigenous research paradigm where the community members create internal solutions in accordance to their cultural protocols, experiences and perception of success. Focusing on promoting health and vitality is a tool to empower Indigenous communities to engage the research process without the burden of colonialism or past failures and move into a new space of mutually beneficial research. Since Appreciative Inquiry "focuses on the positive and is grounded in participants' actual experiences, they 'walk away with a sense of commitment, confidence and affirmation that they have been successful. They also know clearly how to make more moments of success" (Clarke et. al. 413).

Perhaps most important within the Indigenous application of an Appreciative Inquiry methodology, is the potential for this framework to incorporate relationships, spiritualities, oral histories and storytelling methodologies in a respectful manner. Lutz states that he uses "a simple overarching methodology: dialogue" (Lutz 16). Dialogue as methodology serves to accommodate and acknowledge oral histories within Indigenous cultures. From an Indigenous perspective, "how you learn is as important or perhaps more important than what you learn" (Simpson 380) making oral histories "as much a relationship as it is a method" (Lutz 17). Allowing for this within Appreciative Inquiry affirms Indigenous identity, so Indigenous researchers need not fear compromising their culture or values working within a Western framework. Nor will the stories and oral histories expressed be compromised through interpretation within a Western framework.

I wish to draw again from the work of Shawn Wilson to remind of the difference between methodology and methods within an Indigenous research paradigm, building on the diagram provided earlier by Carter and Little;

> *"[M]ethodology is a part of the paradigm that guides the research and is based on the assumptions of the ontology and eptistemology. The methodology can be seen as providing the final destination in the research journey…Methods are the particular tools or techniques that you use to actually gather data… These methods are only means to an end (your methodology). Thus, as long as the methods fit the ontology, epistemology and axiology of the Indigenous paradigm, they can be borrowed from other suitable research paradigms" (Wilson 2008; 39).*

This is how I perceive Appreciative Inquiry to be used within an Indigenous research methodology; the methods involved with Appreciative Inquiry may be borrowed into an Indigenous research paradigm. Typically within an Appreciative approach, members of the community are trained in the Appreciative Inquiry process and then direct the research process in true Participatory Action Research fashion (Reed 2006); creating the research goals, designing the research process, analysing the data and communicating the results. Thus fitting into an Indigenous research paradigm as described by Wilson as being "by and for Indigenous peoples" (Wilson 15). Indigenous peoples being involved in their own research means that the stories and knowledges shared are not being interpreted through the dominant epistemological lens, but rather several lenses, including that of the community involved in the research project. The "Dream" stage creates space for such dimensions and oral histories to be shared and encourages members of the community involved in the research project to dream to the fullest extent of their imaginations what could be developed for the future, based on the positive processes of the present and past.

It should be noted that Appreciative Inquiry is not a "one-size-fits-all" methodology that will work in every situation, and that the positive outcomes described above will only be achieved if the researcher approaches his research in a good way, and if the community is open to

involvement in a research project. Several scholars have offered guidance on how to accomplish respectful research with Indigenous peoples (Kievit et al. 2003; Wilson 2008; Kowalsky et al. 1996; Weber-Pillwax 2001). Shawn Wilson suggests that researchers ask themselves the following questions in conducting research within an Indigenous paradigm;

- *How do my methods help to build respectful relationships between the topic that I am studying and myself as researcher (on multiple levels)?*
- *How do my methods help to build respectful relationships between myself and other research participants?*
- *How can I relate respectfully to the other participants involved in this research so that together we can form a stronger relationship with the idea that we will share?*
- *What is my role as researcher in this relationship, and what are my responsibilities?*
- *Am I being responsible in fulfilling my role and obligations to the other participants, to the topic and to all of my relations?*
- *What am I contributing or giving back to the relationship? Is the sharing, growth and learning that is taking place reciprocal?*

(Wilson 2008, 77)

3.3 Biskaabiiyang

As previously mentioned in section 3.1, Biskaabiiyang is a process which Anishinaabe researchers can engage to recognize the impact of colonization to them on a personal level, so as to participate in the research process in a good way (Simpson 2011; 50). Not being of Anishinaabe descent I fully acknowledge that I am unable to engage in this process in its truest form however, I feel that the idea of exploring and evaluating one's colonial impacts to be a valuable practice especially for allies working within Indigenous paradigms. The following outlines the process I undertook in order to explore my own colonial influences.

To begin (re)searching (Absolon 2011) in a good way, I first participated in a personal smudging ceremony. The smudging ceremony was given to me by an Anishnaabe elder during a period of

intense personal sorrow in 2009 in Peterborough On. I conducted the ceremony for myself on the top of a cliff facing East where I frequently rock climb. The place has deep personal meaning to me and therefore was fitting for such a ceremony. I cleansed my eyes, my mind, my throat, my ears, my heart and my stomach in the way I was taught. I prayed and meditated at the top of that cliff for a long time contemplating the many ways which Colonization has shaped my family history and my sense of self. I grappled with issues of settler guilt and again considered my place in these knowledge relationships. Ultimately Dan Longboat's words settled in my heart; when Dan Longboat speaks of the Haudenosaunee Creation story he speaks of the four colours of human beings, each with their own gifts, sent to the four corners of the earth to come together again at a time when the world needs their knowledges to be brought together. My ancestors, the human beings formed from the white foam of the river, have a place in that story. My ancestors also have a prominent place in the story of colonialism and imperialism in North America and so it I realized it is imperative that we have a place in the story of 'de-colonization' or 'resurgence'.

Following the smudging ceremony I intently explored my family's histories on both sides. Which was a valuable and rewarding experience in and of itself. Uncovering the paths that led to my family's settlement in Southern Ontario was intriguing and revealing of my own roots. I then explored my personal life's journey; the series of choices, influences and events that culminated in my being in this time and place, and my own ontological lens(es). Through a heightened awareness of the colonial forces in my life and thoughts, I actively attempted to bring that awareness into all aspects of my research relationships. There were times when I failed and was lovingly re-directed by my participants. I embraced these moments with humility and learned from them.

The final aspect of this process I experienced surprisingly during one of my interviews. I was asked the question, "Why are you doing this research?" I proceeded to give my spiel about how my first project was cancelled part way through and I landed on this alternative project through my relationships with the people in the Indigenous Environmental Studies program. My participant repeated her question, "Why are you doing *this* research?" She wanted to know my personal motivations for conducting this research project. Further, she wanted me to articulate it

in one word. It was a challenging exercise and as I sat silently, contemplating my own motivations I was surprised and quite frankly, a little frustrated with myself, that I had not already explored my own motivations. Finally I answered, "reconciliation", of the damaged relationship between knowledges and peoples, as well as with myself. Reconciling with my own histories, personal and ancestral, to move forward in mutually beneficial ways towards respect and integrity and mino bimaadiziwin.

4.0 Case Study: Trent University Indigenous Environmental Studies Program

4.1 Background Information

The Indigenous Environmental Studies/Science Program (IES) is the first degree-granting program of its kind in North America. IES is the result of collaboration between the Indigenous Studies (INDG) and the Environmental and Resource Science/Studies Program (ERS) Departments at Trent University. It is designed to give students the necessary skills and knowledge to work in the growing field of Indigenous environmental issues. The following is taken from the Trent University IES program website;

> *"The IES program is unique in Canada and brings together principles of both Indigenous knowledge and western science. Instruction in these two approaches will provide students with the necessary skills and critical thinking abilities that they can begin to use in addressing the complex environmental problems facing both Indigenous and non-Indigenous communities around the world today. The foundation upon which the program and its courses are based inherently recognizes both the strengths and limitations of any single perspective when attempting to understand and address environmental and social issues. Students will gain an appreciation and understanding of the benefits of this multidisciplinary approach through theory and practice based learning involving topical and current case study reviews. The skills obtained in the Indigenous Environmental Studies Program will support the training of creative and broad thinking individuals, well prepared to*

address a wide range of environmental and health issues"
(http://www.trentu.ca/ies/).

Trent was founded in 1964 with a strong focus on interdisciplinary approaches to post-secondary education. Nestled on both banks of the Otonabee River, surrounded by over 1200 acres of forest, it provides an ideal setting for this program with ample exposure to nature and the outdoors. It is also located near the First Nations communities of; Alderville First Nation, Curve Lake First Nation, Burleigh Falls, Hiawatha First Nation and the Mississaugas of Scugog Island First Nation, enriching the program by giving students the opportunity to be involved with communities, visiting elders on campus and a strong Aboriginal Advisory Board overseeing programming in the Indigenous Studies and Indigenous Environmental Studies programs.

4.2 History of IES

(I have constructed a timeline detailing the history of the IES program; please see Appendix B)

Dr. Roronhiakewen Dan Longboat (Kanien'kehá:ka, Ohsweken), Director of the IES program, first conceived of the idea in 1995 when he was working for the Ontario Ministry of Natural Resources (OMNR) on environmental issues impacting First Nations Communities. He recognized various gaps between ministry practices and First Nations needs on issues such as; natural resource management, mining and development, water policy and many others. "These experiences working for the OMNR, coupled with my own personal interest in traditional lifestyles, cultural revitalization and sovereignty issues, led me to look toward contributing to the resolution of some of the environmental and education issues" (Longboat 1998; 28). In 1996 Dan Longboat approached David Newhouse, director of the (then) Native Studies program at Trent University and discussed his idea. The concept fit neatly with Trent's interdisciplinary nature and the values and ideals of the Indigenous Studies department. The timing was fortunate as around the same time, Fikret Berkes was in the process of conducting an external review of Trent's Environment and Resource Studies/Science Program (ERS). One of his recommendations was to create cross-disciplinary relationships and courses with the Native Studies department. This

recommendation contributed strongly to ERS's willingness to support the development of an IES program when it was later pitched to them by Longboat and Newhouse.

During his educational journey at York University's Faculty of Environmental Studies, Dan conducted various surveys, working groups and conferences to assess interest, gain support, and mass resources for the creation of the Indigenous Environmental Studies Program (IESP). They include; Indigenous Environmental Studies: A Feasibility Study (Appendix C), The Aboriginal Focus Group Workshop Report (Appendix D), The Environmental and Resource Studies Program Survey (Appendix E), The Trent University Student Survey for Indigenous Studies (Appendix F) and the Report for the Aboriginal Education Council (Appendix G). Overall he found overwhelming interest in the potential program from within the Trent community as well as beyond from government, industry and First Nations communities (Longboat 1996). In his paper Longboat outlines his rationale for the program at length, I have incorporated selections of that rationale here;

> *"Aboriginal Peoples face an almost overwhelming number of issues and problems in their relationship with the larger society. These include the entire spectrum from social, cultural, political and economic, including recognition of Aboriginal and Treaty Rights, Land Claims and Self-government. In particular, Aboriginal communities throughout Canada, are being faced with increased environmental and resource management problems and are in desperate need to develop real solutions. As Aboriginal people, we are living in small and very limited land bases, with little or no economic base, or access to natural resources with which to sustain ourselves. In the south, our traditional economies have been all but obliterated and consequently we have been forced into a marginal economic existence. In the north, Aboriginal communities are under tremendous pressures to have and maintain even a subsistence existence. Unemployment of Aboriginal peoples is the highest of any people in Canada and in many of our communities it is as high as 60%, in some communities higher…*

> *A university level program could create the opportunity to learn, study and help develop appropriate solutions to our common environmental problems. While at the same time provide support and recognition to Indigenous Peoples and their knowledge systems. In the process provide to all peoples, a new way of relating to each other and the natural world. To accomplish this we need to work together, as Aboriginal and non-aboriginal, Elders and Scientist, as students and teachers – we can no longer afford to work at odds with one another, but must now begin to work together to re-strengthen Our Mother the Earth – this is our responsibility and our greatest challenge" (Longboat 1996; 122-125).*

In order to accomplish this, Longboat details how the program needs to be "ground-up" in nature "by and for" the First Nations peoples directly affected by these issues and this type of education. Dan's strong connection to his Haudenosaunee community, as well as his strong relationships to other First Nations communities formed the core of the pedagogical framework and ideology surrounding the program; "this program will be very much a culture-based program, building a foundation of essential knowledge and skills graduates need to understand and work in "community". The cultural perspective on environment is meant to provide graduates with a much deeper understanding of the role of human beings in the environment and focus that knowledge on rebuilding the concept of community, lands and resource resolution and environmental issues" (Longboat 1996; 42).

In order to stay true to his core values and vision, while at the same time attempting to deal with the active colonial processes inherent in post-secondary institutions, Longboat invoked Henry Lickers' *Naturalized Knowledge Systems* framework. The theory of Naturalized Knowledge Systems (NKS) was created by Lickers in response to inequitable (colonial) practices within resource management and community development. It encompasses six philosophies;

1. The Earth is Our Mother
2. Cooperation is the way to survive
3. Knowledge is powerful only if it is shared

4. The spiritual world is not distant from earth
5. Responsibility is the best practice
6. Everything is connected to everything

(Longboat 1996; 86)

The Naturalized Knowledge System works as a balance of the three basic principles of Respect, Equity and Empowerment (Longboat 1996; 88) as summarized by Table 1.

Respect	Equity	Empowerment
Understanding	Finance	Application
Communication	Knowledge	Authorship
Consensus	Networks	Credibility
Mediation	Personnel	Partnership
Honour	Social Power	Responsibility

Table 1. The 3 Principles of NK

Story and Lickers describe the three principles as;

"Respect

The process of working with First Nations communities requires that both cultures (aboriginal and non-aboriginal) must develop a basic respect or understanding of each other. Time must be taken for non-aboriginals to meet, learn and develop a friendship and working relationship with aboriginal community leaders. Concepts of environment, law, government, and society all differ radically from mainstream north American culture. These differences must be acknowledged, understood and respected. Only through the sharing of knowledge and experience can the aboriginal and non-aboriginal groups work together and successfully complete a project. Respect also includes the "principle" of inclusion, where all new projects and partners are given equal opportunity to present their ideas, and be heard.

Equity

After the initial introduction between cultures, "equity" will become an important next step. Equity can be defined as "anything that has value." Therefore, equity may be money, labour,

time, materials, interest, support, etc. In western societies, equity usually indicates financial equity, or, simple dollars. It is important that we begin to value information, knowledge, and "sweat equity" (donated time) as equivalent contributions to a partnership project, as some community based, volunteer, or aboriginal organizations may not have true "dollars" upon which to build a partnership.

Empowerment

Empowerment has been defined as "the act of enabling" (University of Ottawa, 1994). This means, that any partnership with a "host" organization requires that the "host" organization must allow the partner to undertake and complete the project on its own terms, and with its own particular style. This is the hardest of all of the three concepts to implement, as it requires trust between potential partners. Without respect, and equity, trust cannot be built" (Story and Lickers 152).

These principles work together in balanced fashion to achieve true community based approaches to problems, whether in natural resource management or education. "Respect is foremost as it generates equity, which in turn generates empowerment, generating more respect and so on" (Longboat 1996: 88). Balance is of the utmost importance and the concept is adapted from the Three Great Principles of the Haudenosaunee Constitution, the Kaianere:kówa or The Great Law of Peace" (Longboat 1996; 88).

From the very beginning of the program's creation, Dan envisioned a four year degree granting program in Indigenous Environmental Studies which included "courses which help to understand our two respective knowledge systems, of ways of knowing and developing an appreciation and respect for their difference and similarities" (Longboat 1996; 129). This Venn Diagram illustrates the conceptual thinking behind the program (Fig. 4).

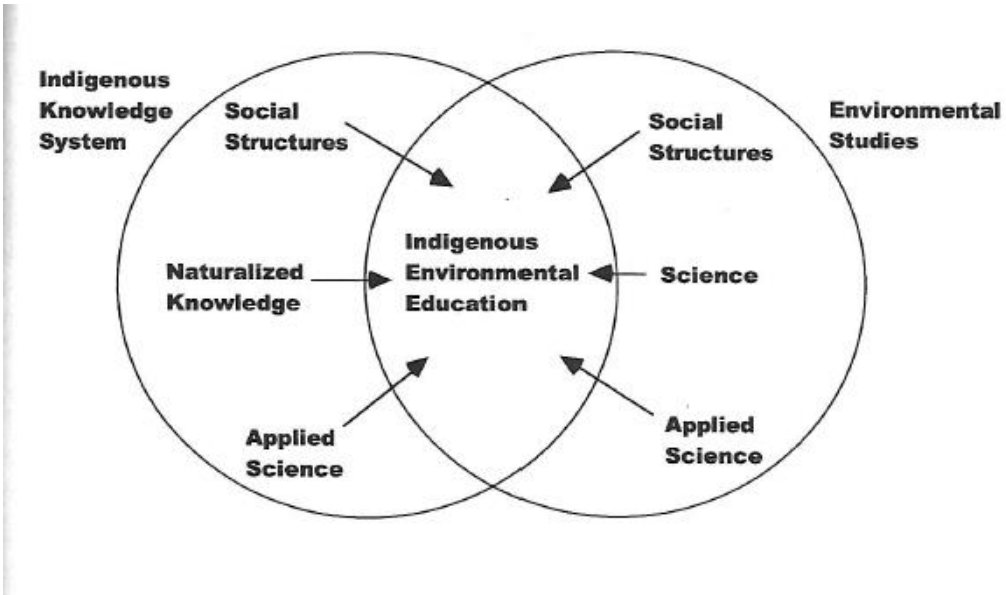


Fig 4. IES Conceptual Diagram (Longboat 2008; 124)

4.3 Methodologies Employed

Subsequent to my original research project falling through, I contacted Brigitte Evering, a PhD candidate with Trent's Indigenous Studies program for advice on what direction to take. She suggested that the IES program was in need of a review of some sort and to contact Dan Longboat, Director of the Indigenous Environmental Studies (IES) Program at Trent University. Dan and I have a long standing relationship which began when I was his student in the IES program in 2008. Over coffee, he expressed a need for a comprehensive document that chronicles the creation and successful implementation of the IES program. He recounted being approached many times by other post-secondary institutions and being asked how IES came to be and if he had any documents from the early days detailing the process. He admitted that aside from his 1998 Master's Thesis (Longboat 1998), he had nothing of the sort. And so, I set to attempt to understand the thinking, processes, people and environments (physical, mental, spiritual) that contributed to the creation of the Indigenous Environmental Studies program.

I attempted first to construct a timeline (Appendix A) following the major events in the history of IES. Dorothy Howard, an administrative staff member of the Environmental Resource

Studies/Science program whose job also entails support for IES, forwarded me 55 documents related to IES dating back to 2005. I analyzed the documents and constructed a skeletal timeline which had significant gaps. The main challenge lay in the fact that the IES program committee did not take many minutes of its meetings and I was left with a handful of meeting agendas (See Appendix H for an example). Further, several members of the IES program committee described how aside from the regularly scheduled meetings, many impromptu meetings would take place in hallways, lunch rooms and at kitchen tables that were never recorded. The challenge then would be to accurately document the events, thinking, contributions and scenarios that played out almost 15 years ago. I decided that conducting interviews was crucial to this endeavor.

Over coffee and a questionable gluten-free brownie, I met with Dan Longboat and Carly Armstrong, a PhD student in the Indigenous Studies program at Trent and Dan's teaching assistant of 2 years, to discuss in more detail what he wanted from the research project and with whom I should conduct interviews. Once I had ascertained a better picture of what was needed, as well as the key players I began scheduling interviews and structuring the interview questions. In total, seven participants were interviewed. Although small, I feel the sample was representative of the IES community.

Originally I had wanted to keep to an Appreciative Inquiry format however found that the methodology would not work in such a context. Most of the questions were framed to establish a historical timeline and understanding of the elements crucial to development of the program and I chose to include several Appreciative Inquiry style questions. See Appendix I for the Interview Guide including questions. The interviews were semi-structured and conversational in nature lasting between one and four hours. I did not ask all of the questions on the interview guide in each interview; due to the conversational nature of the discussions, many questions were answered without a question directly being asked and in some cases the individual being interviewed had specific relationships to the program and therefore only certain questions were relevant to their position. Some interviews were recorded electronically while others were not. The choice to be recorded was entirely the participant's, though in some cases due to noise it was not possible to record. For interviews not recorded electronically, I took notes throughout the

interview. Throughout the interview process I maintained a deep understanding for personal and reflexive truths (Simpson 2011; Johnston 2007; Barker 2010; Cheney and Weston 1999; Archibald 2008; Wilson 2008) similar to the Anishinaabe concept of *debwewin* (Section 2.1). Finally, I gave each participant a bundle of sage harvested from my gardens and dried by my son and I, as a small gift of gratitude for sharing their time, words and sometimes homes with me. Prior to final submission each participant had the opportunity to review how their words and sentiments have been incorporated into this work and where desired, appropriate alterations and edits were made.

To support information shared in the interviews, I also reviewed several articles and publications surrounding the IES program.

4.3.1 Limitations

It is necessary to briefly note the limitations of my research project, both those self-imposed as well as those inherent with this type of work, and those attached to the context-specific to this project.

Firstly, due to the collapse of my first project in mid-April, time constraints posed a great limitation to this research project. This resulted in not being able to conduct as many interviews as I would have liked as some individuals were not available during the summer months, and due to short timelines I was unable to arrange meetings with one specific individual who was a key individual in the development of the program. The time constraints also influenced my writing and the time I was able to spend analyzing the interview conversations and reflecting on the process as a whole. I acknowledge that I perhaps with different timelines I would have been able to delve deeper into the subject matter here.

Another limitation was posed by the size of the IES program. Being a small program, maintaining anonymity is difficult as those within and close to the program could readily identify participants from their ideas, language, words etc. as presented in the research materials. This creates the potential for participants to feel uneasy about being candid or fully expressing themselves during the interviews. While only one of my participants explicitly spoke to this

point, I perceived others to be weighing their words and some chose not to be recorded for this reason.

Finally, as noted earlier one of the limitations to this project was the lack of written or documented materials chronicling the development of the program and the evolution of the thinking behind it. Having to rely on human memory is inherently flawed, there still exist gaps in my timeline and there is certainly the necessity for someone to further develop this account of the IES program.

4.4 Analysis

I began to contemplate the major themes which emerged from both the interviews and the published literature. I decided to focus attentions on the; *Factors Contributing to Success* and *Challenges and Obstacles* summarized below.

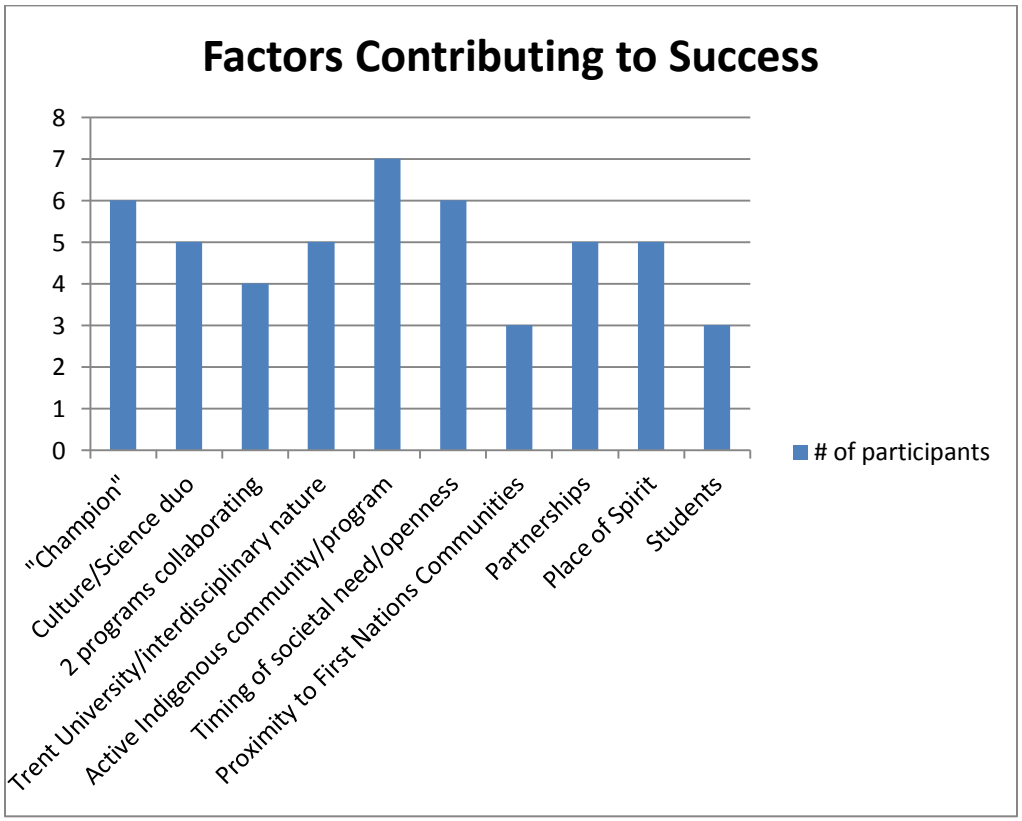


Table 2. Summary of the factors contributing to the IES program's successful implementation according to interview participants

Champion

Many participants credited the success of the program to having a 'Champion' capable of massing support, enthusiasm and passion for the IES program. This is of course, Dr. Dan Longboat, the program's founder and director since 2003. Participants described his 'champion' qualities to include; charismatic, connected to community, strength in communicating the ideals of the IES program, cultural figurehead, passionate, persistent and persuasive. For her Ph.D research, Vivian Hauser from Australia conducted case studies of Trent's IES program along with the Integrative Science program at Cape Breton University. Speaking about Dan Longboat she commented, "His experience, positioning, and involvement in the program demonstrate that the driving impetus for the development of IES has come directly from community" (Hauser 52).

Culture/Science Duo

A number of participants also spoke to the dyad of Dan Longboat and counterpart, Chris Furgal who joined IES in 2006 bringing a scientific background, community connections in the north and strong organizational skills to the program. Many participants credited the successful achievement of the degree-granting status of IES to the dynamic of Dan's passion and community connections in balance with Furgal's scientific presence and organizational skills. Furgal is especially crucial in attracting and supporting graduate students. While IES does not (yet) have its own graduate studies program, Furgal provides guidance to students in the Indigenous Studies Ph.D program, Sustainability Studies MA and the Environmental & Life Sciences MSc and Ph.D programs. One graduate student interviewed described him as an 'awesome IES force' and Barbara Potter recounted how he helped reconnect her background in science to her research project within the Indigenous Studies Ph.D program.

Longboat's networks with First Nations Communities, other institutions, industries and governments keeps him busy on the ground working in communities spreading the IES message. Furgal provides balance by being involved more with the scientific and organizational side of things; navigating the Trent Administration and such. It should be noted that before Furgal joined the program in 2006, Tom Whillans was in the role of providing the scientific and organizational support to IES.

Two Programs Collaborating

Half of the participants spoke to the relationship between the Environmental and Resource Studies/Science (ERS) program and the Indigenous Studies (IS) program as being central to the IES program's development. Tom Whillans recounted how Fikret Berkes' external review of the ERS program and recommendation that they create stronger relationships with the Indigenous Studies department was pivotal to the process of developing IES. An early member of the IES program committee commented that while the committee was made up of faculty, staff and students from both departments, everyone got along and was on the same page. They shared the same goals, were supportive of one another and shared a deep sense of comradery and humour.

For her Ph.D research with Antioch University in New England, Nancy Rich evaluated six different programs working at integrating Indigenous Knowledge into Post-secondary environmental science programs. Among the programs she studies was Trent University's IES program. In her conclusions she stated that "Collaborations between an environment-related department and an Indigenous studies department drew reports of support and collegiality more than did single-department endeavors" (Rich 149).

Trent University

Participants credited Trent University itself as a major factor in the development of the IES program for its interdisciplinary nature, small size and luscious natural setting. One graduate student also noted that Trent is one of the only Canadian Universities with a strong Indigenous

Studies Ph.D program which attracts the right kind of graduate students to contribute to the IES program. Nancy Rich credited "Trent University's tradition of interdisciplinarity and innovation as instrumental in establishing the first Indigenous environmental studies program in North America" (Rich 149). She also notes that, "The large and complex apparatus of hiring, tenure and promotions decisions, grant funding, and the like, privileges Western knowledge especially with its reliance on written forms of knowledge and conventional academic training. Trent has done pioneering work in overcoming this obstacle, establishing an alternative tenure route for Elders as well as a Dual Scholars tenure path for individuals with both academic and Indigenous accomplishments" (Rich 151).

Active Indigenous Studies Program/Indigenous Community

All seven research participants spoke to the importance of having a vibrant and active Indigenous community/Indigenous studies department to the development and continuance of the program. Trent hosts an annual Elder's Gathering each winter, an exciting Indigenous theatre space and program, weekly Indigenous teachings, regular teachings and storytelling in its Tipi, a sweat lodge on campus and is constantly host to visiting Elders from around the world. Hauser supported this notion by saying "It was found that direct Indigenous community involvement in the programs, along with the philosophical foundations of the programs were significant factors that evidently strengthened the programs by establishing a privileged place for Indigenous proples and their ways of knowing" (Hauser 51).

Timing of Societal Needs/Openness

Many participants alluded to the fact that the program was successful in its development because of the growing need for such thinking and education in today's world timed with a growing openness and understanding for Indigenous ways of knowing. Barbara Wall Potter echoed how the time that we are in contributed to the successful nature of the program;

> *"I think about the prophecy of the seven fires or the 8th fire prophecy… I think the world – I mean there's major changes going on in the natural world – just the way the community and the world works and I think that we really are moving into the 8th fire when people will come together. Choose that path, whether it's a path towards materialism and consumption or if it's a path towards sustainability. From where I sit in this ivory tower at Trent… I can really see that people are realizing that we have to go the route of sustainability and they are looking for new ways to solve problems and bringing together those knowledges is going to do that. So I think that our students see that and that people outside of academia see that – not everybody – but the shift is there. The door is opening up and the timing is right for this to be successful" (Wall Potter 2014).*

Julie Kapyrka, current Instructor in the IES program, former Ph.D student and member of the IES program committee, and creator and instructor of Fleming College's Introduction to Indigenous Environmental Studies courses for the joint Fleming-Trent Ecological Restoration program, calls it "The Zeitgeist of the Times" (Kapyrka 2014). She spoke to how society is more open to Indigenous issues and indeed has a growing need for Indigenous knowledge due to the myriad of environmental issues we are faced with, as well as the recognition of the Crown's duty to consult First Nations, and growing acknowledgement of land rights issues.

Proximity to First Nations Communities

As aforementioned, Trent University is located near the First Nations communities of; Alderville First Nation, Curve Lake First Nation, Burleigh Falls, Hiawatha First Nation and the Mississaugas of Scugog Island First Nation. Many participants noted that having these communities within close proximity contributed to the active nature of the Indigenous Studies program and Indigenous communities at Trent University. It also affords the opportunity for Elders to visit Trent and students to visit communities.

Partnerships

Participants spoke about the multitude of partnerships the IES program had, has and is in the process of establishing as a contributing factor to its growth and development. In its early stages partnerships with the Aboriginal Education Council, ERS program and First Nations communities led to support and momentum to initiate the program. Over time, the program has seen partnerships with many First Nations, various industry groups, other post-secondary institutions including Fleming College through its specialized joint degree program in Ecological Restoration. Dorothy Howard observed that the partnerships with Fleming and the ERS department contributed to an increase in student enrollment.

Place of Spirit

The topic of spirit in the classroom came up repeatedly throughout my interviews affirming itself as not only a unique and key quality of the program but also of the people who are affiliated with it. Participants spoke to Dan Longboat's ability to infuse spirit in his lectures and teachings. Graduate students commented on the feeling of freedom in being able to express spirit in their work and teaching seminars. It was also noted as a factor which drew many students, staff and faculty to the program. A review of course survey data provided by Dorothy Howard revealed many students taking IES courses (many of whom were not IES majors) valued the integration of spirit in the classroom.

Students

Several participants mentioned that the students contributed greatly to the success and continuous development of the IES program. Carly Armstrong noted that the students become empowered through their studies and want to be "agents of change" (Armstrong 2014). In one account, an undergraduate student was frustrated that he could not do a double major in biology and IES and organized a petition to the University administration to allow such an option. Many

participants spoke to the transformational quality of the program both for the students as well as for the faculty and staff involved.

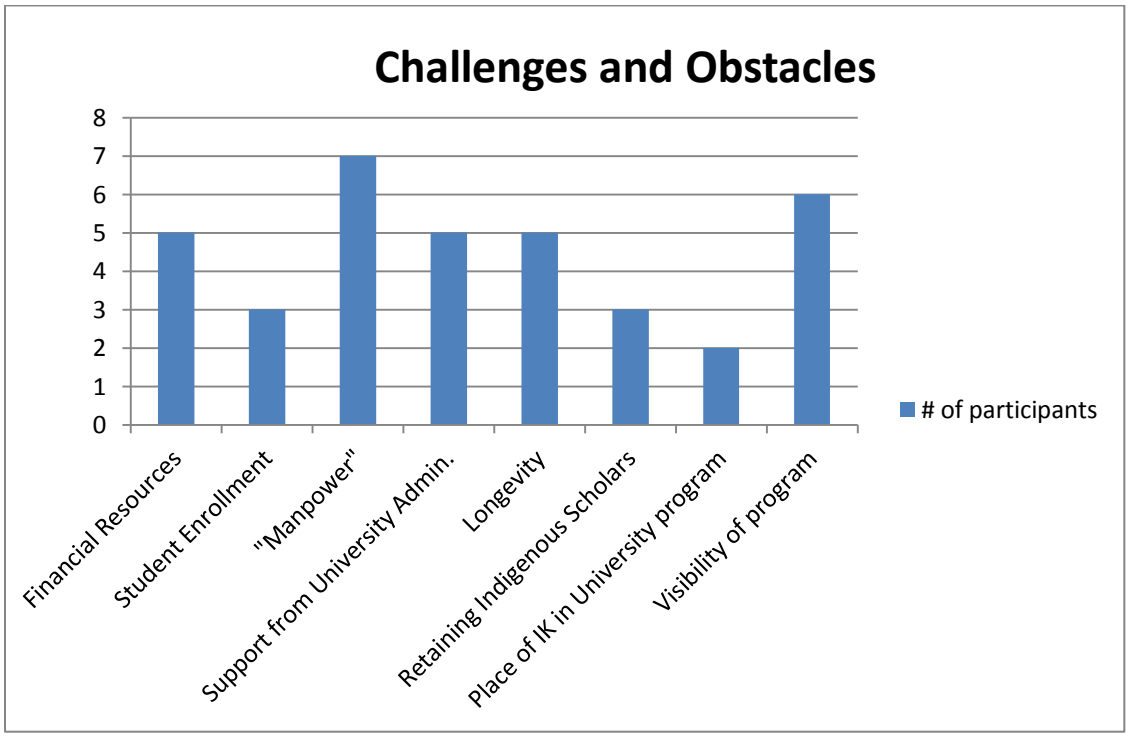


Table 3. Summary of challenges and obstacles faced by the IES program according to interview participants

Financial Resources

Participants were quick to bring up the issue of financial resources within IES, or express the need for increased financial resources to match increased interest in the program. However, one participant spoke to the opposite, that IES was fortunate to have special financial allowances. While it is noted that all University programs struggle for financial resources, IES is unique in that it has seen continuous increased student enrollment without a matching of increase in financial resources. Hauser comments that, "Limited financial resources also restricted both

programs in being developed as originally intended. For example, IES staff members were limited in the amount of time they could spend in community despite the fact that maintaining strong community relations is foundational to their programs" (Hauser 53).

Student Enrollment

Student enrollment was identified as a challenge for two reasons; some participants felt that the numbers were low (relative to other University programs) and that it was continuously at risk of being 'shut down'. While the more popular opinion was that student enrollment was increasing at a rate that the program's financial and physical resources could not keep up with.

"Manpower"

All of the participants expressed concern over the 'manpower' within the program in several ways. First, as mentioned above, that the faculty and staff for the program were not increasing to meet increased student enrollment numbers (due to lack of financial resources). Faculty may only teach a certain number of courses, and while Dan and Chris are both on "course overload" for teaching hours the program is unable to develop further and cannot introduce new courses to meet the needs and demands of industry and students. Dorothy also noted that in her position as administrative support to IES, technically only 1/10 of her position should be dedicated to IES related activities however in reality she said is accounts for much more as a result of both the needs of the program as well as her passion and commitment to the values of IES, the students and the faculty.

Support from University Administration

Support from the University Administration has posed several obstacles to the IES program in its development phases as well as in the present day. Participants expressed that the definitive challenge within the Administration was that they seldom recognize or understand the Indigenous values and processes necessary in a program such as IES. For Julie Kapyrka this

meant having trouble providing proper honorariums for Elders, for other participants it meant difficulty in scheduling classes outdoors. Four participants including Dan Longboat, ruminated over the difficulty in getting IES its own independent course code through the administration. Another consideration is that the administration is constantly in flux and so the program is at the mercy of the agendas of administrators.

Longevity

Several participants expressed concern over the longevity of the program. IES is still a very new program, only 5 years into degree granting status and 15 from being a diploma program and emphasis option. Brigitte Evering noted that those who created and developed the program are still involved and that it has not yet made a transition to a new set of core faculty. Several participants voiced apprehension as to the sustainability of the program if Dan Longboat and Chris Furgal were to leave.

Retaining Indigenous Scholars

Retaining Indigenous scholars was identified as being an issue since many Indigenous scholars do not wish to conform to academic administrative regulations such as tenure regulations and an emphasis on publishing. Combined with a constant battle to legitimize themselves, their Indigenous knowledges and their communities, some scholars are quick to leave institutionalized settings to pursue independent or community work.

Place of Indigenous Knowledges in a University Program

Only two participants touched on this issue as a challenge the program has and continues to face. ‘What Indigenous Knowledges are included in the curriculum and whom are they for?’ is an ethical question commonly asked in this field, that Dan Longboat addressed himself in his 1998 Master’s paper;

> *"At the same time we have to have parameters on what "sacred" knowledge we can share and teach. There is a special time and place, and circumstances at which time sacred knowledge is earned and given, and its place is not in a classroom. Most importantly this is not the point of the Indigenous Environmental Studies Program. This program is intended to share an Indigenous knowledge system and to provide perspectives on environmental issues, to begin to develop a sense of community to begin to resolve the environmental problems facing the community… it is not my place to tell an Elder…your teacher, what should not be taught. This is sensitive: only direct experience will show us our limits" (Longboat 1998; 119).*

Visibility of the Program

Visibility of the program was classified as one of the leading challenges facing the program which goes beyond the University itself. Dorothy Howard and Tom Whillans identified that students are not being exposed to this type of program or thinking in high school and therefore don't know to look for it in post-secondary. Howard explained that very few IES majors come into the program in first year, most students "stumble" into it or hear about it from friends in second or third years. IES's financial resources do not afford a large advertising budget to get the word out and so the program relies mostly on word of mouth to recruit students. Again looking at the student course surveys, many students selected "word of mouth" as response to the question "how did you learn about this course" or "why did you take this course"? Longboat also expressed concern over similar programs that are being established in other Universities not using the same terminology (Indigenous Environmental Studies/Science) as an obstacle in creating an emerging 'discipline' of IES which would add to the program's visibility.

4.4.1 The Three Principles of Naturalized Knowledge Systems Framework

Dan Longboat set out in his formative IES paper that Henry Lickers' Naturalized Knowledge System (NKS) would provide the framework for the program; I thought it would be prudent to evaluate how the NKS framework has been applied. The following chart outlines the manner in

which the NKS framework was followed through Dan Longboat's Masters project to create and implement the program at Trent.

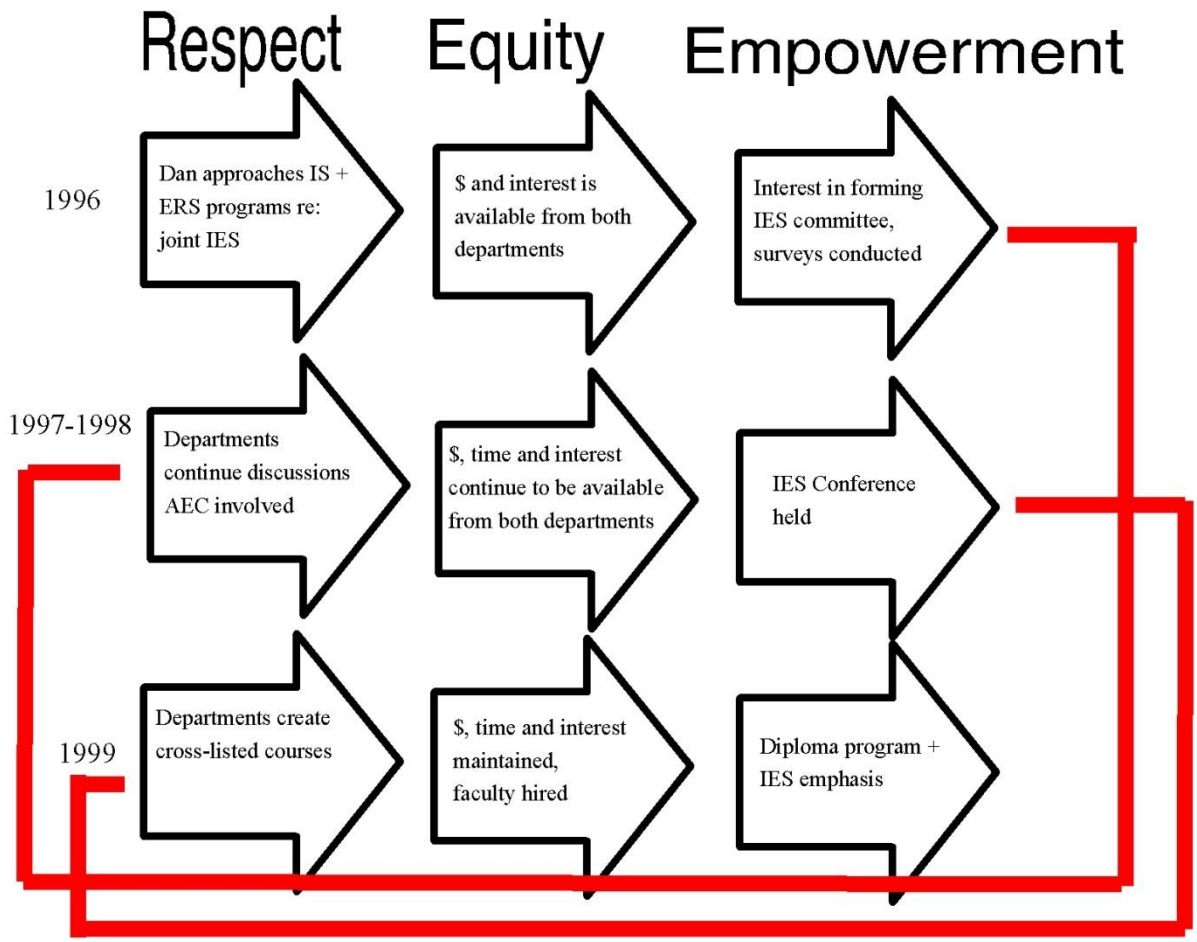


Fig. 5 NKS model used in creating IES program

One of the processes tied to the NKS is the "Zeal to Deal" (Story and Lickers 1997; Holmes, Lickers and Barkley 2002; Lemelin and Lickers 2004). The Zeal to Deal is a concept which epitomizes the aboriginal ideal that "cooperation is the only way to survive" (Story and Lickers 151). It includes the Three Principles outlined above (Section 4.2); Respect, Equity and Empowerment. Story and Lickers go on to articulate how one can tell if the deal is working. The deal in this case being the partnership between ERS and IS to produce IES.

> *"Evidence the Deal is working*
> *There are various signs that the "deal" is in place. Some of the most obvious indicators are: generation of new equity over time, increase in number of participants, a feeling of satisfaction and contentment with the progress of the project, increase in output, and general increase in interest in the partnership" (Story and Lickers 154).*

I will take a moment to briefly evaluate the IES program in the context of each of the identified indicators.

Generation of new equity over time

The IES program has been successful in creating new courses, curriculums, gaining new graduate students and partnerships over its 15 years including; the addition of Indigenous Health courses in 2007, a new Indigenous food systems course in 2012 and partnerships with Fleming College and TRACKS youth science camp. These new courses and partnerships have brought additional resources; financial and manpower, to the program.

Increase in number of participants

There has been a steady increase in student enrollment as illustrated by Table 4 below courtesy of Dorothy Howard.

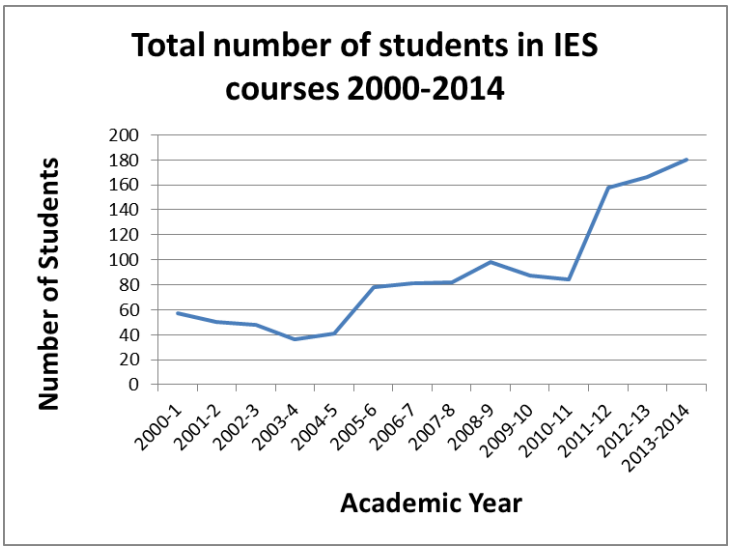


Table 4. Number of students enrolled in IES courses over the 14 year span of 2000-2014
Note: In 2010 - 2011, both the IES Program Director and a key faculty member were on sabbatical and parental leave respectively, which resulted in decreased student enrollment for that academic year.

A feeling of satisfaction and contentment with the progress of the project

During my conversation with Dan Longboat, he expressed multiple times the feelings of satisfaction with the progress of the program and he continues to maintain optimistic visions for future developments. This feeling of satisfaction was echoed throughout all of the interviews where participants shared an overarching feeling that they were doing 'good work' that was meaningful.

Increase in output

The number of IES graduates has increased 3 fold since being afforded degree-granting status as shown below in Table 5.

Year	# of IES Graduates
2010	2
2011	6
2012	7
2013	5
2014	9

Table 5. Number of IES graduates from 2010-2014.

General increase in interest in the partnership

In the 15 years since IES ran its first course, Dan Longboat has seen an ever increasing interest in the partnership both from within the Trent University partnership between IS and ERS, and beyond from other institutions, programs, individuals and industries. Dan recounted receiving phone calls at least once a week from someone asking if he had any graduates qualified in "X" or "Y" fields. He also shared with me how he is overwhelmingly approached by individuals from other educational institutions with questions about how to start their own programs, or forming a partnership with IES.

5.0 Conclusions

I feel it essential to acknowledge that what follows here is not necessarily a 'conclusion' but perhaps more of a summation and hopeful reference to the future of the IES program. Like the nature of Indigenous Knowledges themselves, the program is constantly evolving, adapting and shifting to the needs of society, Mother Earth, and the students, faculty and staff involved at any given time. I hesitate in writing down these words for fear that they will be misconstrued or contribute to a stagnated understanding of the program. I emphasize again, that this is merely a snapshot of my knowledge and understanding of this program and the ideologies surrounding it at this precise moment in time.

I refer again to Wilson's assertion that "if research does not change you as a person, you aren't doing it right" (Wilson 2008, 83) to relate how I have experienced elements of personal transformation in doing and engaging with this research. I know that I am privileged to have been able to do this research and feel extremely grateful to all of those who have been a part of the journey and in shaping who I am as a student, researcher and human being. My relationship to the IES program first began in 2008 when I enrolled in INDG-ERST 2601 – Introduction to Indigenous Environmental Studies and from there, I embarked on a transformational learning journey at Trent University. Now I have been honoured to re-engage with the place, people and structures of the program in my research.

> *Journal excerpt May 2, 2014*
>
> *In the first week of commencing my MES degree journey at York, I sat in a circle with fellow students in my advising groups and two professors as we introduced our research topics and began to design our plans of study. I posed the question, "Should I pick a topic that I am passionate about or one that will help me get a job?" I was advised to follow my heart and my passions. That whatever ignited me would open the appropriate doors come graduation… Over the next year and half I lost sight of this passion… I increasingly began to doubt myself and my work… When my project fell through in April I was aghast… Ultimately I realized I had lost the spiritual element and personal relationship to my work…*

When I began the new project with Trent's IES program I tried to ensure I approached everything in a good way and stayed true to my spiritual connections. As I brought this awareness into my work, I felt the Spirit World respond in reciprocity; at times when I was incredibly frustrated, hopeless, in tears at my kitchen table, a magnificent thunderstorm would break out (this occurred three separate times). I would walk out into the rain and connect to the forces tied to my Anishinaabe name, share some words of gratitude and go back to my work recharged. Doing this research has been transformational for me in deepening my awareness of

who I am as a settler woman in relationship to these ideas and knowledge systems, and to all Creation. Discovering my place at within this field as a settler woman resonates with Nancy Rich's assertion;

> *"A Mohawk prophecy states that the four sacred colours of people in the world (red, black, yellow, white), each of whom was given a unique set of instructions by the Creator, would one day come back together on Turtle Island, to decide whether Life will continue or not. Now, knowledge from all peoples is needed; it is not necessary that everybody have the same knowledge. Key to the relationship between knowledges is that the integrity of each knowledge must be protected so that it remains intact, in light of the fact that Western knowledge systems have shown a propensity to want to dominate all other knowledge systems" (Rich 99).*

Several non-Indigenous participants spoke to this point during the interviews. Carly Armstrong explained how at times it has been uncomfortable and tricky for her to be the only non-Indigenous student in her Indigenous Studies Ph.D program at Trent, but describes it as "necessary" and "good" to experience not having privilege. She also refers to the Mohawk prophecy outlined above along with Dan Longboat's vision for knowledge integration as providing her with a grounding for her work and teaching. Armstrong and Barbara Potter Wall have elected to teach the INDG-ERST 2601 Introduction to Indigenous Environmental Studies seminars together to represent both sides of the knowledge system and model a working dyad of Indigenous-Western knowledge relationships. Dorothy Howard explained how the values and interchange of knowledge in the program resonated with her despite not being from North America, as they bore resemblance to her Irish roots. She emphasized, "It is important that programs like this are developed so we don't go back to living in silos, which academia has a habit of doing". In Dan Longboat's express words; "That's why we are doing this work. It's not just Indigenous knowledge and science, it's not just Native peoples and settler peoples. It's really about all peoples beginning to work together. What are all of the colours of people bringing, how do we understand these things, what are the ancient traditions of peoples all around the world that we can all begin to learn from?" (Rich 120).

I feel that the IES program's greatest strength is its ability to speak to each individual who comes into contact with it, on a personal, emotional and spiritual level. Many students (and admittedly faculty and staff) are deprived of this manner of interaction and expression in a post-secondary environment and so it is not difficult to understand why so many students who are exposed to IES catch what Dorothy Howard coins "the IES bug" and continue in the program. Brigitte Evering describes that she was drawn to the program because it provided the setting and opportunity to use her gifts to fulfill her responsibilities with integrity. This positive and nurturing environment is what makes IES 'work' more so than any structural feature.

The Indigenous Environmental Studies program is not an Indigenous studies program. Nor is it an Environmental Education program. Nor is it a medium for transmitting sensitive cultural knowledge. It is a place for the 4 beings to come together to share unique knowledge systems with integrity and honour to address the myriad of environmental changes and issues facing human beings. IES has been successful in creating an environment in which to engage in these discussions around knowledge integration – but as Brigitte Evering pointed out; while the IES program has done an excellent job of graduating students who understand the value of bringing knowledges together, it is now time to focus on the core concept of knowledge integration. She clarifies that the program has evolved greatly in terms of its thinking and the greatest strides have been made in the past several years in terms of partnerships (TRACKS, Fleming), curriculum discussions, and generating a critical mass of graduate students, staff and instructors, but that they are only just starting to tackle the "how" of knowledge integration. Evering and Longboat outline the thinking that the IES program instills in its students;

> *"We teach that while technology may be needed for restoring contaminated water, the thinking embedded in Indigenous understandings can work to change our relationships with water. With a renewed relationship that values and changes behaviours with respect to water, we can eliminate or minimize the necessity of having to use technology to repeatedly purify it… With this understanding in mind, just as two different peoples can relate together, two different systems of knowledge,*

one from western academia and the other of the Haudenosaunee, are like the boat and the canoe represented by the two row wampum beads in the Kaswentha Treaty Belt. They can complement each other, and much benefit can come from their working together for the 'river of life' that we are both travelling and both depend upon. But we are both distinct and this is the unity of diversity – which we suggest is deeply desirable from a rational, ecological, spiritual, cultural and truly human perspective" (Evering and Longboat 249).

5.1 Recommendations

As far as replicating Trent University's Indigenous Environmental Studies Program goes, I'm not sure it can be done. Bohensky and Maru warned about knowledge integration becoming little more than a trendy box-ticking exercise and so I refrain from offering any such application. Broadly, I can call on Vivian Hauser's conclusion that "Given the challenges and tensions that IES … [has] experienced at the cultural interface of science education, it is apparent that genuine ontological pluralism requires universities to be reflexive. To be reflexive, we argue that a privileged place needs to be constructed for Indigenised curriculum. Indigenised programs have different needs: for staffing, in their structure, teaching and for maintaining their programs so as to fulfill community needs" (Hauser 54). Tom Whillans speaks to the unique nature of Trent's IES program and how similar programs need to be equally context specific;

"In terms of giving advice to other people, I think it is very complex and dependent, you have to understand their institution and how it works to know what sort of advice to give. I'm not sure that you can come up with some generic model. Different types of institutions might respond to different types of models… So if you're trying to make recommendations for what could take place at another place, you have to understand the context of that place in order to make suggestions. That doesn't mean it's not important to look at what programs already exist of that type elsewhere, you just have to understand that context" (Tom Whillans).

It is my sincerest hope that this work will be of use to those looking to incorporate Indigenous-Western knowledge relationships into their own environmental education practices. I hope that I have fulfilled my responsibility as a researcher in bringing together these ideas with respect and sharing them in my relationship to you. It is my belief that by incorporating some or all of the above components of Indigenous and western knowledge integration outlined above, that we can move towards balance in the field of environmental studies and education. As non-Indigenous academics, even if we may never be able to see through completely balanced eyes, we may at least be aware that we possess an overpowering Buffalo eye, and alter our frameworks respectfully. Julie Kapyrka articulated that while programs such as IES may be fragile and in jeopardy of closure as in the case of Cape Breton's Integrative Science program, "TEK is strong and the future will only see it get stronger". Indigenous environmental knowledge is never gone; it is a part of the people and of the earth-land-bases from time immemorial until forever. While it may be reduced to embers at times, it will spring up again so long as there are passionate individuals willing to do this work.

5.2 Closing Words of Gratitude

Once again I wish to offer my gratitude; niawen'kówa, chi miigwech, dank u wel, thank for participating in this learning journey with me. My gratitude goes out to all those who supported me in my knowledge exploration and in the physical manifestation of this paper. Niawen'kówa, chi miigwech, dank u wel to all the ancestors, future generations, human beings and non-human beings who continue to follow in their original instructions for the continuance of all Life.

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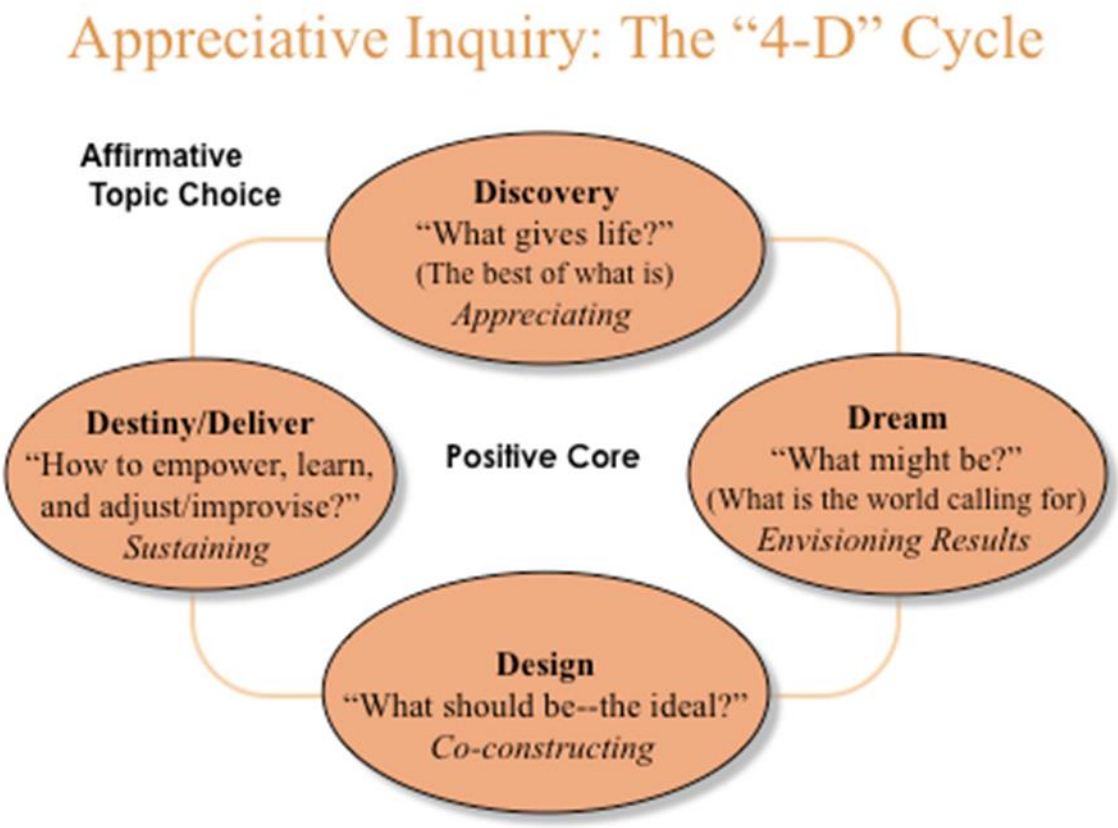
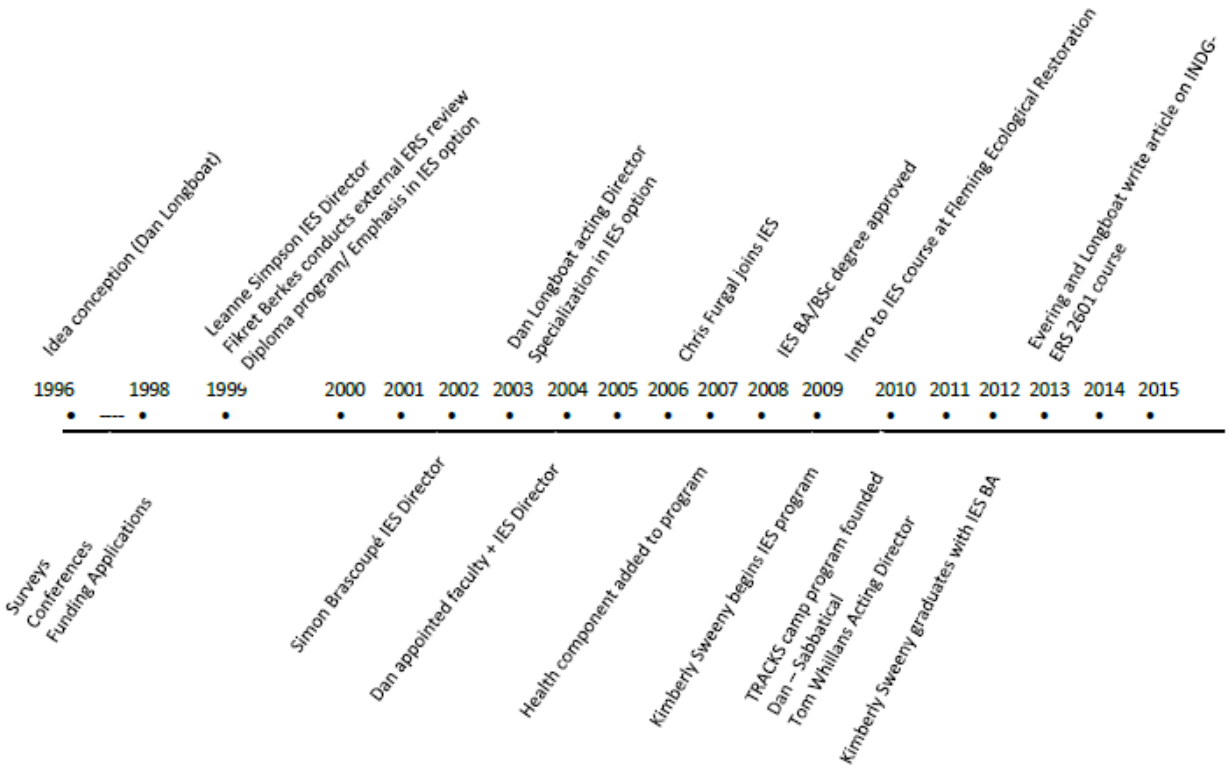
Appendix A

The 4-D Cycle of Appreciative Inquiry



Appendix B

A timeline of the history of the IES program



Appendix C

Trent University IES Feasibility Study

TRENT UNIVERSITY

Indigenous Environmental Education Degree Program

"Putting our minds together"

"Trent University aspires to be Canada's outstanding small university, known for its commitment to liberal undergraduate education in the humanities, social sciences, and natural sciences, and to the centrality of the individual student."

Background

Trent University has consistently ranked as the "one of the best small universities" in Canada, according to Maclean's Magazine, with an annual enrolment of about 5,000 students. The university seeks "to advance learning through the creative interaction of teaching and research of the highest quality".

Two of Trent's Departments have established themselves as centres of excellence in the Canadian academic community. Since its inception in 1975, the Environmental Resources Study Program has grown steadily, attracting the highest quality of teaching staff, and a growing number of students. It is a recognized leader in various fields, including watershed and ecosystem management, and fisheries; ERS has received several National Research Council grants for its outstanding research.

The Department of Native Studies was founded in 1969, making it the oldest such department in North America. It offers undergraduate and masters programs comprising studies in Aboriginal culture and languages, history, governance, community and economicdevelopment. Through interdisciplinary programs, it also has degree programs in Management and Economic Development, and Education (with Queen's University). An Aboriginal Education Committee, comprised of representatives from Aboriginal communities, advises the University on all matters pertaining to the program. Aboriginal students from all across Canada, the Arctic and the U.S. participate in the program. A significant number of its graduates have become influential leaders at the community and national level, in both the private and public sectors. At its 1996 Convocation, the University installed Mary Simons, an Inuit and Canada's Ambassador to the Arctic Circle Conference, as Chancellor of the University. Together, these two Departments attract annually about one third of all students at Trent.

The need

The social, cultural and economic cost of the current environmental issues continue to grow; for responsible people they elicit profound fears and frustration. The descriptions of impact and consequence and the discouraging trends are becoming common knowledge: the solutions are less evident. Of greater concern is the apparent lack of commitment at the policy and regulatory level, as many of our political and business leaders continue to separate environmental costs and consequences from the everyday decisions, activities and economies that cause them. Conversely, there is an economic opportunity for First Nations to take a leadership role, as a result of the recent downsizing in the private and public sectors in environmental action, and a continuing trend to privatization.

Both the *Brundtland Report* and *Agenda 21* from the United Nations Summit on the Economy recognized the contribution that Indigenous people can make, in terms of values, knowledge and technology. Trent University provides a very propitious learning opportunity to bring this Indigenous knowledge base together with a leading scientific cadre, and create a rare synergistic learning experience. It also has the potential to contribute significantly to improved relations between the First Nations in Canada and mainstream society, particularly as it pertains to the development of sustainable economies in First Nation territories.

In view of the potential benefits from this project for First Nation communities, the Chiefs of Ontario Office, representing the various First Nations of this province, have also endorsed the initiative and will help to facilitate the participation of leading First Nation knowledge keepers and environmental personnel in the development of the program and the curriculum.

The goal

The goal of this project is *to assess the feasibility of integrating Indigenous environmental thought and knowledge systems with the scientific teaching and research capability of Trent's Environmental Resource Studies Program*. The result will be a degree program encompassing selected studies from Indigenous environmental thought and naturalized knowledge, community economic development, natural resource management, environmental sciences and ecological sustainability.

A major benefit from the program will be the articulation and recognition of Indigenous environmental thought and knowledge; this will influence and contribute significantly to the existing concepts of science and philosophy. The resulting integration and growth in knowledge and practical skills will strengthen and inform environmental actions. At the same time, Trent is being entrusted to respect the integrity of Indigenous knowledge, while recognizing the culturally diverse contributions that derive from the various First Nation traditions. However, a common understanding among Aboriginal peoples is that learning, itself, is an experience affecting the whole person.

The feasibility study will be co-ordinated by a joint committee representing the two Departments. Each Department has its own project co-ordinator. The investigation will determine the specific learning goals to be achieved, and assess the current course offering against these.

The development of new courses to complete a full curriculum for a degree program will be undertaken. An Advisory Board of distinguished First Nation people with an acknowledged work experience in the field, and a Council of Elders, will help guide both the needs analysis and the development of the Indigenous components. Their contribution will continue when the program is implemented, following 18 - 24 months of developmental work.

Conclusion

This is the first University level program of its kind in North America, and it brings together the contributions from two leading centres of learning in the Canadian academic community, and the Aboriginal leadership in Ontario, along with the direct contribution of leading Indigenous knowledge keepers. It will create a new resource and opportunity for all communities in Canada, and an expanded base of knowledge to help address the urgent environmental issues that we all face in our common pursuit of truly sustainable economies, today and tomorrow.

Your Involvement

We need the help of organizations and individuals who have a particular interest in developing and stimulating young minds to lead us to new understandings, commitments, solutions and informed action.

For more information, please contact:

Dan Longboat
Project Co-ordinator
The Indigenous Environmental Education Program
Department of Native Studies
Trent University
Peterborough, ON
K9J 7B8

Tel: (705) 748-1466
Fax: (705) 748-1416

NS/ERS JOINT DEGREE PROJECT

PROPOSED ACTION PLAN

Project objective:

* To explore the feasibility of developing and offering a joint NS/ERS undergraduate degree that would meet the aspirations and needs of our students and our respective communities.

* To seek the participation of appropriate personnel from the forestry and resource departments at Sir Sandford Fleming College.

Proposed project strategy:

It is proposed that there be a Joint NS/ERS Joint Committee comprised of appropriate representatives from each department and Sir Sandford Fleming College. The NS representatives will be comprised of Dan Longboat, NS Project Leader, David Newhouse, Simon Brascoupe, Paul Bourgeois, Edna Manitowabi, Shirley Williams, and Willy Fournier.

This action plan will be submitted to the Joint Committee in April for its consideration, and modifications, and agreement.

1. The Joint Committee will explore and articulate what type of graduate it would like to see emerge from the program, with reference to the technical skills, scientific and indigenous knowledge, cultural values and philosophy, and potential applications.

   It is proposed that this graduate profile be developed with the assistance of a knowledgeable NS Advisory Group comprised of people like Henry Lickers (Seneca), Laurie Montour (Mohawk), Dean Jacobs (Chippewa), Yvonne Lavalley (Algonquin), and Luke Hunter (Cree). The Advisory Group will be consulted throughout the project.

2. The NS representatives will also consult with Aboriginal communities and organizations to assess the types of needs and the level of interest. As well, we will review the offerings at other institutions and universities in Ontario, and elsewhere in Canada, to identify potential duplications, and better determine the focus of the Trent program.

3. Once the Joint Committee has come to a consensus on a common profile of the program graduates and program focus, each department will determine what it can contribute in terms of curriculum, teaching staff, and facilities.

   As well, each department will be asked how it can address any identified shortcomings in the desired program offering.

4. If a satisfactory program can be established, the Joint Committee will make a recommendation to the respective Department Committees, covering program curriculum, teaching staff, an implementation plan, and any other major considerations including budget.

5. If approved, the recommendations will then follow the normal process for final approval of the University, namely the Aboriginal Education Council, the Academic Development Committee, and the Senate.

Proposed schedule:

April, 1996:	Establishment of the NS/ERS Joint Committee, and agreement on action plan.
May - September:	Development of graduate profiles, consultations, and development of program offering.
October:	Recommended program and implementation plan to department committees for approval, and then to other bodies for final approval.
September, 1997:	Program launch.

Throughout the project, updates will be provided to the respective Departments and the AEC. Any significant issues will be raised with the Joint Committee.

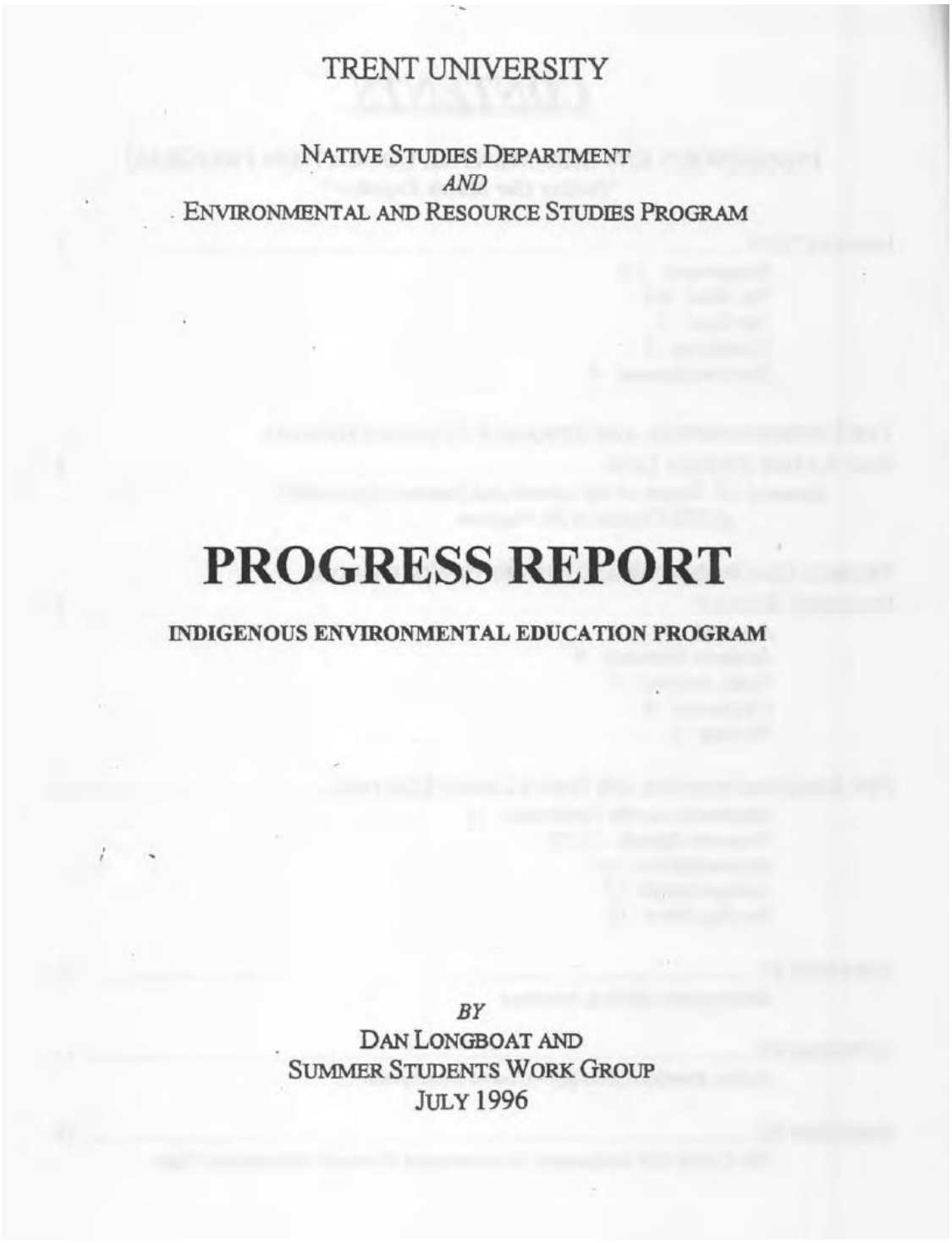
Budget:

There is a $10,000 allocation for this project which will be largely taken up in consultations with the Advisory Group, and meeting expenses. A specific budget has not been developed at this time.

Dan Longboat
NS Project Leader
March 19, 1996

Appendix D

Aboriginal Focus Group Workshop Report



TRENT UNIVERSITY

NATIVE STUDIES DEPARTMENT
AND
ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM

PROGRESS REPORT

INDIGENOUS ENVIRONMENTAL EDUCATION PROGRAM

BY
DAN LONGBOAT AND
SUMMER STUDENTS WORK GROUP
JULY 1996

CONTENTS

INDIGENOUS ENVIRONMENTAL EDUCATION PROGRAM

"Putting Our Minds Together"

TRENT UNIVERSITY

Indigenous Environmental Education Degree Program

"Putting our minds together"

Society today is becoming increasingly concerned about environmental issues. These issues include everything from waste management, wildlife harvesting, non-renewable resource consumption to impending ecological crises. Science, for the most part, has provided the foundation of environmental knowledge up until this time, and technology is attempting to solve these issues. Environmental education has made us aware of these issues and can play a major role in assisting us in developing solutions to these problems. Within this present framework, which gave rise to these problems, adequate solutions cannot be attained. In order to find these solutions, education will require the capacity to embrace alternative ways of knowing which will increase our environmental knowledge. Indigenous cultures from time immemorial have retained a connective knowledge system that has sustained this continent from the first steps of human beings to the present and can provide the solution to environmental knowledge gaps. Trent University recognizes the importance of this and is developing a program which will utilize these two knowledge systems to ensure our common future.

Background

Trent University has consistently ranked as "one of the best small universities" in Canada according to Maclean's Magazine, with an annual enrolment of about 5,000 students. The university seeks "to advance learning through the creative interaction of teaching and research of the highest quality".

> *"Trent University aspires to be Canada's outstanding small university, known for its commitment to liberal undergraduate education in the humanities, social sciences, and natural sciences, and to the centrality of the individual student."*
>
> *Trent University Mission Statement*

Two of Trent's Departments have established themselves as centres of excellence in the Canadian academic community.

Since its inception in 1975, the Environmental and Resources Studies Program has grown steadily from a few courses focused on environmental issues, to one of Trent's largest departments. ERS has created the oppurtunity for learning and research, which has attracted the highest quality of teaching staff and a growing number of students. Today, ERS has developed into one of the country's most successful environmental programs and is recognized as a leader in numerous fields including both watershed and ecosystem management and fisheries. Trent's research success has been rewarded by several National Research Council grants.

The Department of Native Studies was founded in 1969, making it the oldest such department in North America. It offers undergraduate and masters degree programs comprised of studies in Aboriginal culture and languages, history, governance and community and economic development. Through interdisciplinary programs, it also has degree programs in Management and Economic Development, and Education (with Queen's University). An Aboriginal Education Council comprised of representatives from Aboriginal communities advises and assists directing the University on matters pertaining to the program. Aboriginal students from all across Canada, the Arctic and the U.S. participate in the Native Studies program. A significant number of its graduates have gone on to become influential leaders at the community and national level, in both the private and public sectors. At its 1996 Convocation, the University installed Mary Simons, an Inuit and Canada's Ambassador to the Arctic Circle Conference, as Chancellor of the University. Together, these two Departments, ERS and Native Studies, attract about one third of all students at Trent annually.

The Need

Environmental exploitation, unsustainable development and pollution are issues faced worldwide. The social, cultural and economic cost of the current environmental issues continue to grow; for concerned people they elicit profound fears and frustration. The descriptions of the impact and consequence of environmental degradation and the discouraging trends are becoming common knowledge: the solutions are less evident. Of greater concern is the apparent lack of commitment at the policy and regulatory level. Many of our political and business leaders continue to separate environmental costs and consequences from the everyday decisions, activities and economies that cause them. There is an opportunity for First Nations to take a leadership role in areas of enviromental education. As part of the solution, knowledge gaps between Traditional Ecological Knowledge (T.E.K) and environmental science need to be identified, evaluated and filled.

Both *"Our Common Future" (the Brundtland Report) and Agenda 21* of the United Nations Summit on the Environment have recognized the importance to humanity of the knowledge and values of indigenous peoples...peoples who have lived closely with the land and who hear the wisdom that comes from that intimacy. Trent University provides a unique learning opportunity to bring together its leadership in the fields of environmental scientific methods and an environmental indigenous knowledge base. The concerns of these two streams allow for a mutally beneficial partnership. For Aboriginal students, co-operation between the two streams can lead to the creation of culturally compatible, sustainable economies for their communities. For non-aboriginal students, the availability of Indigenous knowledge as part of their approach to the environment can help them to achieve a better understanding of this land and effective ways to respect it. It also has the potential to

contribute significantly to improved relations between the First Nations in Canada and mainstream society, particularly as it pertains to the development of sustainable economies in First Nation territories.

In view of the potential benefits from this project for Aboriginal communities, First Nations leadership, representing the First Nations throughout Ontario, have endorsed this initiative and will help to facilitate the participation of leading Indigenous knowledge keepers and environmental personnel in the development of the program and the curriculum.

The Goal

The goal of this project is *to integrate Indigenous environmental thought and knowledge systems with the scientific approch and teaching capability of Trent's Environmental and Resource Studies Program*. The result will be a degree program encompassing selected studies from Indigenous environmental thought and knowledge, community and economic development, natural resource management, environmental sciences and ecological sustainability.

A major benefit from the program will be the recogniton and articulation of Indigenous environmental thought and knowledge. This will influence and contribute significantly to the existing concepts of science and philosophy. A common understanding among Aboriginal Peoples is that learning itself, is an experience affecting the whole person. The resulting integration and growth in knowledge and practical skills will strengthen and inform environmental actions.

The program development will be co-ordinated by a joint committee representing the two Departments, which direct the project co-ordinator. A study will determine the specific learning goals to be achieved, and assess the current courses offered against these. The development of new courses to complete a full curriculum for a degree program will be undertaken. An Advisory Council of distinguished First Nation people including Elders, youth, Political leadership, enviromental technicians and scientific professionals will help guide both the program development and the development of the Indigenous components and its integration with scientific methods.. Their contribution will continue when the program is implemented, following 18-24 months of developmental work. Program delivery will be completed by University staff and an Elders teaching group.

Conclusion

This will be the first university level program of its kind in North America. It brings together the contributions from two of Trent's centres of excellence and the Aboriginal leadership in Ontario, along with the direct contribution of leading Indigenous knowledge keepers. This program will create a new resource and opportunity for all communities in Canada, and an expanded base of knowledge to help address the urgent environmental issues that we all face.

Your Involvement

We need the support of organizations and individuals who have a particular interest in developing and stimulating young minds to lead us to new understandings, commitments, solutions and informed action. Showing your support by making a financial contribution would be an effective way of ensuring the arrival of this innovative program. Economic constraints should not hinder the oppportunities of our future generations.

For more information, please contact:

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THE ENVIRONMENTAL AND RESOURCE STUDIES PROGRAM AND NATIVE STUDIES DEPARTMENT LINK

SUMMARY

This report was prepared by Robert K.Loney on behalf of the Environmental and Resource Studies Program for Chris Metcalfe (ERS Program chair) and David Newhouse (Native Studies Dept. chair) in June of 1996. This report is a compilation of feedback including ERS instructor interviews and program curriculum content. The report also relates current and potential applicability of Environmental and Resource Studies courses into the Indigenous Environmental Education Program. IEEP has proposed a joint program to fulfil a need identified by First Nation communities and in the world of science.

A student coming out of this program will have a working knowledge of the society, conventions, history and jurisdiction of the current Indigenous situation, especially in Ontario and Canada. It would be expected that persons with this background could serve as a bridge between cultures, investigating and solving situations with an environmental component.

The exact structure of the program has not yet been determined, but one of the options suggested is a 2 year diploma and a 3 or 4 year BA/BSC degree which would include a Practicum and/or work study within a First Nation community.

The objectives of this document were:
1) To document the courses and content currently offered by ERS,
2) To interview the ERS instructors and obtain information on course content and recommendations on this proposed program, and
3) To report on the applicability of courses offered by ERS to the proposed joint program between Native Studies and ERS.

Included is an evaluation of the current content of ERS courses and the relevancy of the material to a such program. The current and potential amount of Traditional Environmental Knowledge concerning the environment that can be integrated as course content and/or new courses is also assessed.

The potential content structure of the program is discussed in terms of an efficient combination of Indigenous perspectives and the sciences. Options include specific environment-related courses and an incorporation of science and Indigenous philosophies focused on a specific topic, and/or field and work studies. Much consideration is being given to these options as their

creation will involve the introduction of new materials for covering such diverse issues. However, there will be considerable leeway for a student to focus on a particular aspect. Because environmental and aboriginal issues and perspectives are so diverse more freedom will be given to a student who wishes to focus on a specific aspect concerning First Nations.

Below are some relevant issues and perspectives that have been identified. The list will no doubt be modified based on the results of the "First Nation Needs Analysis" and by the Advisory Council's direction. Environmental issues could be organized into the following categories:

-Resources management - including the identification and sustainable management of agriculture, Indigenous plants, forest, wildlife, fish, water and soil for all intended users of the resource.

-Pollution abatement - including the treatment of sanitary waste, and reduction of agricultural. heavy metal and organic pollution.

-Ecosystem troubleshooting - including the identification of ecosystem problems, investigation and identification of possible causes, and establishment methods which eliminate or reduce the problem.

-Ecosystem recovery - including environment clean-up, revegetation and wildlife repopulation of stressed areas.

-Information sharing - including the preservation and communication of Traditional Environmental Knowledge (TEK), the communication of [science] environmental knowledge, and the combination of the two methods within and between Indigenous and non-Indigenous people.

Several possible perspectives within each of these categories can be established, including: history, culture/ anthropology, environmental analysis techniques, environmental management, law and policies.

The course content of the ERS Program and the Native Studies Department will have to identify and recognize the gaps and overlaps of knowledge between them, in order for these courses to be utilized fully. There are two alternatives suggested in identifying and filling these knowledge gaps. One alternative is done by including Indigenous topics and philosophies in one core course. This is done by increasing the amount of Native concepts and case studies in ERS courses. The Environmental and Resource Studies program divides its courses into two disciplines; the sciences and the arts.

For the ERS science courses, instructors and guests speakers will have to be inter-exchanged between the two faculties due to the diversity of knowledge required concerning Traditional Environmental Knowledge (TEK) and science. Present ERS instructors will most likely lack the background to cover both adequately as this is a newly recognized perspective in the world of science. A concern of the ERS Program is how the integration of Indigenous perspectives into existing ERS courses will possibly affect the successful achievement of the ERS's program goals. This concern questions the time available to properly cover all the required materials to suit both the native and the environmental science goals.

It has been stated that the ERS art courses have more flexibility to facilitate the combination of T.E.K. into their content to accommodate this joint program . However, the prior concern related to adequate time, faculty and resources to effectively cover all materials applies to both the science and art courses.

The second alternative is to implement new courses that teach the missing knowledge to fill these gaps. A definite advantage to this option is more exposure to the specific topics and Indigenous perspectives experienced by the students. At the same time, this will incur more expenses and needed human resources. Again, there is a concern that it may be difficult for a student to get a solid grounding in both the scientific practices and Native approaches in a reasonable time.

Integrating cultural perspectives in the teaching of science will increase the demand on human and financial resources to develop and maintain this new program. Additional time spent by ERS instructors, whether on teaching, research or administration will have to be monitored carefully. Compensation obtained in the form of time release when deemed appropriate will help prevent the degradation of work quality caused by overloading instructors.

Joining these two programs can be critical for ensuring sufficient knowledge bases in its graduating students. Science programs currently take 3 to 4 years on their own, so adding aboriginal philosophies and methods related to established topics are assumed to add to the required time for degree completion. If the current joint degree is lengthened by increasing the program content, the scientific knowledge base may suffer. As a result, graduating students will not be as capable in the field and this may discourage students from taking an extended program.

In conclusion, trust and mutual respect must be the leading way for the development of this joint program. Aboriginal and non-aboriginal societies co-exist and environmental problems often affect both societies simultaneously. All societies must work together to deal with these situations. The objective of this new joint program will be very educational and useful in exposing students to explore alternatives and innovations within the combination of Native and scientific approaches.

INDIGENOUS ENVIRONMENTAL EDUCATION PROGRAM

PROJECT CO-ORDINATOR AND STUDENTS WORK GROUP PROGRESS

Greetings,

This progress report has been completed in preparation for a conference that will be held in the month of August of this year. This report has been a joint effort between Dan Longboat - Project Co-ordinator and the environmental student work group hired to conduct research for the development of this new education program integrating traditional environmental knowledge and scientific methods. The four students that make up this group are Curtis Lazore from Ahkwesahsne Mohawk Territory, Sarah Williams from Curve Lake Mississauga First Nation, Mireille Chalifour from Laval in Quebec and Karen Bird from Batchewana Ojibwe First Nation.

The work to be done has been divided into four different categories; first *research*, related to the collection of material appropriate to the program for building a curriculum base, second *resource inventory* of existing courses and programs from other colleges and universities and any other related work-shops, conferences, organizations, movements and/or informal courses that potentially may develop into a joint program, thirdly the execution of a *needs analysis* for First Nations communities in terms of graduate skills to resolve First Nation environmental issues, and lastly the *focus group meeting* to be held in August of 1996 of which the main goal is to provide vital direction and guidance to those involved in the development of this new and exciting program.

RESEARCH

An extensive bibliography is gradually being accumulated through different areas of research; Universities, Libraries, First Nation Organizations and many other resources have been and continue to be utilized in the gathering of this information - see Appendix # 1 . There is an ongoing effort to seek out information relating to traditional environmental knowledge (T.E.K.) and the integration with scientific methods. An information table containing some of the materials collected thus far will be on display at the focus group meeting in August.

Another addition to our resource research efforts is a page on the internet that provides an opportunity for others to send us information via the "net". On this page we briefly explain our work and ask for any help that can be offered.

RESOURCE INVENTORY

We have been searching for any programs that relate Native Studies to Environmental Studies throughout the universities and colleges of Canada and the United States. Currently, there are only a few that concentrate on these issues in particular. An example of an existing course at the University of California in Davis entitled Native American Ecology has been provided - see Appendix # 2 . The University of Manitoba also offers a program that provides a series of guest speakers. As of yet no material has been received from them, but a page that promotes their program has been included within this report- see Appendix # 3 . We have made plans to meet with one of their guest lecturers and program committee members who we feel could provide insight into the development of our program.

NEEDS ANALYSIS

This brief yet concise questionnaire will be distributed throughout First Nation communities and organizations in and around our region. The information gathered from this questionnaire will be an invaluable resource in determining the environmental concerns and issues that face First Nations on a daily basis. It will help to ensure that the direction the program takes will provide solutions that come from First Nations themselves. Visits to local and neighbouring First Nation communities have also been planned in addition to the needs analysis.

CONFERENCE

A Focus Group Meeting is to provide the program's initial direction setting to help articulate First Nations goals and aspirations. Work is underway to ensure that success is achieved at the conference and that discussion periods surrounding important concerns and issues are used to their best effort. Summaries of this Focus Group Meeting will be available upon request at the mid to end of October after the conference is complete.

FUNDING

As we are all aware, the Ontario government has cutback many essential areas including education and Trent University is no exception to this. One of ways these cutbacks translate into reality is no monies available to develop new programs. This situation is not unfamiliar to First Nations and has presented itself as an obstacle here as well. As a result, we must create on-going plans to raise funds including requests from organizations, businesses and foundations to financially lend their support to the program.

The development of the Indigenous Environmental Program is intended to share our collective knowledge bases for the benefit of the natural world. We recognize that the information and knowledge that we continue to gather must be used for the benefit of all peoples. For this reason we acknowledge the importance of sharing all our materials with interested peoples as it is only in this way that we can continue to ensure a future for our coming generations.

Respectfully submitted by,

Dan Longboat
Sarah Williams
Curtis Lazore
Mireille Chalifour
Karen Bird

Appendix E

The ERS Program and Faculty Survey

INTRODUCTION

BACKGROUND

The Native Studies Department and Environmental and Resource Studies Program (ERS) of Trent University are proposing a joint program to fulfill a need identified in the indigenous peoples' and western societies.

PROGRAM PURPOSE

Although the program is still in the early planning stages, some goals of the program have been identified.

Before the arrival of Europeans, native Americans has long established a culture which included traditions and methods of dealing with many environmental issues. From then until recently, it had been general practice to impose the culture and methods of the European immigrants (commonly called "Western") on indigenous communities.

However there has recently been a resurgence of indigenous culture and communities, as human rights and resources are reclaimed by native bands and Innu for their own. As this occurs, indigenous communities are being put in the position of managing their own resources, while coexisting with western cultural practices. To further complicate the matter, many environmental problems are more severe now than in the past, while others are completely new to western and especially indigenous communities.

The economic and cultural ties within and between native bands and Innu, as well as between indigenous and western culture, need to be strengthened and solidified. Indigenous peoples will become more involved in managing their own resources, participating competitively and positively with western society, and people with the appropriate education and experience will be needed to aid this process. Additionally, indigenous peoples wish to strengthen their cultural heritage and traditions.

A student coming out of this program should have working knowledge of the society, conventions, history and current status of indigenous peoples, especially in Canada and Ontario, and also have a working knowledge of current western methods of dealing with environmental and cultural problems. It would be expected that persons with this background could serve as a bridge between cultures, in investigating and solving situations with an environmental component. Additionally, the approaches from each culture should be brought together in a positive manner to address the needs of both western and indigenous societies.

The purpose of this program is to produce individuals who have a good background in both western and indigenous methods, especially with respect to environmental issues, and a knowledge of the historical and current practices of dealing with environmental situations, especially as they affect indigenous communities. This proposed joint program may expand to include America-based issues (South and Central), but currently the intent is to focus on situations in Canada.

A graduate of this program would work to combine both indigenous and western practices towards managing environmental problems in indigenous and other communities in a positive way.

MANAGEMENT STRUCTURE

The basic structure of the program at the time of writing follows a two-tier level of management, with connections to outside resources.

At the heart of the program is a working committee, with faculty from ERS, Native Studies, and possibly Sir Sanford Fleming College. This working committee will have input from an Advisory Committee, consisting of about 12-14 members, some representing the indigenous community and some from the western community. In the indigenous community component, there will be representation from the Elders, native youth, and environmental native groups. In the western community component, management, policy and science fields will be represented.

CURRICULUM STRUCTURE

The structure of the program's curriculum is yet to be determined. Options include a 1 or 2 year diploma, a 3 or 4 year BA/BSC degree, and/or including a practicum or work study component. Any or all of these could be included as options to potential students. The courses composing this program would come from Native Studies existing and newly offered courses, ERS existing courses, and possibly courses offered off campus (in other Trent and university/college programs, or work study in the field).

OBJECTIVES

The objectives of this document are:

1) To document the courses and content currently offered by ERS,
2) to interview the ERS instructors and obtain information on course content and recommendations on this proposed program, and
3) to report on the applicability of courses offered by ERS to the proposed joint program between Native Studies

This includes an evaluation of the current content of ERS courses and the relevancy of the material to such a program. While indigenous issue content in ERS courses is not necessarily a requirement of inclusion of the program, the current and potential amount of indigenous issue content is also assessed.

The end of this report includes extensive appendicies documenting the research done to prepare this report.

METHODOLOGY

To assess the current ERS course content and opinions of the instructors involved in teaching ERS courses, it was necessary to interview each of the instructors in turn. A record of contacts and notes made as a result of communications is listed in Appendix I. Note that not all ERS course instructors were contacted.

INTERVIEW PROCESS

Interviews varied somewhat in their format, but basically a background was given about the proposed program, including information contained in the introduction to this document, and what my purpose was, then I asked some questions, the basic format of which was:

- Do you think incorporating indigenous environmental issues into ERS program courses is a good idea? Why or why not?
- What is currently being incorporated into existing course material?
- Are you willing to introduce/expand the indigenous environmental issues content of the courses you instruct?

If yes,

- Do you have any suggestions on how to do this and what content to introduce?

PROGRAM CURRICULUM CONTENT

POTENTIAL CONTENT STRUCTURE

There are several ways of combining western and indigenous perspectives together for the student to explore, including:

- offer a range of courses focusing on specific environment-related subjects, which, when combined into a program, offer a solid foundation of knowledge for the student in the topic(s) covered in both cultures. This implies that the course combinations will have to be very closely monitored, and new courses may have to be offered to fill in missing topics. There may be some minor changes to existing courses required.
- incorporate both western and indigenous perspective together into courses which focus on a topic. This implies significant changes to several existing courses, as well as offering new courses to fill knowledge gaps.

- offer field or work study courses, which give students on-site experience with the issues and people involved. This could be imposed on either of the above basic methods, and would give students valuable practical experience. Costs could be high for these courses.

It is likely that a combination of these methods will help in forming a new program. All methods above will involve the introduction of new material, either within existing courses or in new courses, to fill knowledge gaps present in current offerings.

Whatever combination of methods is used, there will be considerable leeway for a prospective student to focus on a particular aspect because environmental and aboriginal issues and perspectives on these issues are so diverse.

IDENTIFICATION OF RELEVANT ISSUES AND PERSPECTIVES

Initially, it would be helpful to identify the different subject areas required in the proposed program which would be required for the program to achieve its goal.

The significant environmental issues that are pertinent in today's indigenous communities, and indeed in all world cultures, could be organized into the following categories:

- resource management, including the identification and sustainable management of agriculture, indigenous plants, forests, wildlife, fish, water and soil for all intended users of the resource
- pollution abatement, including the treatment of sanitary waste, and reduction of agricultural, heavy metal and organic pollution.
- ecosystem troubleshooting, including the identification of ecosystem problems, investigation and identification of possible causes, and establishing methods which eliminate or reduce the problem
- ecosystem recovery, including environment clean-up, revegetation and wildlife re-population of stressed areas
- information sharing, including the preservation and communication of traditional indigenous environmental knowledge, the communication of western environmental knowledge, and the combining of the two methods within and between indigenous and non-indigenous peoples.

For each of these issue categories, both western and indigenous perspectives are applicable, but often appear to have little in common, because they originate from different cultural foundations. For instance, all of the above topics have 'science' and 'arts' elements when viewed in both the traditional indigenous and western viewpoint, but the terms science and arts don't have the same meaning in indigenous and western cultures. The first definition of science in the dictionary is "knowledge", but subsequent definitions have a definite western orientation (not surprising in a book produced in western culture for western culture), such as "pursuit of or principles regulating the pursuit of systematic and formulated knowledge". What indigenous culture may consider science may not be termed science in the western culture, but may be called mythology or legend. Whatever labels are applied, indigenous and western perspectives have both validity in practice and a common goal, that of improving the environmental quality for all.

Once issues categories are identified, several possible perspectives for each of these categories can be established, including:

- history, including past events of indigenous and non-indigenous cultures and their interactions
- culture/anthropology, in both indigenous and non-indigenous cultures, including effects of western practices (environmental and cultural) on the environment and social status of indigenous communities
- environmental analysis techniques, including both indigenous traditional knowledge and western techniques of ecosystem analysis and monitoring
- environmental management, including both western and traditional indigenous knowledge and practices
- law, including land claim settlements, legal implications of resource sharing
- policy, including the development of policies to help regulate and protect both indigenous culture and their environment

These issue and perspective listings are rough, and can be modified as needed based on the advisory council's and others' recommendations.

Trent courses (particularly ERS courses) will now be examined to see how they address these issues and perspectives.

TRENT UNIVERSITY COURSE APPLICABILITY TO RELEVANT ISSUES AND PERSPECTIVES

Once topics and perspectives are identified, a curriculum can be built. The first step is to identify what currently offered courses cover what topics and perspectives. Then knowledge gaps can be identified, and either new courses can be offered or new material can be inserted into existing courses, to fill those gaps.

The majority of ERS faculty were interviewed about the courses in which they have been involved, and the contact records and notes from the interviews are available in Appendix I.

Using the topics and perspectives from the previous section, tables has been constructed below which attempt to place each of the currently offered Trent courses (based on current course content, as described in the Trent Calendar with instructor input where available) into a relevant issue(s) and perspective(s). ERS courses, the primary focus of this document, are covered first, followed by Native Studies courses and then other Trent courses.

Courses may be listed more than once if the course content applies to multiple issues and/or perspectives. Courses not be placed in the table (noted at the end of the table) are not placed because insufficient information is available on the course content or the course topic does not fit into any of the above categories.

ERS Courses

Most of the core ERS courses have been reviewed with the instructor who teaches the course. Exceptions include those that are taught by stipendiary instructors and some that are cross-listed with other departments but maintained by the other department.

Courses are listed by course number in the appropriate places in the table below where there is at least some coverage of the issue/perspective, based in the course description and the instructor's comments. Any course who's placement in the table is based solely on the calendar description is listed in italics. Note that placement in the table is not dependent in any way on native issue content.

For more detail on all ERS courses, including course titles and descriptions, other university related courses, and comments about the courses by instructors, see Appendix II.

PERSPECTIVE	ISSUE CATEGORY				
	Resources	Pollution Abatement	Ecosystem Troubleshoot	Ecosystem Recovery	Information Sharing
Historical	ER/CA 200 ER 250 ER/CA 310 *ER/CA/GO 333A* ER 465A ES 100	ES 100 ES 355	ES 355	ES 100 ES 355	ER/CA 200
Cultural	ER/CA 200 ER 250 ER 311B, ER 330 ER/CD 360 ER/CA 470 ES 100, ES 320 ES 316B	ES 100 ES 412A	ES 100 ES 430A	ES 100	ER/CA 200
Analysis Technique	*ER 251A* ER 311B ER 3951 ER/CA 470 *ER 475* *ES/BI 202* *ES/BI/GO 208A* *ES/GO 209B* ES 221A *ES 230* *ES 315B* ES 320 ES 335A ES 351A ES 365A *ES/GO 404A* ES/BI 423A ES/BI 424B ES 435B ES/GO 445A	ER 210B *ER 308* *ES/BI 202* *ES/BI/GO 208A* *ES/GO 209B* ES 221A *ES 230, ES 240* ES 313A, ES 314B *ES 315B* ES/CE 341B *ES 345A* ES 351A ES 355, ES 370 *ES/BI/GO 406A* *ES/BI/GO 407B* ES 412A ES 430A ES 435B ES/GO 445A ES 451	ER 210B *ES/BI 202* *ES/BI/GO 208A* *ES/GO 209B* ES 221A *ES 240* ES 313A ES 314B ES/CE 341B *ES 345A* ES 355 ES 370 *ES/GO 404A* *ES/BI/GO 406A* *ES/BI/GO 407B* ES 412A ES 430A ES 435B ES 451	ER 210B *ES/BI 202* *ES/BI/GO 208A* *ES/GO 209B* ES 221A *ES 240* ES 313A ES 314B ES/CE 341B *ES 345A* ES 355 ES 370 *ES/BI/GO 406A* *ES/BI/GO 407B* ES 430A ES 451 ES 451B	ER 210B *ER 475* *ES/BI 403A*
Management	ER/CA 200 ER 210B, ER 250 ER 311B *ER/CA/GO 333A* ER/CD 360 ER 3951 ER/PO 460 ES 316B, ES 320 ES 335A, ES 351A ES 365A ES/BI 423A ES/BI 424B *ES/BI 439B*	*ER 308* ES 100 *ES 345A* ES 351A ES 435B	ES 100 ES 435B	ES 100 ES 452B	ER/CA 200 ES 316B
Legal	ER/CA 310 ER 330, ER 399A ER 499B, *ER 480A*				
Political	ER/CA 200 ER 210B ER/CA 310 ER 311B, ER 330 ER/EC 381A ER/EC 382B ER/PO 460 ER 465A				ER/CA 200

Notes *ER 330 is being re-written, possibly resulting in some content changes*
ER/EC 382A is a new course, and so may have some additional flexibility in course content.

Native Studies Courses

Native Studies course information was obtained from the Trent University Calendar 1996-1997. Course placement in the table is based only on the course description offered in the Calendar.

For more detail on Native Studies courses, including course titles and description, see Appendix III.

	ISSUE CATEGORY				
PERSPECTIVE	Resources	Pollution Abatement	Ecosystem Troubleshoot	Ecosystem Recovery	Information Sharing
Historical	NS 100 NS 211 NS 220 NS/AN/CA 253 NS/AN/CA 255 NS/CA/HI 270 NS 320				NS 100 NS 200 NS 211 NS 220 NS/AN/CA 255 NS/CA/HI 425 NS 481
Cultural	NS 100 NS 150A NS 151B NS/CA 285 NS 290 NS 305 NS 320				NS 100 NS 150A NS 151B NS 210 NS 211 NS 220 NS 225 NS/AN/CA 253 NS 260 NS/AD 272 NS 310 NS 320 NS 330 NS 350 NS/CA/EN 360 NS 395 NS 430 NS 481 NS/CD 482 NS 4953
Analysis Technique	NS 381A/B NS 383A/B NS/HI 400				NS 225 NS 280 NS/EN/CA 360 NS/CA/EN 380 NS 381A/B NS 383A/B NS/HI 400 NS 430 NS/CD 482 NS 4951 NS 4952 NS 4953
Management	NS 150A NS/AD 190 NS 305				NS/AD 190
Legal	NS 340				
Political	NS 151B NS 200 NS/AN/CA 255 NS/CA/HI 270 NS/CA 285 NS 290 NS 350				NS 200 NS/AN/CA 255 NS 4952

Note: Native language courses have been placed in the techniques perspective, because indigenous peoples use language as a method of conveying their methods.

Other Trent Courses

Other Trent course information was obtained from the Trent University Calendar 1996-1997. Course placement in the table is based only on the course description offered in the Calendar.

For more detail on these Trent courses, including course subjects and descriptions, see Appendix IV.

	ISSUE CATEGORY				
PERSPECTIVE	Resources	Pollution Abatement	Ecosystem Troubleshoot	Ecosystem Recovery	Information Sharing
Historical	AN 311 EC 260A GO/CA 363B				AN 496A/B HI/CA 407
Cultural	CD 100				AD 420 CA/HI 300 CD 100 CD 400 CD/AN 475A PO/CD 450
Analysis Technique	BI 101 BI 306A BI 314B BI 321B BI 350A CS 100 series GO 101 GO 356A	BI 101 CE 100 CE 210A CD 230B CD 240A CS 100 series GO 101 GO 356A	BI 101 BI 306A BI 314B BI 321B BI 328A CE 100 CE 210A CD 230B CD 240A CS 100 series GO 101 GO 356A	BI 101 BI 306A BI 314B BI 321B CE 100 CE 210A CD 230B CD 240A CS 100 series GO 101 GO 356A	AD 410 CU 225 CU 226 SC 350
Management	CD 100 EC 101/2 A/B EC/CD 331A EC/CD 333B	EC 101/2 A/B	EC 101/2 A/B	EC 101/2 A/B	AD 410 CD 400
Legal					
Political					

FILLING KNOWLEDGE GAPS: OPTIONS

Once courses are slotted into the various topics and perspectives, knowledge gaps and overlaps will be readily identifiable.

Overlaps will have to be evaluated for their usefulness. For instance, it may be worth repeating in a different course the same principle to reinforce its structure and applicability. Other gaps may be considered redundant, and curriculum and course content will have to be modified accordingly.

Knowledge gaps will have be evaluated as well. Some gaps may be considered acceptable, if the topic/perspective is not high on the program's goal priority. If a gap is identified as an area that needs to be filled, it may not be possible to find a knowledgeable and willing instructor to teach the subject.

Once knowledge gaps to be filled are identified, there are two principle ways these gaps can be filled.

Indigenous Peoples Issue Content Incorporation In Current ERS Courses

One alternative of filling knowledge gaps in the program is including these new topics and perspectives into one course. This has already been accomplished in some ERS courses to varying degrees. As most ERS courses are already focused on western society's methods of environmental analysis and management, this section will explore ways of increasing the native issue content in ERS courses.

Methods of incorporating indigenous issues into ERS courses include

- data sets: the least in-depth option, where data from environmental situations involving indigenous peoples are used to illustrate/practice a principle or exercise. The issue from which the data came is not reviewed except in a cursory way. Data sets are applied mainly to numerical applications, such as statistics.

- examples: similar to data sets, but providing illustrations of concepts which are not numerically based (such as the example of the application of a law). As in data sets, the situation is reviewed only briefly.
- case studies: A more in-depth examination of an environmental situation involving indigenous communities. This is applicable to both ERS science and arts courses, and is used to illustrate historical and current patterns and developments.
- concepts: This is the most in-depth option, where environmental issues are studied in both indigenous and western society, as well as in situations where the two interact.

ERS Science Courses

In ERS science courses, current focus is primarily on the current scientific understanding of processes as they occur in nature. For example, ES 370, entitled Environmental Toxicology, teaches the theory behind, and various methods of determining, the toxicological impacts of substances using western scientific techniques. Currently, incorporation of indigenous issues in ES 370 is limited to the use of case studies which involve indigenous communities threatened by toxic substances. This is typical of the maximum extent of indigenous issue content in ERS science courses, and several courses have no indigenous perspective content.

Although students must meet some basic requirements to obtain an ERS degree, they have many options to choose from as they develop their own program. There are four basic suggested streams in the science domain of the ERS program:

- ecological systems
- natural resources
- physical-chemical systems
- ecotoxicology

Depending on the area of specialty the student desires, any of these may be taken while still meeting the program objective. Many science topics are necessary for a sufficient background in the methods and principles involved in scientific environmental investigation and management.

Traditional environmental knowledge, or TEK, is the indigenous counterpart to the western science. TEK is covered only very briefly and occasionally in a few ERS science courses. Including indigenous perspectives on the applicable sciences within existing ERS courses would have the advantage of integrating each of these perspectives within the content of the course, exposing students with different backgrounds to the different methods. This is done in ES 100, where both 'arts' and 'science' students become exposed to each of science and arts knowledge.

The present core ERS instructors will likely lack the background needed to teach these indigenous methods, so courses would have to be taught by multiple instructors or guest speakers introduced (one faculty called this 'cross-pollination', applied to Native Studies faculty guest lecturing in ERS courses and vice-versa). The resource cost of this option would be minimal compared to offering whole new courses. Offering both perspectives within a course could lend itself to discussions and a better understanding about the similarities and differences between the two approaches.

One difficulty of integrating indigenous perspectives into existing ERS science courses is its possible effect on the successful achievement of the ERS program's goals. Course content is currently tailored to provide a balanced science background in whatever stream the student wishes to specialize. If course content is adjusted to more closely suit this new program's purpose, it may take away from the science background currently provided. For instance, if we take a toxicology course who's purpose is to give students a good base knowledge of scientific principles and applications in toxicological research, and introduce indigenous methods, there may not be adequate time to properly cover all the required material to suit either purpose. This has, in fact, been indicated with ERS's forestry course, ES 320. In these cases, the conflicting goals of each program must be prioritized, course content adjusted accordingly, and alternatives found to satisfy the lower priority goals if they are not met.

ERS Arts Courses

Most of the same circumstances apply to ERS arts courses, but there is a little more flexibility in some courses because of the nature of the material. Certainly there is already considerably more indigenous peoples issue content in ERS arts courses than in science courses, often taught side-by-side with western

issues and approaches. Generally there is excellent opportunity here to introduce further indigenous perspectives while keeping true to the course's goal.

Students who take an ERS arts degree have many options open to them as they choose their courses, more than in the sciences. ERS has three suggested arts streams:

- Thought and Communication
- Policy and Planning
- Community and Development

Native Studies courses are suggested as options for both of the latter streams, and a first year Native Studies course is an ERS support course, so there are already some ties between the two programs in arts studies.

There are courses offered by Native Studies and ERS whose subject material overlap. Most of these courses speak to environmental management, policy, law, and effects on culture. Several courses would be appropriate for the proposed program from ERS's offerings as they currently are taught, while several others would be suitable with minor modifications of course content. As with the sciences, some courses have no indigenous perspective content, and yet may still be useful to the student in this program, because they speak to western practices and theories on various topics.

The characteristics of science courses mentioned earlier apply in varying degrees to arts courses. The opportunity for "cross pollination" exists, where applicable. The same difficulty of maintaining goal achievement will have to be monitored for each course considered for inclusion into the joint program.

Offering New Courses

A second alternative is to implement new courses that teach the missing knowledge gaps. Thus instead of offering several perspectives or topics within one course, offer separate courses teaching these perspectives or topics, and have the student take each of the courses.

This alternative has the advantage of allowing for more student exposure to the topic and perspective at hand.

However, integration is relatively poor in this scenario, and a course(s) may need to be offered discussing the similarities and differences between these topics/perspectives, and how they are successfully integrated. These courses would probably be offered near the end of the program, after the student has the basic grounding in the desired disciplines.

New courses will almost certainly result in more expense and needed resources. Also, it may be more difficult for a student to get a solid grounding in both scientific practices and native approaches in a reasonable time.

COMMENTS ON A NATIVE STUDIES–ERS PROGRAM

In the interview process several concerns, suggestions, and recommendations were made on various aspects of the program, and on how ERS may be affected. This section will describe these, and, where applicable, make suggestions.

COMMITMENT TO THE JOINT PROGRAM BY ERS AND NATIVE STUDIES

Some concern has been expressed about the overall process. Both ERS and Native Studies are involved in making this program work, and at the time of writing this report, the commitment of ERS to the project is not yet established, and will be discussed in the early fall. To date, Native Studies has been a more significant instigator in the development of this proposed program. If ERS waits until after the beginning of the school year in 1996 and then decides that their program cannot be involved (for whatever reason), resources will have been wasted on the part of ERS and Native Studies (who could pursue alternative avenues of achieving the goal earlier).

It is recommended that ERS program establish its position on this project sooner rather than later, perhaps by the end of July/early August. Contributing to that decision will be several of the following concerns.

RESOURCE MANAGEMENT FOR THE JOINT PROGRAM

Several instructors who were interviewed expressed concern about the amount of resources ERS would be required to supply in developing and maintaining this new program.

Resources, in the form of money, equipment, supplies, and time, are scarce in the ERS program at present. As already mentioned earlier in this report, ERS cannot afford to offer new courses which would cater to this program, and in the current financial climate it is unlikely that Trent will be able to contribute significant funds, so funds will have to be obtained outside the traditional university setting. Currently corporate sponsorship and government funding is being sought. If this joint program between Native Studies and ERS is sufficiently funded, money could potentially be available to purchase needed supplies and equipment. Obtaining additional time for instruction and management is more difficult.

Some faculty have mentioned the possibility of having funding pay for time release from teaching ERS courses, so they can contribute to other courses in, and administration of, the program. If this occurs, it is recommended time release occur only on a limited basis, to prevent degrading the overall integrity of the ERS program. ERS currently has 54 courses in its program, many taught by a core faculty numbering only about 15 (many of whom are only partial appointments to ERS). Some of these courses are taught and managed by other Trent departments, but at least 10 courses are already taught by instructors on a stipendary basis. If ERS core faculty are released from teaching ERS courses in significant quantity, ramifications include the loss of continuity within a course from one year to the next, as instructors could potentially change annually, loss of continuity between courses, and reduced exposure of students to ERS faculty who are doing research.

There are additional time commitments to many projects that are often not compensated with methods such as paid time release. Many faculty are heavily loaded with work in the form of teaching, administration and research, as well as "extracurricular" projects, which are taken, for the most part, voluntarily. As a general rule of thumb, having more work to do frequently results in a decreased quality of work. As one interviewee mentioned, ERS instructors have a tough time saying "no" to good projects, even if it results in more workload than desired. The danger here, then, would be in incurring additional uncompensated duties from this joint program add to the workload, and having the overall work degrade in quality. This is particularly serious if it interferes with the requirements of being an ERS faculty member, and results in a lower quality and degraded reputation.

This additional time, whether spent on teaching, research, or administration, will have to be monitored carefully, and compensation obtained in the form of time release when deemed appropriate.

ENSURING SUFFICIENT KNOWLEDGE BACKGROUND IN GRADUATING STUDENTS

This joining of two programs requires enrolled students to become well grounded in two cultures, essentially doubling the amount of information to be learned over a degree in either program alone, and this has implications for the length of a student's stay in the program.

Currently, students can obtain an ERS degree as a single major or joint major with many Trent departments and programs, including Native Studies. As ERS's suggested streams indicate, students can, for example, combine ERS and Chemistry courses to obtain a joint degree, focused on toxicology. This program currently takes 3 or four years. Adding to this curriculum the Aboriginal theory and methods related to the topic will add to the time required for degree completion. If the time taken on the current joint degree is reduced, the knowledge base will suffer, and graduating students will not be as capable in the field. This problem is not easily resolved, and must be discussed at length.

Additionally, there have been comments that generally the education background of Aboriginal students are not in-depth in the basic skills taught in the public school system, and this could make it difficult for Aboriginal students to enter the program and get a solid background in the sciences. Basic knowledge in areas such as chemistry, mathematics, and biology, are all anticipated in students entering university for a science degree, and these skills may be less developed in native students.

One possibility is to create an entrance upgrade program, somewhat like the program currently instituted by Native Studies, where students are brought up to speed on communication skills. This could be expanded to include several basic sciences. The drawback is, of course, that the time required to complete the full program will increase for students who take an upgrade program, and this may deter students if they know it will take a long time.

NATIVE STUDIES ISSUE SEPARATION OR INTEGRATION?

At least one of the faculty interviewed expressed the opinion that Native studies should not be separated out as a topic or issue, because it only serves to distance that culture from others. Instead, they should be taught side-by-side with other cultures, when focusing on topics at hand (e.g. resource management, ecosystem recovery, etc.)

Others believe they should be more separate, because of the differences inherent in the cultures and because a separate program will cater better to people from that culture.

This debate has implications for how native issue material is integrated into ERS courses, and how science and native culture are combined.

ACHIEVING TRUST AND MUTUAL RESPECT IN THE PROGRAM

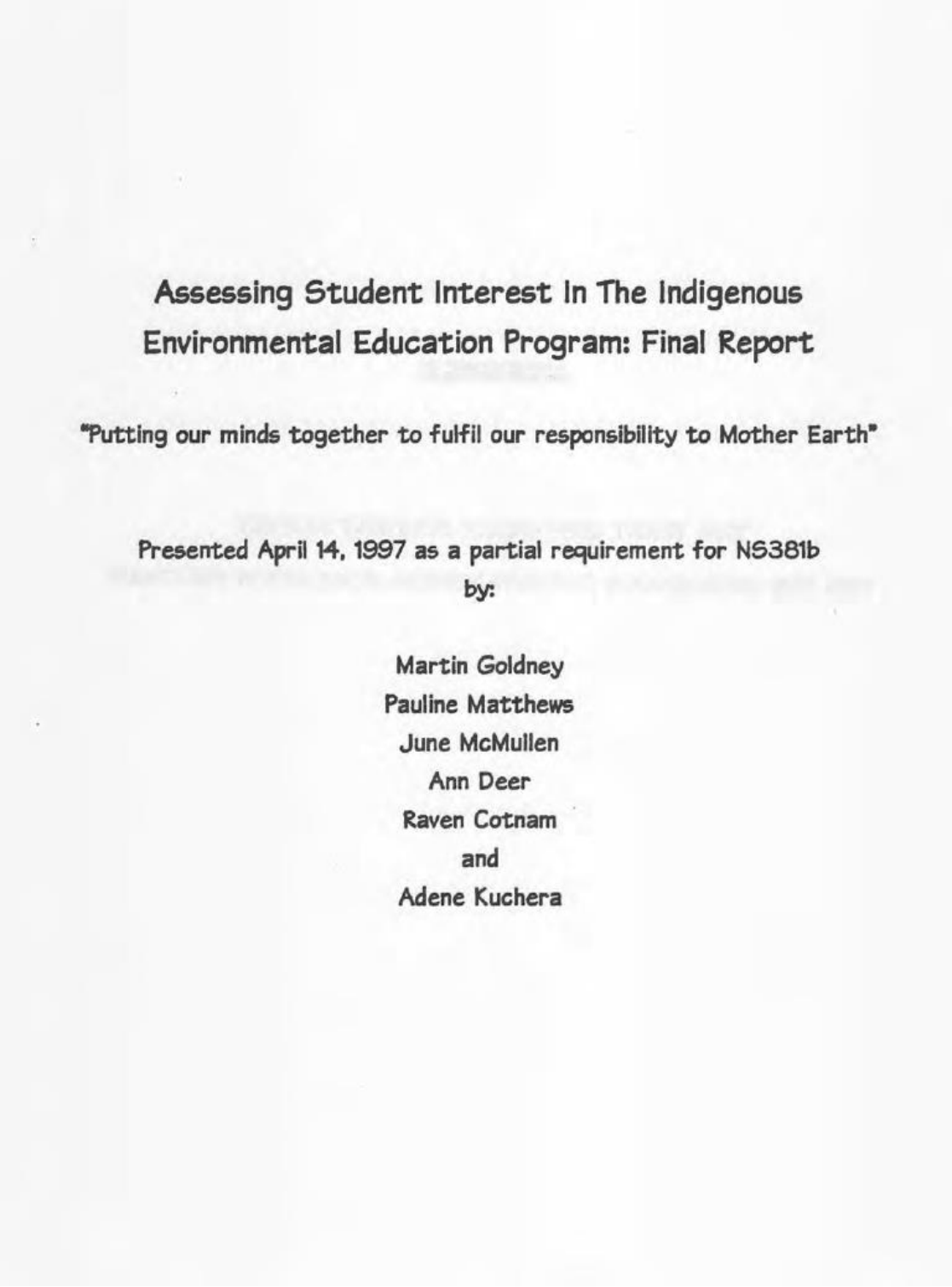
Because both indigenous and western societies coexist, and because environmental problems often affect both societies simultaneously ('nature knows no boundaries'), all societies must work together to deal with these situations. This could be difficult because the often negative historical interaction between these two cultures has caused current relations to be unstable, with mistrust frequently present on both sides.

A student coming out of this program should have a balanced view of both cultures' approaches to solving environmental problems. It would not be conducive to the program goal to produce a student who believes there is merit in only one or the other approach, because that bias will clearly show when it comes time for the student to actually be on-site dealing with a problem, and the proram's goal will not be achieved. This has implications for course content and conduct.

Integrating both perspectives into single courses should be done in the program, because it will be very educational and useful to expose students to the difficulties that will appear when the perspectives are put together. Such courses could focus on examining the similarities, as well as the controversies and methods of resolving them. However, these very controversies could interfere with the teaching of material if it was present in courses providing the grounding in the each of the perspectives and approaches.

Appendix F

The Trent University Student Survey for Indigenous Studies



Assessing Student Interest In The Indigenous Environmental Education Program: Final Report

"Putting our minds together to fulfil our responsibility to Mother Earth"

Presented April 14, 1997 as a partial requirement for NS381b
by:

Martin Goldney
Pauline Matthews
June McMullen
Ann Deer
Raven Cotnam
and
Adene Kuchera

While much has been undertaken in recent decades to counter the environmental destruction of the Earth, social, cultural and economic implications of both localized and global environmental issues continue to grow. Of great concern is the lack of commitment at a policy and regulatory level; for solutions to be implemented, environmental costs and consequences of everyday decisions must be recognized and acted upon.

Within the area of environmental action, there is an opportunity for First Nations peoples and communities to take a leadership role. As recognized by both the "Bruntland Report" and "Agenda 21" from the 199 United Nations Summit on the Environment, traditional Indigenous knowledge has much to offer in terms of values, technology and general world view.

BACKGROUND

Distinguished by the respectable academic departments of Native Studies and Environmental and Resource Studies, Trent University provides a very propitious opportunity to bring together Indigenous knowledge with a leading scientific cadre. At the same time, it has the potential to contribute significantly to improved relations between Aboriginal and mainstream societies in Canada and in particular to the development of sustainable economies and of environmental knowledge.

The Indigenous Environmental Education Program at Trent (IEEP) is being initiated to develop a relationship between Indigenous environmental thought and knowledge systems and the scientific teaching and research capability of the University's Environmental and Resource Studies Program (ERS). It is to eventually culminate in a degree program that encompasses selected studies from Indigenous environmental knowledge, community economic development, natural resource management, environmental sciences and ecological sustainability. When in place, this program will be the first of its kind in North America, developed at the university level.

The IEEP has already passed through various stages of development, with the expectation that it will be implemented in the fall of 1998. The following report describes and assesses student interest in the project, as obtained from information gathered from a survey conducted among Native Studies and Environmental Studies classes of all years. The research was conducted in answer to concerns raised at the Indigenous Environment Education Degree Program Proposal Workshop in the fall of 1996, which was attended by First Nations Representatives, Native Studies and ERS faculty, and Trent students. One of the issues advanced at the meeting was the need for student input into the development of the proposed program. The data collected in the surveys and this subsequent report are to be used in the development of the IEEP, both in the structure of the program and with its curriculum content.

AGENCY

The IEEP project coordinator is Dan Oronhiakehwen Longboat. In response to the concern over the need for student input into the program that was brought forth at the fall 1996 workshop, Dan Longboat approached the *Native Studies Research Methodologies 381B* class to solicit students who would be interested in carrying out research for the IEEP program. Raven Cotnam, Ann Deer, Martin Goldney, Adene Kuchera, Pauline Matthews and June McMullen subsequently formed a group to undertake the research.

The research undertaken by the NS 381B group has been under the direction and supervision of Dan Longboat throughout all stages of the process.

RESEARCH QUESTION

The general purpose of our work was first of all to ascertain the level of interest in the proposed IEEP of all years of Native Studies and ERS students. Moreover, we were to determine more specifically what students hoped to see in the structure and the content of such a program, and how they might envision accreditation of the program. Finally, we hoped to address any issues or concerns about the IEEP that the student community might have.

COMMUNITY-BASED RESEARCH

Community-based research, similarly defined as participatory action research or research from the margins, emphasizes qualitative research, as opposed to the dependence of more conventional and scientifically-based research on quantitative information. It is a process often undertaken as a way of empowering communities and individuals, and of allowing them to do research that may help to improve the situation of the people in the community. It is a continuous process which usually begins with a concern that is rooted in experience.

One of the procedures involved in a community-based research project for the participants is to undergo a process of self reflection, an analysis of their own conceptual baggage. This should include the assessment of the various biases and assumptions of the researchers, both in terms of what the researchers bring into the project as well as understanding how their biases may impact on the project throughout all of its stages.

CONCEPTUAL BAGGAGE

A bias common among all six student researchers on this project was an initial interest in the idea of an IEEP. Most of us also expected that the student population we would be surveying would also express an interest in the concept. However, Raven initially thought that non-Aboriginal students would not appreciate or understand Aboriginal teachings. From the beginning, the group

as a whole also believed that the introduction of an IEEP at Trent would be beneficial to the students and faculty at the university, and to Aboriginal communities. Pauline states: I believe that myself and many other non-Native (and Native) people will benefit from learning about the environment outside of the Western industrial approach.

Another common bias was that the researchers were all coming to some extent from the perspective of upper year Native Studies students, although some of us were affiliated with other departments as well. Moreover, the research project was being undertaken to fulfill a course requirement.

There were biases that came out during the analysis of information gathered in the surveys. This came out in informal assumptions or predictions of what students might answer in response to particular questions. More specific assumptions and biases that may have influenced the design of the survey and conceptual baggage revealed during the analysis of the data will be discussed shortly.

METHODOLOGY

It was unanimously decided by the research group in consultation with IEEP project coordinator Dan Longboat that the most effective and realistic method of gathering information from a large sampling of students was to conduct a survey. This decision was largely influenced by time constraints on the project; with only two months to devote to the research, this seemed the quickest way to collect a substantial amount of information. The "community" or target audience of the research was focussed on the Native Studies and ERS departments where we conducted the survey with a random sampling of students in a number of different courses that covered all four years of study in each discipline (as well as some graduate students).

After the lengthy process of designing the survey, we met as a group to determine how we would proceed to distribute the surveys. Because the scope of this research project did not permit surveys to reach every student in both departments, we selected representative tutorials and lectures in order to get the greatest possible diversity of students.

For the process of delivering the survey, we would generally arrive at the chosen tutorial or lecture at the beginning of class. After consulting with the course instructor (if we hadn't previously notified them), we would distribute the surveys among the students present. We would introduce ourselves, speak a few words about the proposed IEEP program and ask them if they would take ten minutes or so to fill out the survey. We assured confidentiality and anonymity of their responses. We collected the surveys as they were completed and thanked the class for their time and their input. Altogether, 260 surveys were collected and subsequently analysed by the group.

BIASES AND ASSUMPTIONS:

As a group, we had various biases and assumptions that influenced the design of the survey. For instance, because we felt the introduction of an IEEP would be beneficial to Trent University, Aboriginal communities and society in general, the structure of the survey largely encourages positive rather than negative responses to the program (although there is plenty of room for students to express negative comments regarding the program). In other words, the survey is designed to assess student interest in the implementation of an IEEP program and therefore most of the questions cater to at least a limited degree of interest.

As a group, we also shared the belief that many students would be more inclined to respond to straightforward, closed-ended questions as opposed to longer open-ended inquiries. Having previously worked with a variety of types of surveys, Adene had particular assumptions about how people would respond. As a result of these various beliefs of the group, we endeavoured to limit wherever possible the use of questions that would require lengthy responses.

We also assumed that students would have a basic understanding of what the IEEP would encompass. At the very least, we expected students would be familiar with the fundamental concepts of their respective disciplines. In any case, the survey included a written introduction outlining the IEEP program. Nevertheless, we did not anticipate all respondents to be familiar with concepts outside their program of study; with this is mind, we attempted to present the survey questions in a manner that could be easily understood by all. For example, it was felt that the concept of an "Elder" might not be understood by some students, thus the term "Elder" was prefaced with "Aboriginal traditional teachers" to lend understanding.

Our biases and assumptions also came out during the analysis of the data collected, particularly with the open-ended questions. Firstly, we soon discovered that we all had different ways of recording data and had to come to an agreement about what in particular we were looking for in the responses. As well, in order to make the information that was gathered useful to Dan Longboat, we had to create categories for the various responses and decide for each response which category it would fit into. While we ended up with a significant number of categories for each question, we were nevertheless concerned with having to subjectify people's responses. Moreover, it was often difficult to ascertain the information provided in answers to the open-ended questions because they were not always clearly expressed.

The biases of the researchers also came into play when we chose to classify the respondents in terms of their declared major and year of study. For the open-ended questions, we also categorized the responses in terms of additional background information. Specifically, as well as taking into consideration the major and year of study of each respondent, we also considered their gender, home community and whether or not they were Aboriginal.

LIMITATIONS OF THE METHODOLOGY AND THE RESEARCH IN GENERAL:

We found that the method of a survey for assessing student interest in the IEEP program had certain limitations. While this methodology was the most logical and feasible way of gathering a significant amount of data within the time constraint we were subjected to, we regretted that our choice of conducting a survey was not particularly consistent with the principles of participatory action research. Moreover, data-crunching is scientific by nature, and we were concerned that the specificity of some of the responses would be lost, or that our classifications took the information provided out of context. As already alluded to, our having to categorize or classify the information gathered from open-ended questions also limits the research in terms of it being "research from the margins" because we are imposing our system of classification on the responses of the community surveyed.

We recognized further limitations of the methodology when we saw that when students were not constrained by time, they tended to provide more lengthy and involved responses. We also noted that many of the "answers" provided by the respondents did not necessarily answer the questions! (Although this confused our categorizing, it was actually a hidden benefit because it brought our attention to a number of concerns and issues we may not have previously acknowledged). The survey questions themselves were also somewhat limiting, as will be presented in more detail later on.

Finally, the nature of the group's involvement in the implementation of an IEEP program is limited. While we have provided Dan Longboat with valuable information that will be essential to the development of the program, our short-term involvement in the research gives it a certain lack of continuity. We are concerned that inquiries regarding the survey will not be able to reach us once the school year is over.

TIME FRAME:

Week 1: February 9 to 15, 1997

Discussed expectations of our supervisor and consolidated our ideas on the project	2 hours
Delegated specific duties, initial stages of planning	2.5 hours
Began background research for the project	3 hours

Week 2: February 23 to March 1, 1997

Individually began thinking about survey questions	2 hours
Meeting to plan specific details of process	1.5 hours
Obtained timetables from NS and ERS departments	0.5 hours

Week 3: March 2 to 8, 1997

Meeting at Ann's house to bring together individual survey questions and collectively formulate draft survey	3 hours
Typed rough draft of survey	1 hour
Met with our supervisor to present survey and to discuss questions	2 hours

Week 4: March 9 to 15, 1997

Meeting to revise and finish final copy of survey, work together on research proposal outline and make plans for the week	6 hours
Obtained final approval of the survey by supervisor	1 hour
Photocopying of survey	3 hours

Week 5: March 16 to 22, 1997

Meeting at June's house to organize which classes to distribute surveys to, decide who will go where	2 hours
Distribution and collection of surveys	5 hours (average) (approximate)

Week 6: March 23 to 29, 1997

Meeting at Martin's house to touch base, record how many surveys collected, briefly go over surveys, decide which other classes to distribute survey to	3 hours
Distribution and collection of surveys	8 hours

Week 7: March 30 to April 5, 1997

Distribution and collection of surveys	2 hours
Meet with supervisor to report on progress to date, get direction in drawing-up final report	1 hour
Meeting a Martin's to begin analysing surveys, classify data, input data onto computer, look at overall problems, address issues of research and methodology	7 hours

Week 8: April 6 to 12, 1997

Input data onto computer	6 hours
Categorize qualitative data	7 hours
Meet with supervisor to report on progress to date and receive feedback	0.5 hours
Meeting to touch base, discuss strategy of data categories, structure of final report	3 hours
Individually work on aspects of final report	5 hours (average)
Deal with situation of misplaced proposal outline	1.5 hours

Week 9: April 13 to l4 1997

Continue working on final report write-up, graphs and charts	10 hours
Photocopy report and submit to supervisor and 381B course instructor	0.5 hours

ANALYSIS OF SURVEY QUESTIONS

The process of creating a survey was an interesting learning process for all group members. Our plan was to each read the background information of the program and devise categories and questions that would be important in our survey. When we came together, each of us had six questions that we thought were important to have in the survey. We brought all the suggestions together and tried to find similarities in ideas and ways in which these questions could be represented. The methodology of the survey was also of concern to us during the decision making. In our first draft of the survey we had nine questions with a general information category at the be inning of the survey. The first draft of the survey was written and presented to Dan Longboat. We then had a meeting with Dan to discuss the survey. This turned out to be a very productive and useful meeting. Dan asked us to justify the validity and purpose of all the questions. Revisions were made from this process and a second draft was made. This was also presented to Dan and he was pleased with the result.

Analysis of each question is important in the process of research because it is necessary that we avoid overlap in our questions, that we are able to represent the needs of our agency and provide a tool that the participants can openly express their views of the IEEP program.

An introduction of the program was placed first on our survey so that all participants have the opportunity to further their knowledge about the program before participating in the study. Information in the introduction was brief and to the point. When filling out the survey participants would have little time to do so and it was important to give the most valuable

information in the most concise way possible.

The second part of the survey was devoted to general information categories.

Male/Female
This was helpful for us to know how many men and women are represented in both disciplines. Co-relations will be made with this information.

Program of Study/Year of Study
This data would help us to separate our surveys into participants program of study and the year that they are in. The information provided us with trends that are occurring in disciplines and years.

Home Community
This information would be useful in looking at the different perspectives participants may be coming from. By looking at their home community it could help us to understand why they may or may not be interested in the program.

Aboriginal/non-aboriginal
This would be useful in helping us to determine whether or not both groups of people would be represented in the survey and in the proposed program. It also helped us to see whether the existing programs accommodate the needs of both peoples.

The first two questions represent the interest level of participants and explanation of why this is valuable/not valuable to have.

1. **How interested would you be in an Indigenous Environmental Education Program?**
This question shows how interested people would be in the IEEP Program. By making it closed ended we were able to provide percentages and accessible data to provide clear distinctions for need.

2. Do you feel an IEEP will be beneficial? 2B. Why?
This question provides us with further interest for the program with room to explain why this program would be of benefit. Participants can provide useful comments that will help us to understand the specific needs of the community. The answers will reflect what needs are not being accommodated at this point and ways in which this program will accommodate these needs.

Questions three, five and six give respondents the opportunity to comment on the content of the of the program.

3. Which of the following issues would You be most interested in learning about, from an Aboriginal perspective, as part of such a program?
This question provides us with specific issues that people are concerned about in looking at issues affecting Aboriginal communities and the environment. We choose to list issues because leaving

it open ended may not have provided us with specific needs of curriculum planning. An 'other' category was provided for people to add ideas and suggestions that were not included in the list. This provides our agency with clear ideas for the courses and what people are interested in learning.

Question four A and B are concerned with accreditation of the program.

4. What academic accreditation would you hope to receive or expect from a program like IEEP?

Having a question about accreditation was important in our survey because it helps us to see what people would like to get out of the program. Trent offers many avenues in which a student may obtain their degree. This should be an option for the IEE program. Responses to a 2 year diploma and special emphasis will indicate how much people would like to get out of the program. This knowledge could be obtained in a shorter time and quickly used in their own communities. A BS or BA would indicate a greater commitment to the program by the Trent community.

4B. In the future would you be interested in an IEEP at the graduate level?

When the initial meetings began between the NS, ERS and outside communities, the idea of having a graduate program and possibly a PhD program were discussed. The plan by our agency is to establish a degree program but continue to work towards a graduate level. This question provides our agency with need for a graduate level program and interest. This also gives the respondents an opportunity to think about this in their future plans by becoming aware of it in the surveys.

5. How important would a field component be to an IEEP?

This question is concerned about course content and the practicality of the program. Students should have a say in whether the content should be strictly theoretical or should students have an opportunity to be involved in the community working on projects that are representative of the class that they are taking. This question also shows that in planning this program, we should be concerned of our contribution to the communities outside Trent. By having field components, students will have the opportunity to contribute to the communities that they are involved with.

6. How important is it for Aboriginal traditional teachers and Elders to have a significant role in the IEEP?

This question establishes the need for involvement of outside people that are knowledgeable in these issues. By having the involvement of Elders, the program will ensure that the teachings are coming from an Aboriginal base and being taught by respected people. This question also informs respondents that concern for Aboriginal teachings, cultures and traditions will be paramount in the program. It is an opportunity for students to tell our agency whether it is important to them or not how teachings occur.

Question seven applies to peoples own experiences and need for the IEEP program.

7. Do you feel that such a program would be of benefit to your career and/or life goals?
This question was chosen because it is an opportunity for respondents to indicate whether this program has any relevance to their life specifically. By making, it open-ended students can further explain how this program will affect their life. It is important for us to know this because it indicates the practicality of such a program.

Question eight and nine indicates concerns and further comments that may not have been covered in the survey.

8. What concerns if any would you have about such a program?
This question was chosen because students should have the opportunity to comment on how this program should be structured and what problems might be of concern throughout the process. Answers from this question will help our agency in further planning and process.

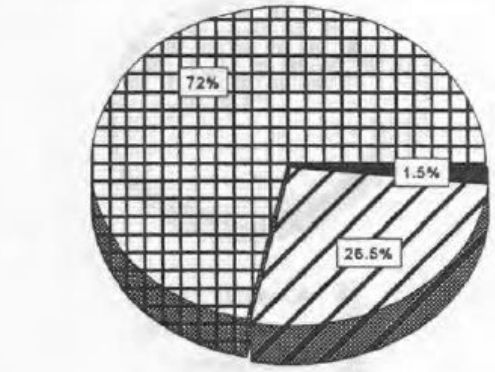
9. Any further comments, opinions or ideas?
The group felt that this question was important to include because it is not possible to cover everything in a short survey. We wanted respondents to have the opportunity and space to say anything they wanted about the program. This is important in our analysis because it will help us in covering topics that may not have been covered in the survey questions.

-11-

The Data

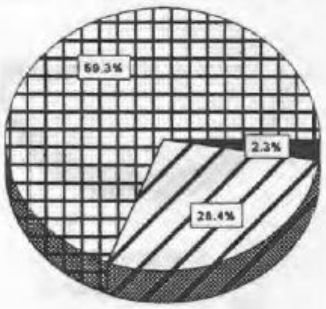
Number of Respondents and their sex:

Total Number of Respondents: 260



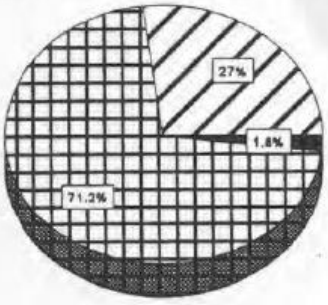
Females:187 Males: 69
No Response: 4

Number of ERS Respondents: 88



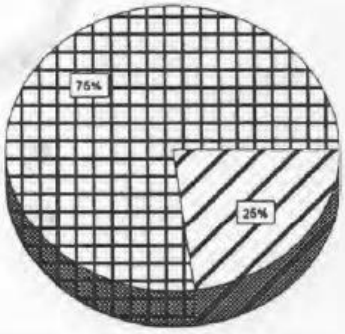
Female: 61 Male: 25
No Response: 2

Number of NS Respondents: 111



Male: 30 Female: 79
No Response: 2

Number of Non-ERS of NS Respondents: 63

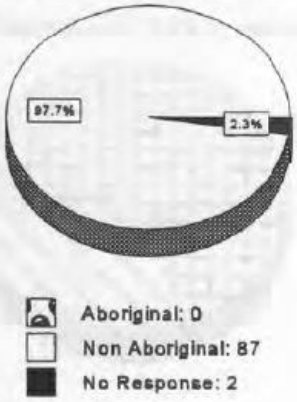


Female: 47 Male: 14

Cultural Background of respondents:

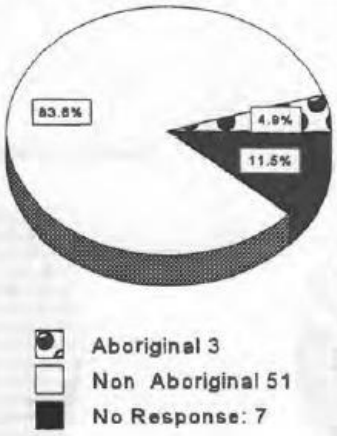
Students were asked to identify themselves as Aboriginal or non-Aboriginal. The results are presented below.

Cultural Background of ERS Respondents



Cultural Background of NS Respondents

Students Other than NS or ERS

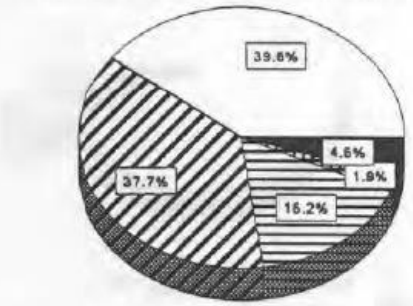


The data clearly indicates the under-representation of Aboriginal students in the ERS stream. Whereas, fully 45% of the students who reported majoring in NS identified themselves as Aboriginal, not one respondent majoring in ERS did.

-13-

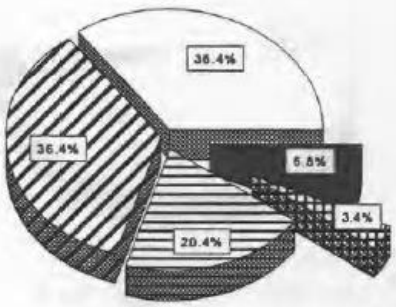
Question One asked, **"How interested would you be in an Indigenous Environmental Education Program?"** The responses are represented below:

Reported Levels of Interest-Total



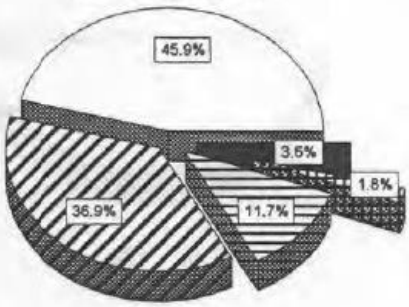
Very
Somewhat
No Response
Interested
Not At All

ERS



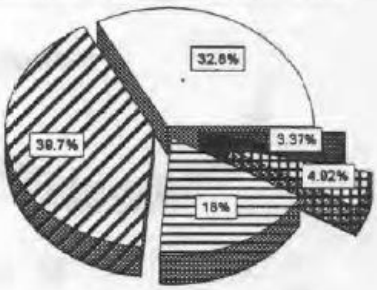
Very: 32
Somewhat: 18
No Response: 6
Interested: 32
Not at All: 3

Native Studies



Very Interested
Somewhat
No Response
Interested
Not at All

Students Other than NS or ERS



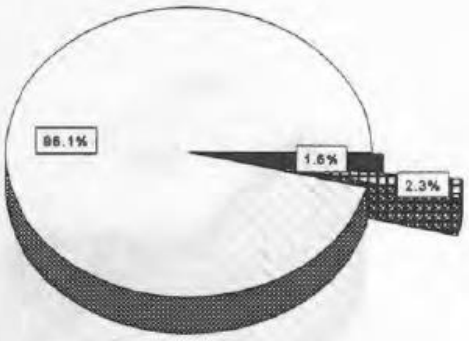
Very
Some What
No Response
Interested
Not at All

Quite clearly there appears to be a broad base of interest in an IEEP across all disciplines.

-14-

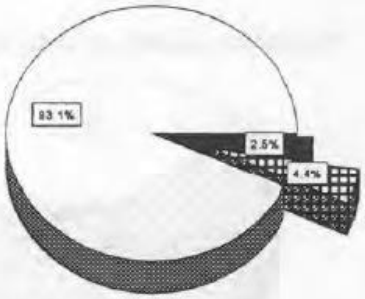
Question Two a. asked,"**Do you feel an IEEP will be beneficial? Yes or No.**" The results are represented below:

Total



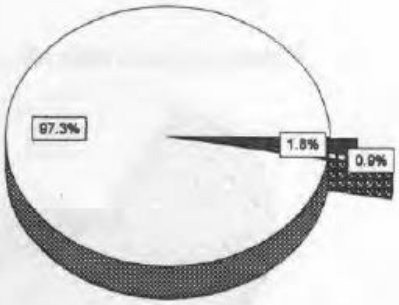
Yes: 250 No: 6
No response: 4

ERS



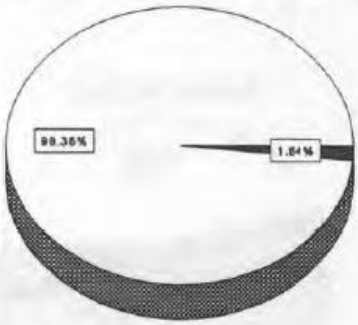
Yes: 82 No: 4
No Response: 2

Native Studies



Yes:108 No: 1
No Response: 2

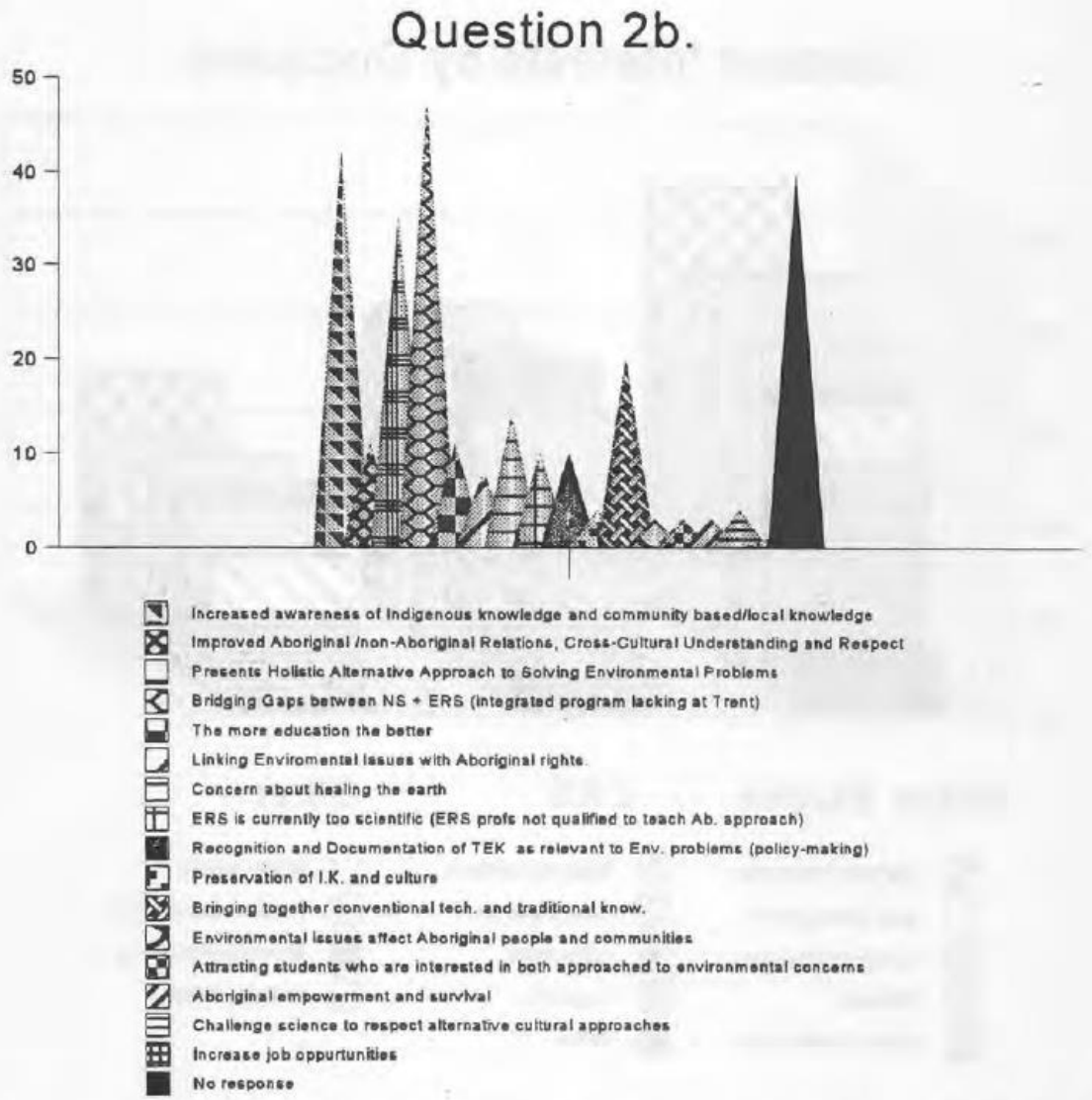
Students Other than NS or ERS



Yes: 60 No: 1

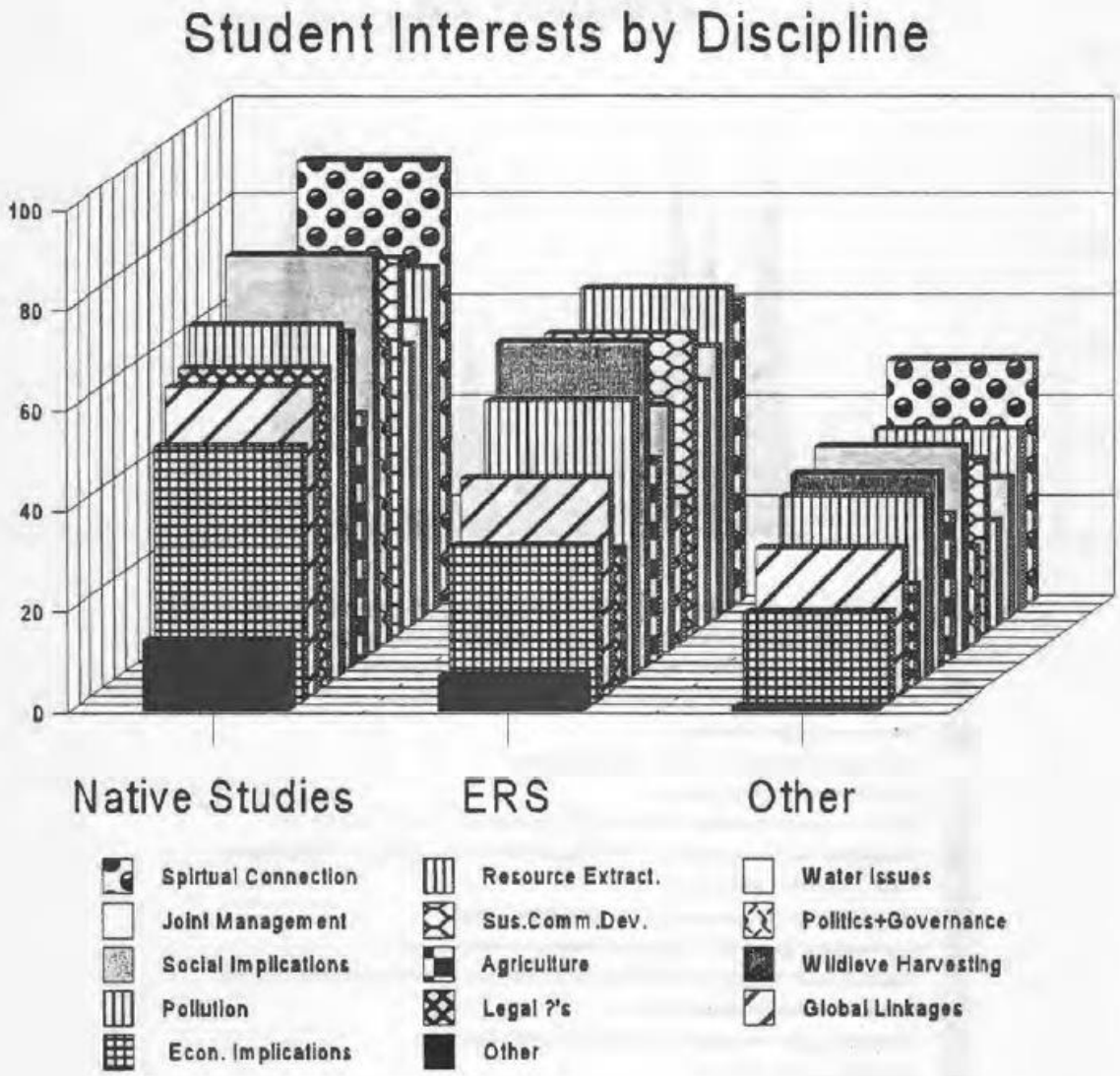
The results are overwhelmingly positive. Again support is widely based across all disciplines. With only six respondents reporting that they felt an IEEP would not be beneficial there appears to be a virtual consensus that the proposed program will be beneficial.

Question Two b. was open-ended and asked, **"Why do you feel an IEEP will be beneficial?"** Sentiments of respondents were grouped in the categories below:

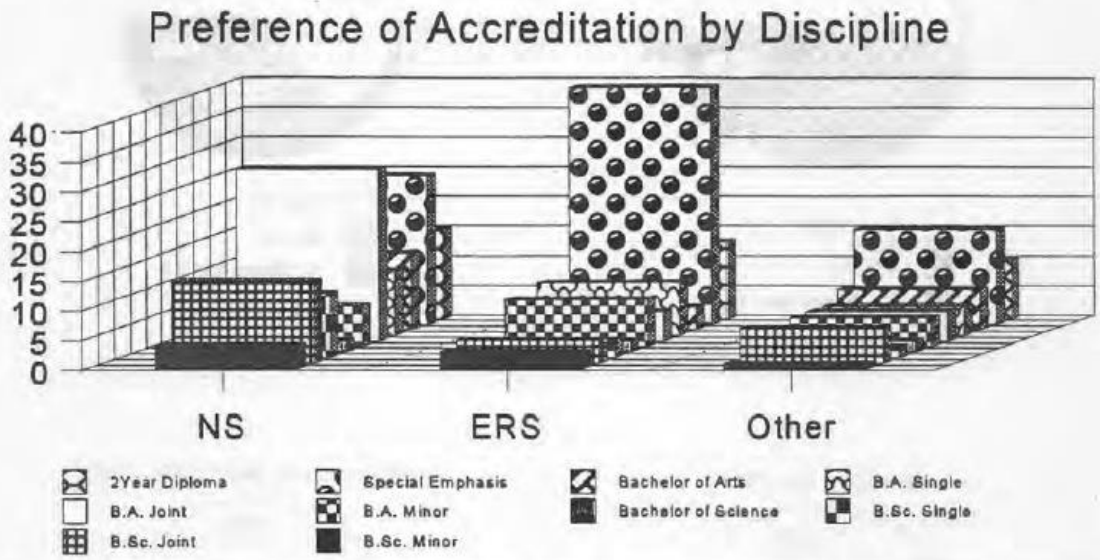


There were only 6 responses that we characterized as negative. Two respondents replied that the question was too unspecific. Two felt that they didn't know enough about the program. Two students thought this program was useless like all other Arts/Sciences courses. One student was not interested at all.

Question Three asked, **"Which of the following issues would you be most interested in learning about from an Aboriginal perspective, as part of such a program?(check as many as apply)"** The results are represented below:



Question Four asked, "**What academic accreditation would you hope to receive or expect from a program like the IEEP? Rank in order of preference.**" When drafted we envisioned the students would rank their first, second, third and fourth choices in the spaces provided. Unfortunately it appears our question was vague. The vast majority of respondents simply placed a check by one of the choices. This being the case, we have recorded those responses. Where students did rank the options we recorded their number one choice. Students who did not indicate a preference for a single, joint or minor B.A. or BSc. are recorded as simply B.A. or BSc.

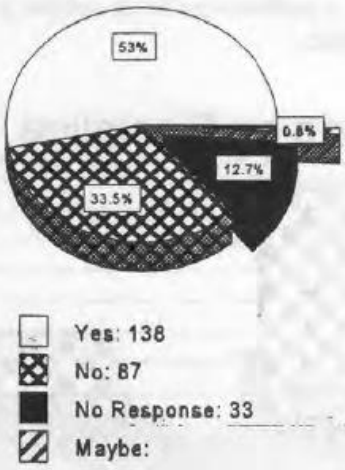


2Year Diploma	15	13	10
Special Emphasis	25	40	16
Bachelor of Arts	13	4	7
B.A. Single	11	9	5
B.A. Joint	29	5	5
B.A. Minor	7	8	5
Bachelor of Science	2	2	2
B.Sc. Single	11	3	2
B.Sc. Joint	14	4	6
B.Sc. Minor	4	3	1

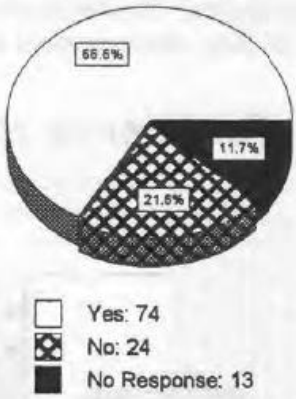
Surprisingly a large number of respondents indicated their preference as being the Special Emphasis option. This option was the first choice among the other students, second among the NS and the overwhelming preference among the ERS students. It is speculated that this is the result of a greater awareness among ERS students of the Special Emphasis in Northern and Polar Studies program. Many of the course offerings that grant credit in that program are in ERS or Geography, a common joint major reported among ERS students. B.A Joint major was the most frequently reported preference among NS students. Indeed the B.A. options appear to be the most appealing among the NS students. Interestingly, the BSc. options received the strongest support from the Native Studies cluster.

Question Four b. asked, **"In the future would you be interested in an IEEP at the graduate level?"** The results are represented below:

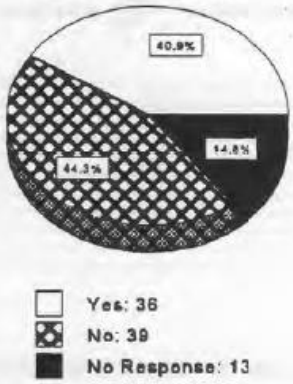
Total



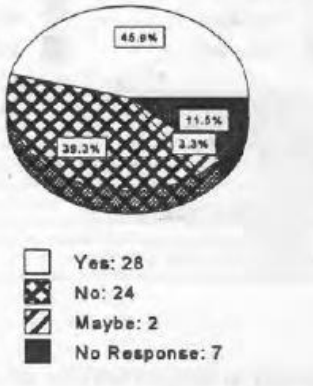
Question 4b. NS



Question 4b. ERS



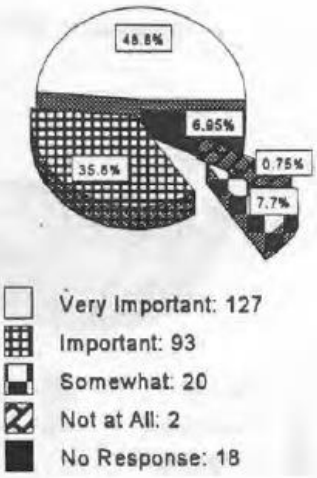
Students Other than ERS or NS



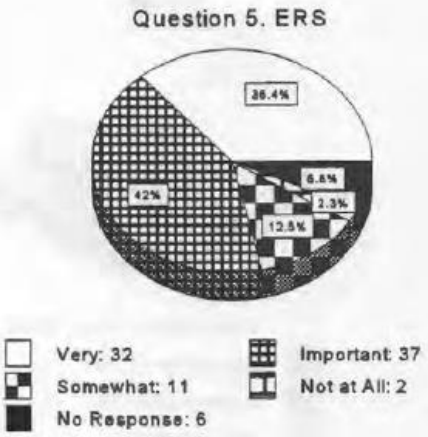
Over half of the respondents reported being interested in an IEEP program at the graduate level, with the largest support coming from the NS students at 66%.

Question Five asked, **"How important would a field component be to an IEEP?"** The responses are represented below:

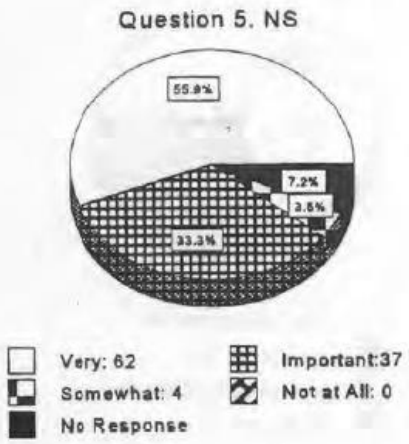
Total



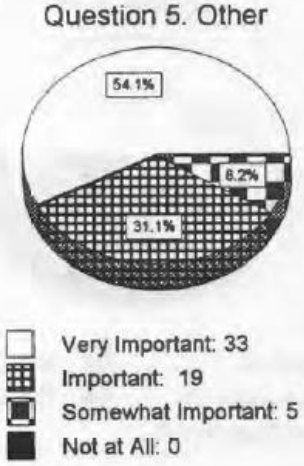
Question 5. ERS



Question 5. NS



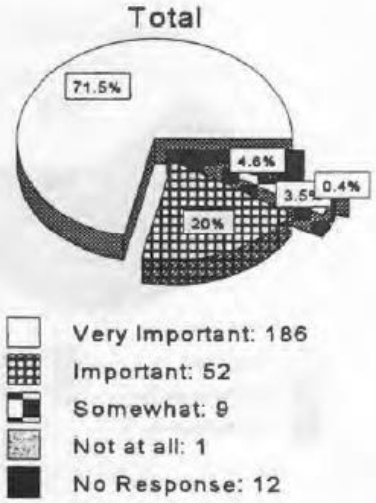
Question 5. Other

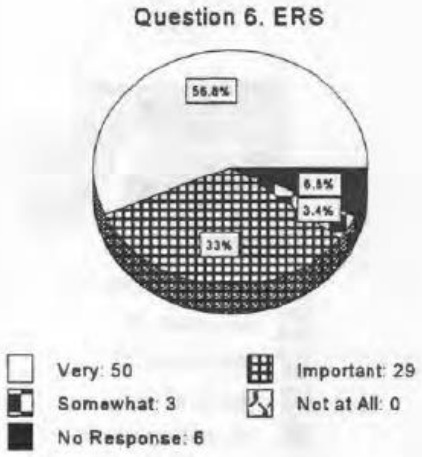


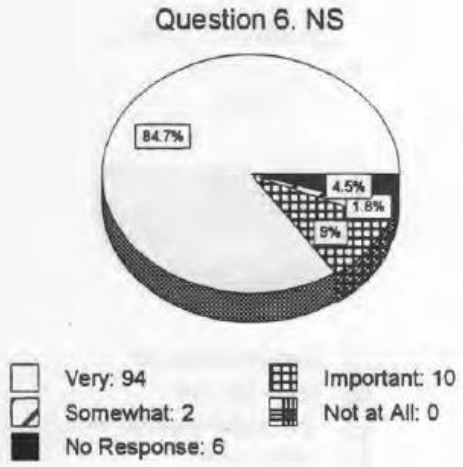
The vast majority of respondents identified a field component as a priority for the IEEP. Only two respondents felt a field component was not at all important.

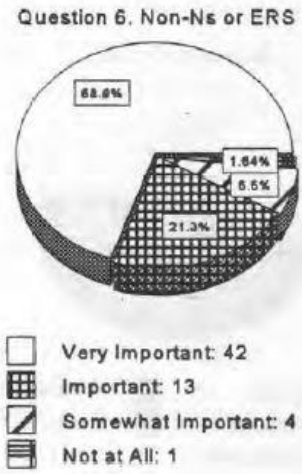
-20-

Question Six asked, **"How important is it for Aboriginal traditional teachers and Elders to have a significant role in the IEEP?"** The responses are represented below:





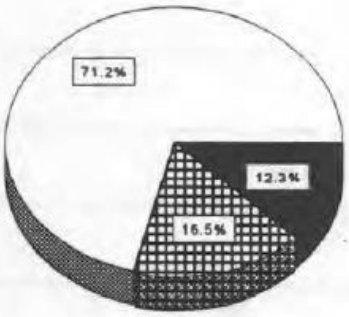




The vast majority identified the inclusion of traditional teachers and Elders as a priority of the IEEP.

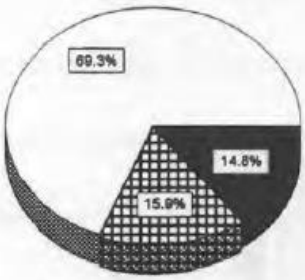
Question 7. asked, **"Do you feel that such a program would be of benefit to your career and/or life goals?"** The responses are represented below:

Total



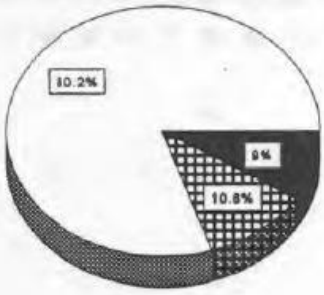
Yes: 185
No: 43
No Response: 32

Question 7. ERS



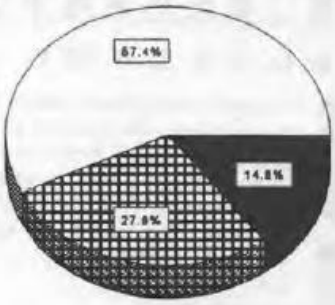
Yes: 61
No: 14
No Response: 13

Question 7. NS



Yes: 89
No: 12
No Response: 10

Question 7. Non-NS or ERS

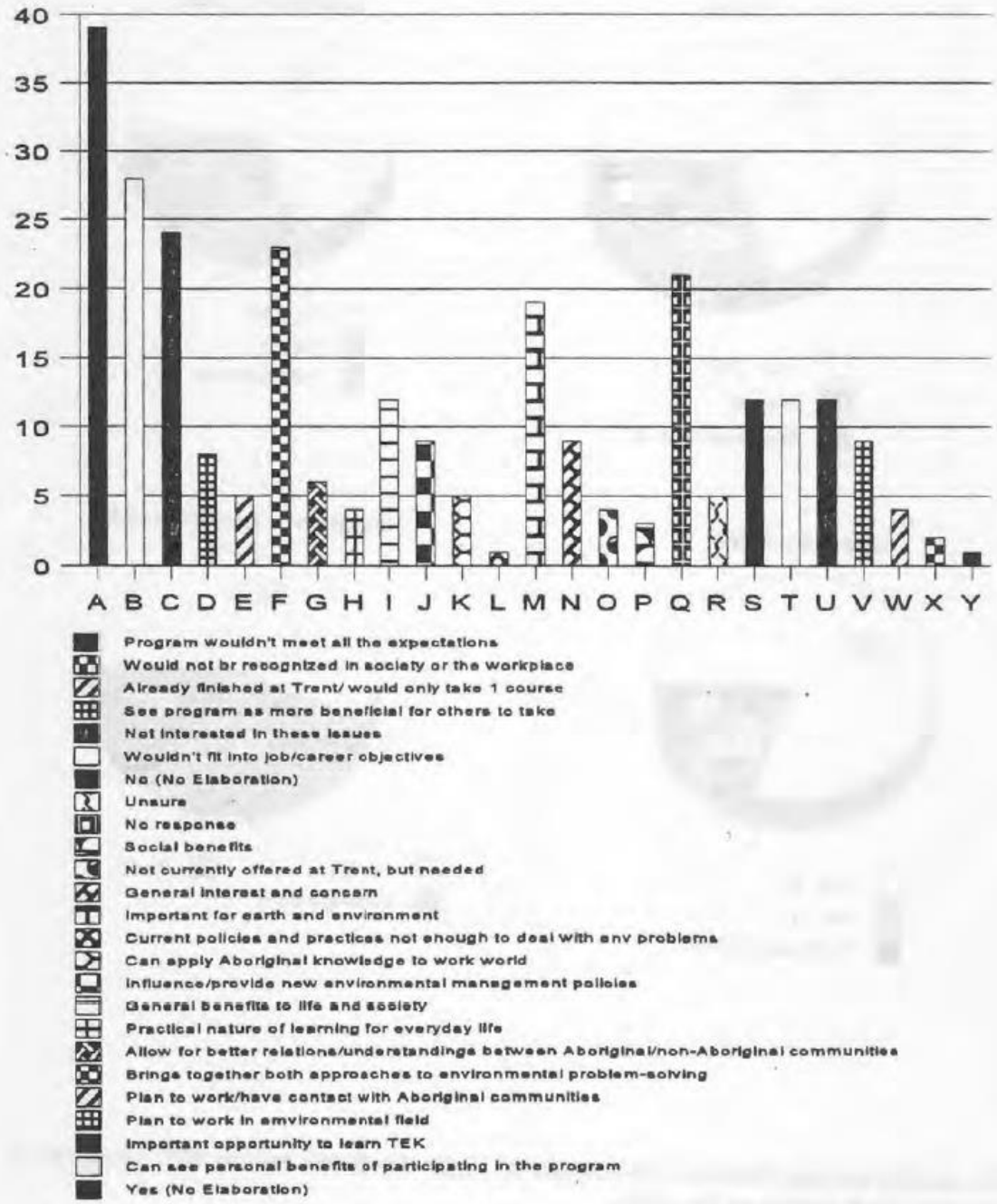


Yes: 35
No: 17
No Response: 9

The results indicate that the vast majority of respondents felt that an IEEP would be of benefit to their career or life goals.

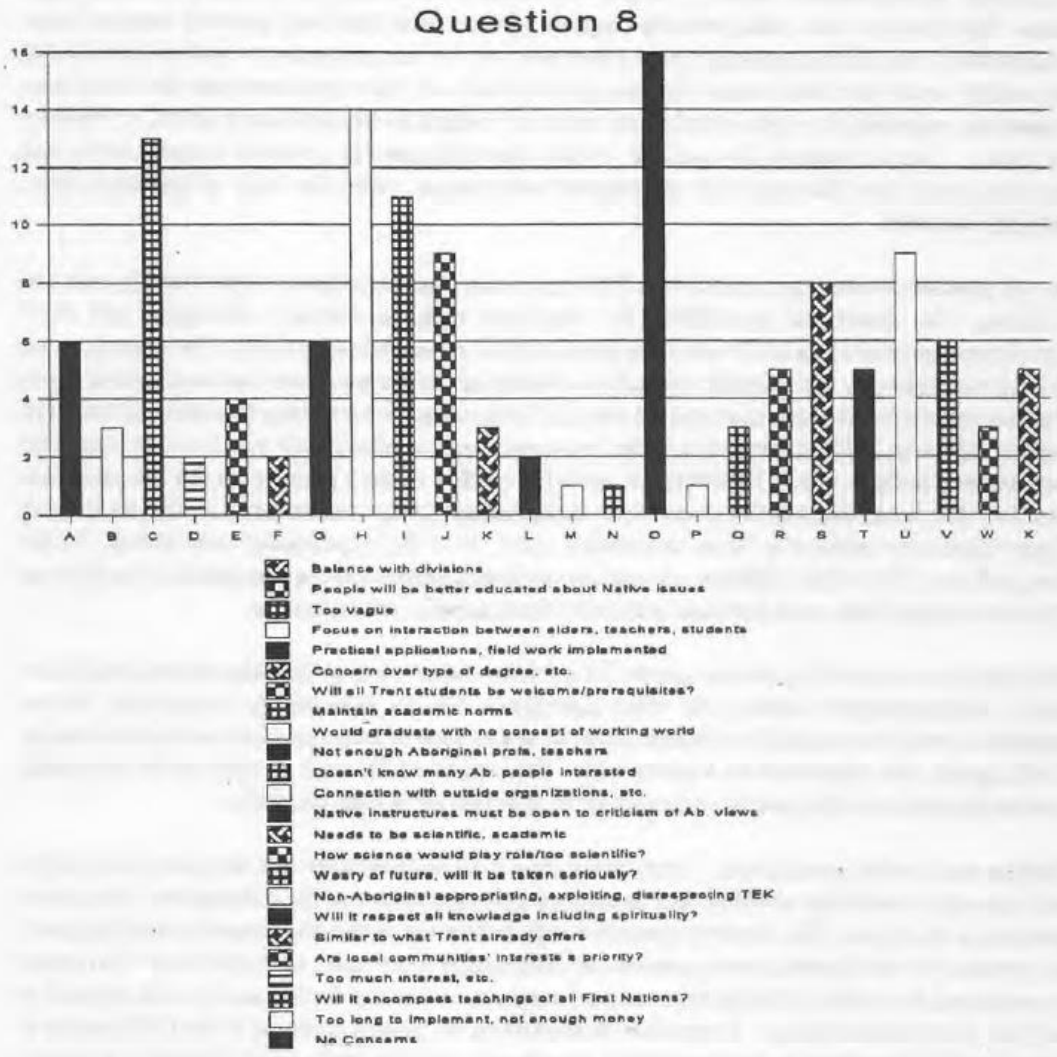
-22-

Question seven b. was open-ended and asked why or why not students felt an IEEP would be beneficial to their career or life goals. The results are represented below:



-23-

In question 8, respondents were asked the following open-ended question, **"What concerns, if any, would you have about such a program?"** 130 students gave no response. Concerns of respondents were as follows:



Question Nine asked the respondents for more personal input, **"Any further comments, opinions, or ideas?"** This question was open-ended and the answers varied. 182 of the surveys had no response. 51 respondents answered with words encouragement, including "I wish it had started earlier," "Step in the right direction," and "Very exciting."

SOME NOTES ON DATA ANALYSIS

The members of the research group are aware that some of the information possibly gleaned from the surveys was not focussed on in our presentation of the data. For instance, information on "Home Community" of respondents was not broken down and presented among the personal information pie charts. This decision was made partially because of time constraints and partially because some members felt it was not the most important information to be concentrated on. Further correlations that possibly could have been made between characteristics of the respondents and their responses to questions, especially the open ended ones, were not thought to be particularly useful, or valid for that matter. This is because few notable trends regarding specific personal characteristics and responses (apart from the ones that are graphed and charted within the body of presented data) seemingly occurred.

The only possible interesting correlations of this type were that: in response to question 2b, only one of thirteen who mentioned possibilities for improved relations between Aboriginal and Non-Aboriginal people due to an IEEP was Aboriginal; and all those who responded to the same question that ERS was currently too scientific were Non-Aboriginal. It is easy to see that conclusions drawn by such connections are tenuous as people may not have included everything that they felt would be beneficial about an IEEP in their open ended responses and may have only put down the ones that jumped immediately to mind. Furthermore, as to the validity of such patterns on the few occasions when they did occur, this must be questioned as the sample group was random, so that its makeup reflects imbalances within the Trent community (i.e.72% of the respondents were female, 20.4% Aboriginal, etc.). The widely differing percentages in these cases would can into question conclusions drawn concerning links made between personal characteristics and responses.

Here it may also be noted that the bar graphs for questions which present the reformation from Native Studies, Environmental Studies and other disciplines side by side and in comparative format (questions 3 and 4 for example) are based on the actual number of responses and not the percentages of each group who responded in a given way. This must just be kept in mind when comparing between disciplines as the number of respondents is not equal in each discipline.

A further note on the presentation: most of the data is to acknowledge that the charts and graphs used represent a decidedly scientific and quantitative categorization of the information. As is noted elsewhere in the report, this does not seem to totally reflect the goals of community based research but seemed to be the clearest way to present the information in an easily accessible way. The actual surveys themselves will be handed over to Dan Longboat so that any further analysis can be made in the future if needed or desired. It may also be interesting for people involved in the IEEP project to read some of the responses to the open ended questions to note the enthusiasm of many respondents and get a fuller sense of the responses than the quantified graphs provide.

THE SURVEY CRITICISM AND RECOMMENDATIONS

Part of any community-based research should be some degree of analysis of the entire research procedure, what went well, poorly, how things could have been done differently, etc. With the intention of assessing the positive and negative aspects of our group research project, the following is a brief examination of our survey questions and our recommendations for avoiding similar problems.

-some respondents did not know to fill out the back of the survey. When introducing the survey to the classes, we should have explained that there were two sides to the survey.

-"year of study" presented a few problems; some students answered with 1996 for instance. Perhaps structuring the question so that the students were presented with the option of encircling 1st, 2nd, 3rd or 4th would have alleviated the problem.

-the rating questions worked out well; they lended themselves readily to pie charts which allow for a quick assessment of the issue presented in the question.

-Question 4a regarding accreditation turned out to be very problematic. Since most students did not rank as was asked of them in the question (they merely indicated with a what was their preferred choice), we have deduced that the question was too complicated and involved. Many respondents also did not indicate whether they would prefer a single major, joint major, or minor with a Bachelor of Arts / Science. In our analysis, we ended-up analysing the first choice answer (indicated with either a " " or "1"). Nevertheless, we were able to get some indication of which option people preferred.

-as discussed in a previous section of this report (see *Methodology* section), the open-ended questions (#2b, 7, 8, 9) were problematic in the sense that we had to subject the responses to categories that we created, thus taking them out of their context.

-there was a common trend of respondents leaving Questions 8 and 9 blank. Perhaps they faced time constraints, or simply were not interested enough in the survey to answer those questions. We also wonder if the fact that these questions were at the end may have been the reason that they were often left blank. While positioning them elsewhere in the survey may have alleviated this problem, the flow of the questions would have been affected.

-analysis of Question 9 was a difficult process because the responses were frequently very specific and individual. While we did place the responses into various categories, they are most valuable when looked at individually.

APPLICATIONS OF THE REPORT

In the initial stages of our research process, we had decided that to fully represent the views and ideas of participants of the survey, it would be best represented in a full report on our findings and the research process. The action from the results would follow the writing of the report. This also suited our agency in the best way. In order for action to occur with this project, it was essential that research indicate the views of the Trent community.

Although participatory action throughout the process was not the primary concern for us as a researching group, we were able to learn the characteristics of elements of our research. By working with the Trent community, we were able to see the viability of the proposed program. We learned about the dynamics of our community (populations of NS and ERS, resource people in each discipline, expectations of each NS and ERS concerning course curriculum). We also became more knowledgeable of the views and expectations from students taking, courses in the disciplines. By doing the survey and telling people about the program, we shared our hopes, ideas and concerns about the implementation of the IEEP program.

FURTHER ACTION THAT WILL BE TAKEN BY THE RESEARCH GROUP

After doing the report, we all share mixed feelings of the process and methodology used in the research. As a group, we have discussed these issues and tried to put as much of this in the report as possible. Our initial goal was to meet the needs of our agency. The expectation from our agency was that we would produce a report that would represent the views of the Trent community concerning the implementation of an IEEP program. The assumption was that this program would be beneficial to students, the Trent community and outside communities because there is nothing like it in Canada. We all agree that we have fulfilled the expectations of our agency by providing this report. There are still many concerns we have about this method of representing the voices of the Trent community.

We think that it is important that further research occur that would involve students of NS and ERS in the planning process of IEEP program. It is important that student input and concern be a part of this process. In order to make this research valuable, it is important for some of us to continue in this research as well as involving more members. This can occur through focus groups and/or interviews with students. It is also important that outside communities be involved in the planning stages of the program. In order for Trent to provide a program, it needs the input of outside communities. These essentially will be the contributors to the program.

To bring positive social change in this research, it is important that alternative methods be used in gathering data for the planning and implementation of the program. Given the time constraints of this research, we were unable to explore alternative methods of data collection and analysis.

At this point, our participation as a group will end in the research process. The report will provide the data and analysis to others who may want to continue in the research process. Further research is still needed in this process. The research for this project can continue by other community members. Our report will be accessible to any person/s that may want to continue in this research.

FURTHER ACTION THAT WILL BE TAKEN BY OUR AGENCY

The goal of our research was to continue the process of planning that had already been taken by Dan Longboat, the Native Studies Department and the Environmental Resource Studies Department. By doing this research, people became more aware of the program and were able to share their input into the process. The research will be used to show the NS and ERS departments that there is a need for this program and that the existing programs do not accommodate the needs of our communities. It will also be a useful tool to show need in the Trent community and to outside communities. This report will also be useful in acquiring funding for the program and involvement of donors. This report will be used as a base for further research and planning. Further goals of our agency are to create a community survey as well as a web page that will contain a survey for further interest.

Appendix G

Report for the Aboriginal Education Council

EXECUTIVE SUMMARY
Trent University
Peterborough, Ontario

INDIGENOUS ENVIRONMENTAL EDUCATION PROGRAM
Skanikon:raht
"Putting our Minds together"

"Trent University aspires to be Canada's outstanding small university known for its commitment to liberal undergraduate education in the humanities, social sciences and natural sciences and to the centrality of the individual student".

Background:

Trent University is located on the Otonabee River in the City of Peterborough and is well known from Macleans Magazine survey as "one of Canada's outstanding small Universities. Part of Trent's mission is "to seek to advance learning through the creative interaction of teaching and research of the highest quality" has helped to put Trent in the forefront as a leader in university education. Trent's success, is that it continues to lead the way in developing new and innovative educational opportunities. It has created a range of both traditional and interdisciplinary programs that reinforces the goal of liberal education linking teaching and research opportunities to create one of the best educational institutions in this country. Trent is well known for its exceptional Environmental And Resource Studies Program, introduced in 1975, was one of the first comprehensive environmental programs and since then has produced some of the best environmental scientists in Canada. Trent, is also well known for its Native Studies Department, which originated in 1969 and will soon celebrate it's 30th anniversary. It was the first Native Studies program in Canada. Today, Trent is recognized for excellence in learning and sees the importance of these two disciplines, which collectively teaches over one third of Trent's 5000 student course enrollment.

The Need:

Public awareness of environmental problems facing society has continued to increase and has created a need which is reflected in the growth of environmental education. The study of environmental and resource issues has recognized the central role of Indigenous knowledge systems to encourage understanding and appreciation of the Natural World. The Indigenous perspectives on environmental knowledge can create a unique means of integrating with and creating viable linkages to present scientific perspectives. This need for the development of a shared environmental knowledge base is recognized by many, including the Brundtland Report and Agenda 21 of the United Nations Summit on the Environment, as necessary to make a significant contribution to the future sustainability of the World. Trent has chosen to meet this challenge and has taken the opportunity to find solutions by creating an exciting, new and innovative program of study as a specialized university program to be called the "Indigenous Environmental Education Program" (IEEP).

The Goal:

To study and build a relationship between Indigenous Environmental Knowledge Systems with the science and technologies of Environmental and Resource Studies. The result will be a specialized program which will study Indigenous environmental knowledge and thought, sustainable community economics and development, natural resource management and ecological sustainability. These courses will be solidly based with both Aboriginal cultures and the academic tradition. The Program will contribute immeasurably to the recognition and articulation of Indigenous knowledge and the

TRENT UNIVERSITY
REPORT FOR THE ABORIGINAL EDUCATION COUNCIL SEPT. 19,1996

The "Indigenous Environmental Education Program".
"putting our minds together"

In our Communities we are facing increased environmental and resource management issues and are in desperate need to develop solutions to these problems. These issue range from contamination from surrounding industries, to waste and water treatment issues, to access and control of natural resources in our traditional and treaty areas. Since creation we as Indigenous peoples have been given a great knowledge of the natural world, which we call today Traditional Environmental Knowledge (TEK). Today, more than ever TEK is needed to help resolve not only our environmental problems but that of the world. The United Nations Declaration of the importance of Indigenous knowledge systems points to the great need for our involvement in environmental education . Today's environmental problems cannot be adequately solved using today's technology and science. We, as Aboriginal people, need the opportunity to develop a program of learning and study to help find the solutions to our common environmental problems and in the process provide to all peoples a new way of relating to the natural world.

Our work to date has been as follows.

- Worked together to develop a working committee with the Department of Native Studies and the Environmental and Resource Studies Program at Trent.
- Appointed a Program Coordinator the begin to develop a process to develop this program.
- Hired summer students for an eight week program to research and develop a Network of concerned individuals and organizations to participate in the development of the program.
- Survey and examine existing similar programs in colleges and universities.
- Collect and existing curriculum and information that may be useful to the program.
- Organize the groundwork for a small conference or Focus Group to begin the planning process, to be held this fall at Trent .
- Met with Curve Lake First Nation Council to help host the Focus Group meeting.
- Plan dates for meeting as OCTOBER 18 and 19, 1996.
- Begin to identify individuals to actively participate in the program delivery.
- Identify potential funding sources.
- Identify potential partners to participate in program support and development.
- Continuing research and ongoing fundraising activities.

This program could be the first University level degree of it's kind in North America. The program calls for the development of a relationship which facilitates the working together of these two ways of knowing to help solve our common environmental crises. This resulting integration and personal growth in knowledge and practical skills will strengthen and inform environmental actions for the benefit of our future generations.

Respectfully submitted by
Dan Oronhiakehwen Longboat
Program Coordinator.

Appendix H

Example of IES Program Meeting Minutes

IES Program Meeting

September 7th 2007 FPHL Olive Dickenson Room, 10am.

Agenda

1) Opening of the meeting
2) IES brochure. Wording, pictures, design and quantity.
3) 265 update.
4) Compile information for ERS, as outlined at the ERS visioning meeting. Base on the document from the IES visioning meeting May 17th 2007. Current courses, new courses needed, solutions to problems students have, how to increase enrolment, future direction
5) Courses that are offered by other departments that could be cross-listed. Need to encourage Indigenous content.
6) Calendar copy for 2008-2009.
7) Steps in changing from a minor to a major.
8) Preparation for meeting with Vice-President of Advancement and External Relations.
9) Prep for meeting with Dept Chairs and Dean Graduate Studies re: IES grad program interests
10) AOB

Closing of the Meeting

Appendix I

Interview Guide and Questions

Interview Guide

Dan Longboat, Director of the Indigenous Environmental Studies (IES) Program at Trent University has expressed a need for a comprehensive document that chronicles the creation and successful implementation of the IES program. This research will attempt to understand the thinking, processes, people and environments (physical, mental, spiritual) that contributed to the success of the program.

The format of the interviews will be semi-structured and conversational. A deep understanding for personal and reflexive truths (Simpson 2011; Johnston 2007; Barker 2010; Cheney and Weston 1999; Archibald 2008; Wilson 2008) is implicit in this work and supported by the researcher.

Below are some topical questions to facilitate conversation.

- When did you first come into contact with the IES program/concept?
- What drew you to become involved?
- How would you describe your role(s) in the program?
- What were the ideas, concepts, thinking, energies, surrounding the program/concept at that time?
- Describe a moment or situation where you felt most proud for being a part of the IES program?
- Can you describe some of the obstacles you have observed the program face?
- Can you describe an obstacle you have personally faced within the program? How did you deal with it? What supports did you draw on? (If any)
- Describe a moment you felt was a key success for the program
- Who would you identify as key players in the success of the IES program?
- In your experience and opinion, why do you feel the IES program has managed to overcome barriers where other like programs have not?