Environmental sustainability and environmental justice:
From buzzwords to emancipatory pro-environmental behaviour change

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Environmental sustainability and justice and experiential education are present-day "buzzwords." This case study of one secondary school Environmental Studies Program in Ontario, Canada problematizes the assumption that environmental knowledge(s), one form of experiential education, automatically leads to students acting pro-environmentally, querying: 1) how does environmental education impact secondary school students' pro-environmental behaviours?; 2) to what extent does environmental knowledge inform environmental actions? Four primary themes emerged in one case study: a) strong sense of community; b) the evolving mission/vision in the program; c) the teacher's evolving pedagogical praxis; and d) an increase in activist leanings in students. The role of the teacher on student learning, a discussion of emancipatory environmental actions, and educational policy implications are discussed.

Key words: Environmental Education in Ontario Secondary Schools, Experiential Education, Case Study Research

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Introduction

Experiential Learning and Experiential Education have become buzzwords within corporations and organizations and across university campuses. Alongside this trend, environmental issues and environmental sustainability per se are currently being debated at dinner tables, in popular and documentary films, in newspapers, books, and magazines, in boardrooms and classrooms and within all levels of government (Breunig, 2012). Two recent books that seem to have caught the public's imagination, *Last Child in the Woods* and *The Nature Principle*, describe the consequences of "nature deficit disorder" including: children's declining contact with nature and the simple (experiential) pleasure of having dirty hands and wet feet (Louv, 2006, 2011). Additionally, recognition of global environmental degradation is on the rise and changes in the environment and its natural systems have emerged as a matter of increasingly urgent concern around the world (Bondar et al., 2007, Jorgenson, 2006; Kola-Olusanya, 2005). As we approach the midpoint of the United Nations Decade of Education for Sustainable Development (2005-2014), governments around the World have introduced a variety of environmental education initiatives.

The purpose of this present study is to investigate: 1) how environmental education impacts secondary school students' pro-environmental behaviours; and 2) to what extent and in what ways does environmental knowledge inform social and environmental actions. I will present the results of one case study of an integrated Environmental Studies Program (ESP) in Ontario, Canada, employing data that spans a four-year period from the time of program commencement in 2009.

Literature Review

What ought and can be done about environmental degradation is contested and relates to opinions regarding fundamental cause(s). One solution commonly suggested is education (NGO Treaty, 1992; WCED, 1993). Environmental education is one common practice and form of experiential education. This next section will define experiential education and environmental education and will provide an overview of environmental education in Ontario with specific mention of the integrated Environmental Studies Program.
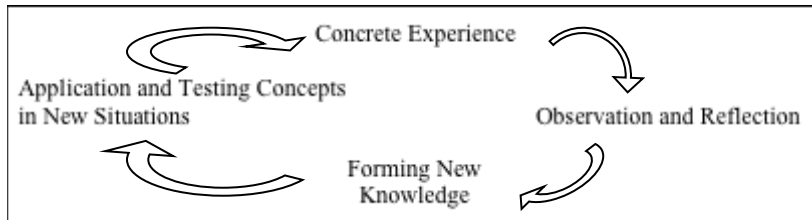
Experiential Education

There are numerous published definitions of experiential education (Breunig, 2008; Joplin, 1981; Itin, 1999). The Association for Experiential Education (2011) defines experiential education as both a philosophy and methodology in which educators purposefully engage with learners in direct experience and focused reflection to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities. Central to this definition is the distinction between experiential education as methodology and experiential education as philosophy. Clifford Knapp, a prominent experiential educator, helps to highlight the difference between what is often referred to as experiential learning (methodology) and experiential education (philosophy). This distinction is important given these terms are often erroneously used interchangeably (Breunig, 2008; Itin, 1999).

Knapp (1992) explains that experiential learning consists of four distinct segments: "(a) active student involvement in a meaningful and challenging experience, (b) reflection upon the experience individually and in a group, (c) the development of new knowledge about the world,

and (d) application of this knowledge to a new situation" (pp. 36-37). The experiential learning cycle in Figure 1 helps to illustrate this:

Figure 1. The experiential learning cycle (Kolb, 1984).

Kolb's (1984) experiential learning cycle illustrates how experience, reflection, new knowledge, and application can be employed as a way of teaching. Many experiential educational initiatives are based on this learning cycle but do not prescribe an intended learning outcome or aim. In essence, employing the experiential learning cycle without an intended educational aim represents a methodology, implying that there is a certain way of teaching that makes the learning experiential. Experiential education as philosophy employs both methodology (experiential way of teaching) and philosophy as part of the educative process. Experiential education as philosophy implies that there is an intended aim toward which the experiential learning process is directed and that this philosophical/teleological orientation holds social and environmental transformative potential (Breunig, 2008; Warren, 2002).

Environmental Education

Similarly, there are many definitions and approaches to experiential education's varied practices, forms, and settings, including, place-based education, service-learning, adventure education, environmental education, and eco-pedagogy, to name a few (Lund, 1997). Each approach and practice reflects particular contexts and ideological predispositions (Sauvé, 1996). I, alongside other educators, favour a "critical" and "holistic" approach to environmental education. Educators working from this position aim to encourage critical reflection on human/nature relations, nurture healthy relationships both among humans and between humans and other life, while working concurrently toward social and environmental justice (e.g., Fawcett Bell, & Russell, 2002; Gough, 1997; O'Sullivan, 1999). I believe that issues of social and environmental justice are intimately intertwined and affirm that an experiential, environmental pedagogy is one means to work toward these forms of justice (Breunig, 2005; Itin, 1999).

Experiential and environmental education are often considered to be "alternative" pedagogies in light of these positions and definitions (Allison & Pomery, 2000) and counter-hegemonic in light of their intended justice-oriented aims. One challenge across North America and beyond is that the current educational climate has been moving away from educational innovation and alternative pedagogies (e.g. forms of experiential education) and toward greater accountability, fiscal efficiency, standardization, and "back-to-basics" curriculum (Edmondson, 2004; Orr, 1992). One result in Canada has been the deprioritization of curricular content related to the environment (Elrick, 2000; Puk, 2002).

Environmental studies programs. Even during these challenging times in Canada, however, one particular initiative has continued to flourish–the integrated Environmental Studies Programs (ESPs)–wherein environmental topics are integrated into a holistic and interdisciplinary curriculum model taught at the secondary school level to students who register for a "package" of courses and spend the full semester with one to two teachers and a single student cohort (Horwood, 2002; Russell & Burton, 2000). The full-day cohort structure of ESPs provides for environmentally related experiential learning opportunities such as extended outdoor field trips or field study camps, volunteering, co-op placements and service learning with environmental organizations, and investigations of local environmental issues and processes (Russell, Bell, & Fawcett, 2000). The intent of integrated ESPs–that learning be grounded in authentic "real world" experiences and provide students with opportunities for critical and holistic thinking–is a good example of a socially critical approach to environmental education and one that provides the foundation for this study.

One recent policy-oriented initiative in Ontario, Canada is the *Specialist High Skills Major (SHSM) – The Environment,* which was introduced in 2009 by the Ministry of Education. According to the Ministry of Education (2009), the environmental education curricula associated with the *SHSM* will enable "students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace" (p. 3). Currently, 35 school boards in Ontario are attempting to operationalize this curricular initiative.

In 2007, the Minister of Education commissioned a group of experts to make recommendations on environmental education policy in schools (known as *The Bondar Report*). The Ministry has publicly declared that all 26 recommendations of that report will be implemented. The introduction of the SHSM in 2009 and the *Bondar Report* have increased momentum and further renewed justification for the ESP programs. There exists a need for the successes, challenges, and implications of the enactment of both the *SHSM – The Environment* and *The Bondar Report* to be investigated.

Methods

The study employs case study methodology. It is field-based, sensitive to context, and calls attention to particulars (Yin, 2009). To attain a rich, in-depth understanding of educational practices and student learning in ESPs, we are currently in the midst of a longitudinal study consisting of multiple cases where data has been collected through student focus group sessions, interviews with students, teachers, and administrators, and document analysis. This larger study is funded by the Canadian Social Sciences and Humanities Research Council (SSHRC).

In this paper, we are zeroing in on results from student focus group sessions and teacher and principal interviews at one study site, a rural high school. We present results over a four-year period from program commencement (2009) until our latest data cycle (June, 2012). Purposive sampling has been employed in choosing the study sites for the broader study, ensuring we investigate both newer and longer standing programs, settings that are both rural and urban, and programs taught by teachers of both genders with a range of years of experience and disciplinary backgrounds. The case studies are descriptive (offering rich accounts), interpretive (analyzing data in light of theory) and evaluative (determining educational outcomes and identifying educational potential and challenges) (Merriam, 1998).

The results presented here investigated: 1) how environmental education impacts secondary school students' pro-environmental behaviours; 2) to what extent and in what ways

environmental knowledge informs social and environmental actions; and 3) which knowledge(s)impact(s)students' attitudes to and relationships with and to the environment.

Study Site and Participants

Pseudonyms are used hereafter for both the school and all comments. The school has a population of 600 students and holds a mix of Caucasian, Metis, and Native Canadian students. The curricular package consists of the following Ontario Ministry of Education courses: English; Cooperative Education; and Geography. The school adopted the *Specialist High Skills Major – the Environment* initiative in 2011.

According to the program website description, the program offers students the opportunity to receive course credits through a combination of traditional academic studies and practical outdoor skills, promoting community-building in the classroom and offering students an alternative perspective and format of learning. Throughout the program, students examine local and global environmental issues and develop a personal environmental ethic. Julia is the primary teacher of the program and has five years of teaching experience, four of those with the ESP program which she developed upon her arrival at the school. Julia self identifies as a young white, woman, and as a passionate teacher whose pedagogy and program are still "in progress."

Data Collection and Analysis

Data was collected through 8 pre- and post-program student focus group sessions, 4 post-program teacher interviews, and 2 principal interviews. The student focus group sessions involved 77 students in total, 39 boys and 38 girls, evenly divided across the 4 years. Each focus group session lasted approximately 1.25 hours. Interviews took between 35-50 minutes. Student focus group sessions and interviews were semi-structured with room for general conversation and consisted of questions about how students' participation and the teacher's teaching praxis impacted attitudes, knowledge(s), and actions regarding issues of social and environmental justice. The semi-structured nature of these interviews and focus group sessions allowed for the collection of data on issues of both long-standing and emerging concerns to us, and to make comparisons across years (Tierney & Dilley, 2001). Because meanings and answers arising from focus group interviews are socially rather than individually constructed (Berg, 2004), focus group sessions provided students with a forum to collectively reflect upon and articulate their experiences. As such, we argue that the resultant responses were particularly generative and sapient (Morgan, 2001). Teacher and principal interviews centred on questions about program successes and challenges and the ways in which the Ministry policy initiative (e.g. *SHSM*) impacted the program.

Data from these focus group sessions and interviews were deductively coded for conceptual themes and subthemes, combining the voices of students, teachers, and principals into a cogent narrative (Gubrium & Holstein, 2001; McMillan & Schumacher, 2001). The study underwent university and secondary school board ethical review.

Results

Four primary themes emerged in analysis and centred around the ways in which the program has evolved. These included: a) strong sense of community and group cohesion; b) the evolving mission/vision; c) the teacher adapting and growing in her pedagogical praxis; and d) an increase in activist leanings.

Strong Sense of Community and Group Cohesion

All reports across all years from both the student focus group sessions and interviews suggest that the program impacts students' sense of community and sense of belonging given its cohort structure. Martha (2012) (student) said, "The most valuable thing is the group cohesion, building a sense of community within the class." From that same cohort, Tim talked about how challenges brought the group closer together, going on to say:

When we were going through things we would have group chats, which was good 'cause I guess that's one thing different than other classes is that if you have a problem with someone you wouldn't bring it up necessarily, but because [of the] group dynamics [of this class], we [would] have a circle chat where you say 'I feel this, instead of like 'you did this, you did this.'

In 2011, Eliza concluded, "Um I didn't know a single person when I started this class so that was really really intimidating and I don't know everyone just grew on me," in speaking about the positive group dynamics. Janessa (2010) reported, "Spending three classes a day with the same people, you grow to depend on them." Jill added, "We just all really relied on each other. We all got to really know each other through being so positive and spending so much time together."

Focus group and interview reports include commentary about the role that community plays in students making connections between individual, community, and environmental responsibility. The teacher (Julia) believes, "Students learn to become a whole person, [and their] growth is more important – changes to environmental behaviour and environmental learning is a side effect, not necessarily the focus." Julia (in 2010) reported,

It [program mission] would be to foster partnerships with communities, to educate students about their environment so that they can make more educated decisions about their actions to teach through experience, and get them out of their desks a little bit more.

Students also experienced this, reporting, "rather than focusing on specific changes to environmental behaviour, [there is] more focus on developing character, critical thinking and creating awareness" (Brett). The principal talked about how students who do not necessarily "fit" with/in the traditional classroom structure find a pro-social and pro-learning environment in the ESP.

The Evolving Mission/Vision

The mission and vision of the program has evolved over the four-year study span. That evolution relates to the above theme. During her interview in the first year, the teacher was explicit that building community and promoting pro-social behaviours were the program goals: "Community is the base, the most important [goal], group cohesion has to take place before anything else does." In 2011, Julia asserted, " I'm totally focused on their character development, their leadership, what they have as individuals learned rather than focusing on environmental issues," going on to say that students integrate that on their own. This year (2012), Julia (teacher) stated,

What is emphasized is dictated by the students and what they need, where they want to take the course. Community, leadership, the environment – all have different weight depending on the cohort. This class was I would say more environmental than last year's class but not as much as the year before and way more than my first year.

The principal reported that Julia has progressively learned how to better put the mission and vision into practice. Data analysis also indicated that students are reporting more significant pro-environmental behavioural change, and more often, with each passing year. Examples of this

include early reports (2009) of increased recycling and decreased water use to the latest cohort of students (2012) now using terms like "green-washing" and "food security" in their reports about program impact. "Um I think that one of the unwritten teachings of this program was definitely growing up {Laughs} uh like developing a better sense of who you are and how your actions and what you say and what you do affect everyone else" (Eliza, 2011). In 2011, Sam said that, "Everything that we learned was to do with like you know the outdoors and the environment and leadership." In 2010, Mac said, "some of the teachers think that we are just fun and games." Grant said learning consisted of, "like traditional ecological [knowledges] and more of a native point of view as well." Matt said, "I expected this course to be outdoorsyesque, and I guess it is, but I didn't expect it to be as good as it was. I didn't know [Julia] was as knowledgeable in the woods and it has way, way surpassed my expectations." Other students from that same year expressed how they learned more from the ESP program than they had in any other class. Claudia concluded, "I found it really hard, and hard in a good way. I find I need to be pushed to do well and [haven't had that] in other classes previous to this."

 Early in program development, Krista (2010) reported that the program was about "developing a better sense of who you are and how your actions and what you say and what you do affect everyone else and about personal growth." This past year (2012) about 2/3 of the students, significantly more so than in previous program years, talked about the environment being at the centre of the curriculum. Julia chuckled in the interview, saying that she "gets it" better now, stating that the overall program goal is environmental justice.

Julia (2010) talked about how the *Specialist High Skills Major* provided not only funding but an opportunity to (re)vision after the first year, placing an emphasis on the value of reflection and critical thinking in working toward becoming a specialist and receiving some practical preparation (i.e. certifications). In 2011, Mallory said that the SHSM"was just hard for me 'cause I had like so much that I just kind of forgot about everything and so there's a lot of procrastination that went on." Julia went on to report about changes to the program after the first year, stating,

> There is more of an emphasis on diversity, especially the first nations, metis and inuit cultures because of this new [Ministry] English course ["Contemporary Aboriginal Voices"] coming in and being a part of it because of the kind of bursaries that are available for students and because of this unique cultural area that we are in with the number of metis students is unbelievable.

The principal (Naomi) reported in 2012 that,

> I think the recognition at the school board level [is beneficial]. I thought it would just be a nice program for our kids, but its, it has been highlighted a number of times, we have the greatest number of kids graduating with their *Specialist High Skills Major*, stamped on their diplomas because of this program so that has been really beneficial and highlighting us as a viable school. I know that [Julia] has become a resource for the other teachers in the board that are running these programs.

Naomi went on to talk about how the funding for the *SHSM* and the funding the school receives for offering "Contemporary Aboriginal Voices" has helped to keep the program viable during a time of overall "cuts."

The Teacher Adapting and Growing in Her Pedagogical Praxis

Julia said that figuring out what kind of teacher she wants to be has played a role in the mission/vision shift. She continues to struggle with balancing her own involvement and handing

over responsibility to students, saying, "Letting students drive their own journey, bowing out a little as a teacher so students can drive [the] class." The students this year (2012) stated, "We have heard from other students about previous years and we think she went through a process to 'get it right' this year." These student comments resonate with reports from first year program students. Bill (2009) reported, "I just feel unprepared for English next year because we didn't really do what we were supposed to… we did not follow the curriculum and I'll pay for that when I'm trying to get a job when I get older." Claude said, "Whenever we tried to say something to her that is against her thoughts we usually just get in trouble." Stan added, "Well the times that I've gotten in trouble she sends us to the hall so she doesn't have to talk to us as a group so everyone else sees what's happening to you…. it's horrible." Bridgette (2009) shared, "We didn't learn anything about conservation or about native oppression," [as she said we would]. Clare added, "I don't see what native oppression has to do with us as well as tar sands in Alberta or forestry and clear cutting… it just doesn't make sense" [what she is teaching].

Contrastingly, in 2011, Barb said, "The way we do our school work it's different than other classes...it's more of an adult setting rather than being teenagers…. She (teacher, Julia) understands where we're coming from like better than other teachers." In that same year, Julia herself reported, "I think using a positive leadership style as a teacher [has made a difference this year] and letting them have more choice….taking on the role of teacher and not friend but coach and trying to role model the right behaviours." In talking about the students, she said,

> And this particular class (2011) liked to call themselves in the beginning, 'The Difference' 'cause they really wanted to make a difference. Of course they were having trouble even handing in their assignments so it was really difficult for me to facilitate them making a difference.

Maya (2012) described it is a calmer learning environment compared to other classes, adding, "We do get our work done, but it's more fun." Grant (2012) said, [the program] is "actually like a pretty precious thing." Thomas talked about having learned as students and teacher from previous years' mistakes and challenges. Maya said, "I think she was really happy because we were like the class that worked." 3/4 of the students across all years talked about the structure and impact of reflective journaling and Julia talked about her more deliberate use of this overtime, confessing that aspects of that assignment still fell short of its full potential. Students expressed disappointment that more and timely feedback was not provided in their journals.

By year 2011, Julia asserted, "I hope that I taught them in some way or another to be good to the planet." According to the principal, "Julia has gotten good at setting expectations and setting the ideal stage for experience but then letting students take on experience, good or bad, and learning from it."

An Increase in Activist Leanings
In the past two years, students talked about how the program promoted personal change and led them to environmental activism, suggesting an increase in pro-environmental behaviours since the time of program commencement. This year (2012), with the program at risk due to budget cuts, students petitioned the Board through a letter writing campaign and students in that cohort self-identified as "little activists" (Bob, Judy, Cassandra, Mark). For Anne, "Seeing guest speakers as activists, learning from their example [made me] want to follow their example." Jeff said, "Seeing the efforts of getting involved in environmental law or protesting trees being cut, seeing how they effect change, [made me] want to follow in their [community members] footsteps." Martha, Brett, and Claire (2011) commented that they wanted to be "the changers."

Claire said, "You're trying to take everything you learned in this course and you're trying to apply it everywhere. 'Cause we all, I know we all want to be better in every way, especially with the environment. We all want to be those people that [effect] change." Mark (2011) reported:

> And I've never had any drive in any of my classes ever before and when I came into this class and everything that was being taught to me, everything that was happening, everything about the environment and local issues and like the coffee trade or what have you, really opened my eyes and it really changed me in a way that I, I needed to excel at this so I could educate my peers on, so personal change is a big part of it.

Eliza (2011) said, "I'd rather like buy a pair of shoes that I know aren't being made out of child labour." Mallory reported, "We did our environmental footprint thing and mine was pretty high so I noticed that I like use more energy. So I've like cut down on my shower time." In 2010, Gretta reported, "Vanessa is really big on the whole fair trade thing, she owns a lot of fair trade clothing and she's got shoes that look like Converse but are actually fair trade and yah she's pretty hard core about that." Claudia shared, "I know that one kid in the class Brett, after we watched the video Food Inc. he went vegetarian for a month and he's still trying to do it but it's hard." She added, "I definitely want to try that 100 mile diet… that Food Inc. documentary really got me."

Bob said, "I used to use my ATV like every day and I finally realized that I shouldn't be doing that (2010)." "I (Mark, 2010) pretty much changed my family around turning off lights around them." Grace (2009) also talked about the program influence on both her and on her family, stating, "I convinced my mum to plant a vegetable garden and I also I did an essay on genetically modified stuff and now she buys organic everything and organic soymilk because she's a health nut now." She went on to say, "[The program] gave me some perspective on the lack of morals that major corporations have."

Pip (2012) concluded, "Well, before I never realized how bad like just using a simple Kleenex, like what it's actually made from and how that forest is being destroyed for one single purpose." From that same cohort, students reported an increase in recycling and use of the green bin [compost], buying more locally-grown food, walking or biking instead of driving, a growing-knowledge of greenwashing, and the impacts of population growth on the environment. Robbie summarized, "I believe that it's like more possible to take actions on environmental things that aren't good, like standing up for [what] you believe in."

Julia [teacher] in her 2011 interview stated about the changing mission, "[more] environmental focus. Character education is [how] the course is being known by. ..the reason the students are taking it but they get all the other stuff and a lot of them like get into environmental job and ranger program stuff." Julia also talked extensively about the Ontario Ministry of Education *Specialist High Skills Major – the Environment* (SHSM) initiative, stating, "we are absolutely embracing this specialist high skills major." Julia talked about the importance of offering students certifications as a component of this initiative and about the financial support it provided for program development and cost effectiveness. The principal shared her observation that the students are "connecting personal change with environmental change" more and more. In 2011, Karl reported, "It's like we have like new environmental ethic, which I will use, we also have a leadership ethic, which I definitely use, I use on an everyday basis."

Discussion

Strong sense of community is foundational to group development (Mitten, 1999). In our study, it was clear that the formation of a pro-social group was key to environmental learning

and action resonant with relational social justice theorists. Stemming from the ideal of reciprocity, relational social justice theorists emphasize that the key to developing the kind of relationships that are capable of working toward justice, are those in which individuals recognize and accept differences among and between individuals (Fraser, 2003; Young, 1990). We hear evidence of this in the study results when students spoke about the importance of building community and turning initial feelings of intimidation into trusting ones. Certain years coalesced into a cohort of self-identified pro-environmental "difference-makers" (2011) or "changers" (2012) and activists as a result of these reciprocal relationships and the group trust that developed. According to Quimby and Angelique (2011), typical promoters of pro-environmental action include shifting social norms and a community of people taking action. In my study, being a group member, having a sense of belonging, being in a pro-social community, and hearing community members speak about pro-environmental change set the stage for students to engage in environmental action themselves.

Results from previous studies resonate with my study results, indicating that providing students with knowledge about the environment does indeed impact pro-environmental behaviours (Hsu, 2004; Kasapoglu & Turan, 2008). Alongside Kasapoglu and Turan, we are intrigued by the distinction between what they refer to as "general," "economy," and "domestic" environmental attitudes and behaviours. Pro-environmental behaviours run the gamut from notebook saving, caring for plants and trees, using a tissue, and turning off the lights when leaving a room (Kasapoglu & Turan). We see examples of these same behavioural changes throughout my study results.

In another study of observed environmental behavioural changes in university roommates, Chao and Lam (2011) examined what they referred to as "responsible" environmental behaviour and described five common types of reported changes including shutting down the computer and turning off the table lamp before leaving a room, avoiding free plastic bags from grocery stores, sorting garbage for recycling, and collecting small plastic bags for reuse. These types of "domestic" behaviours are cited most often in the relevant literature, which also resonates with my study results. Thus, in our continuing research into these programs, we intend to turn our attention to what kinds of knowledges and experiences might lead to more emancipatory actions.

The results of this study also indicated that some of the most impactful teaching – those teachings that compelled students to act pro-environmentally – resulted from guest lecturers who modeled and delivered messages that spurred students to wanting to be activists themselves. The role of the teacher was also impactful as she adapted and evolved her own pedagogical praxis and thereby refined the program mission and vision. It is well documented that a teacher's beliefs and values impact curriculum (Cotton, 2006; Brown & McIntyre, 1993). In our study, Julia (teacher) and the principal (Naomi) both reported how the program mission/vision evolved as Julia's own beliefs and values about the program were refined and clarified, in part, through teaching the ESP for those four years. Teachers new to teaching (as was the case here) are engaged in active experimentation and pedagogical growth and development as they teach. This growth and development is evidenced in students' reports that Julia "got it right" in year four and in Julia's own comments about "getting it."

Julia's commitment to continue to link action and practice is noteworthy. Freeland (2009) encourages pedagogues to merge the "thinking" orientation of theory and the "doing" emphasis of professional studies to enhance student learning (Freeland, 2009). Experiential approaches include simulations, case studies, media-based resources and field trips as components of this

form of pedagogy (Breunig, 2008). Teachers may wish to consider student processes and outcomes more closely in determining what methodological approach will further students' environmental knowledges and lead to pro-environmental behaviours.

Julia, for example, talked about her own growth and development related to delivering the Ministry curriculum in a non-traditional format and the design of assignments, with journals being one aspect of that discussion. Journals are often used as a component of experiential and environmental programs as a means to provide opportunities for students to reflect upon their experiences (Hammond, 2002). Journals can be an effective medium for facilitating reflection but are not necessarily and certainly not automatically so (Bennion & Olson, 2002; Hutson et. al, 2012). Their deliberate use as a pedagogical tool and form of assessment merits further consideration generally and in light of our study results. Students indicated that they did not always receive timely and insightful feedback in their journals and Julia (teacher) herself conceded that she could be more deliberate in the use of journals, both as a reflective tool and as a way to impel students to be explicit about their pro-social and pro-environmental intentions, perhaps inciting them to further action.

Interesting within my study results is the focus on the *Specialist High Skills Major – the Environment,* particularly as it relates to supportive funding for the program. There is a paucity of research related to the ways in which environmental educational policy impacts curricular initiatives. One study tracked the efforts of educators at nine different research sites within the United States, funded by a grant from the National Institute of Environmental Health Sciences (NIEHS), to develop and implement innovative interdisciplinary curriculum on the relationship of the environment and human health (Martina, Hursh, & Markowitz, 2009). The NIEHS concluded that the interdisciplinary nature of learning about environmental health would improve students' learning across several subject areas. However, these goals were undermined by state polices linking standardized tests with student promotion and graduation, and the federal No Child Left Behind Act (NCLB) resulting in school funding reductions, resonant with the impacts of the aforementioned deprioritization of environmental-oriented curriculum in Canada during this same era.

In a UK based symposium, environmental educators gathered together to discuss school-based environmental education and its potential as a vehicle for the promotion, understanding and implementation of sustainable development. According to that group, an important goal for education for sustainable development is to move education itself towards more participatory practices and political empowerment (Barraza, Duque-Aristiza'bal, & Rebolledo, 2003). Yet, no measure of this has been done. How to use environmental education research to inform policy and to understand the impacts of how educational policy impacts program efficacy remains an area of interest – one that has not yet been well-addressed, particularly as it relates to environmental education and sustainability.

Further research should explore those aspects of program delivery (e.g. teacher values and pedagogy) that most impact domestic and emancipatory behaviours as well as more individualistic and systemic ones. Working through/with/in these various factors in environmental education research is warranted as we continue to seek to identify outcomes and use these as a deliberate means to inform environmental education pedagogy (i.e. ESP program development) and policy.

In conclusion, I believe that as a researcher it is important to acknowledge my own subjectivity and positionality in conducting this research and how I impact the research process

and results (Pivnick, 2003). Has the program shifted in part as a result of our asking questions about the mission/vision and program goals? In our querying, have we overtly or inadvertently influenced the program? With the teacher knowing our epistemologies and activist leanings, does she respond in a certain manner? We are guessing so, and this needs to be further problematized as we continue to engage in this work.

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