STARTING POINT:
A COMMUNITY OF PRACTICE FOR CANADA'S ENVIRONMENTAL EDUCATION NETWORK LEADERS

By

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Abstract

A qualitative study using an action research methodology was conducted to observe what value a national community of practice (CoP) had for the resiliency of Canada’s geographically dispersed, non-profit, environmental education (EE) network leaders. Research suggests that North America’s non-profit sector faces a looming leadership crisis as its executive leaders are subjected to escalating anxiety, burnout, and feelings of isolation (Cornelius, Moyers, & Bell, 2011). Peer support networks, alternately known as a CoP, have been proposed as a potential means of sustaining such beleaguered executives. This research reveals that Canadian EE leaders found value in a CoP as a forum for networking and relationship building, as a medium for professional development, and as a source of support and inspiration. This thesis recommends the establishment of a national CoP for Canada’s EE network leaders and outlines recommendations to inform the creation of such a community.
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“Some connections are inevitable. Given enough time and networking, some people are bound to meet and find that they share a passion.” (Wenger, McDermott, & Snyder, 2002, p. ix)

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A Starting Point

Every research journey has a starting point. Mine began in 2009, at the annual conference of the North American Association for Environmental Education (NAAEE) in Portland, Oregon. As the name implies, the NAAEE is an association, or network, that connects and supports environmental education practitioners across the United States, Canada, and Mexico. Each year, hundreds of environmental educators descend on a new city to learn about the latest research, discover new curricula, and network with their peers. Portland was my first NAAEE event and I was very excited to attend, not just for the conference itself, but particularly for the two-day gathering of the Affiliate Network which preceded the main conference.

The Affiliate Network (AN), as the name does not explicitly imply, is a network of networks. It is an association, or a guild, of the leaders from many state, provincial, territorial, and regional environmental education (EE) networks which promote and support EE across North America. Through annual AN gatherings and online networking tools, leaders develop relationships with their industry peers, share knowledge, swap stories, and benefit from each other’s experience and expertise. In layman’s terms, they learn from and provide support to each other. In academic terms, they form a community of practice (Lave & Wenger, 1991).

Before attending the AN gathering, I had been completely unaware of both the existence of the AN or even the concept of a community of practice (CoP). Although I was the executive director (ED) of a regional EE network in south-east British Columbia called the Columbia Basin
Environmental Education Network (CBEEN), I had no knowledge that similar EE networks existed in other regions across North America. The AN gathering introduced me to a broad network of EE leaders and demonstrated the value of a supportive community of peers who freely, willingly, and voluntarily share their knowledge and support.

There was only one problem: although the AN purports to be a tri-national organization (Price, 2012), in reality there are very few members from either Mexican or Canadian networks. This gives the AN a decidedly American flavour which, while not unwelcoming, does not always meet the professional needs of its non-American members. Therefore, although my experience with the AN was positive, I began to wonder whether Canada’s EE network leaders would find value in establishing our own national CoP. I recognized that a Canadian network would have to start somewhere and I hoped that this thesis project could be that starting point.

To discover the value of a Canadian CoP, a temporary community comprised of environmental education (EE) network leaders from across Canada was created. In collaboration with these peers, an action research project (Dick, 1993; McNiff, 2002; McNiff & Whitehead, 2002; Reason & Bradbury, 2001) was conducted through which knowledge and experiences were shared, support was provided, challenges and solutions were discussed, and identities were reflected upon in the hopes of improving our praxis.

The following thesis reports on the research conducted to answer the question: What value does a community of practice have for Canadian environmental education network leaders? The story of this thesis journey will be told in five chapters. Chapter one is an introduction to the study, providing background information about the research question, its significance, and my research perspective. Chapter two is a literature review, presenting and
discussing critical research on topics relevant to the study. Chapter three presents the research methodology, explaining the research design and rationale, methods of data collection and analysis, and the study’s limitations and delimitations. Chapter four presents the findings of the research, while chapter five discusses the relevance of the findings and offers recommendations for immediate action and for future research.

**Statement of the Research Question**

Across North America the leaders of EE networks face the challenge of coordinating sustainability education from within a potentially unsustainable non-profit business model which generates stress and anxiety and often leads to burnout (Pallotta, 2008). Dozens of regional networks for environmental educators exist throughout Canada and the United States. These networks, or professional associations, differ in size and scope, yet they have many common objectives: connecting practitioners, developing capacity, distributing educational resources and inspiring innovative practice (Price, 2012). They also face similar challenges. Research by Cornelius, Moyers, and Bell (2011) and the Human Resource Council for the Non-Profit Sector (2012) demonstrates that most non-profit societies are managed by executive directors who enjoy their jobs yet experience high levels of stress and anxiety, leading to burnout and high rates of attrition.

American and Canadian studies both suggest that the non-profit sector is facing a human resource crisis as leaders become increasingly overwhelmed with the enormity of their responsibilities (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012). One American executive director summarized his experience in this way:
I don’t know if I’d call it burnout but more panic. The 3:00am stuff for me is, my gosh, how are we going to find the money? And the feeling that it’s very personal. That it will reflect on my leadership, but also that it will affect people who are doing really amazing work – people who I don’t want to let down. More important than my own ego is that. I think what I am really talking about is fear. (Cornelius, et al., 2011, p. 5)

Similarly, a Canadian executive director admitted that, “There is a lot to juggle. I’d say on the stress scale, my stress is very high. There is a lot of worry about financial challenges, and need for services has grown. It is always stressful” (Human Resource Council for the Nonprofit Sector, 2012, p. 30).

Admissions of panic and stress are largely representative of the key findings in both the American and Canadian studies (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012). Worryingly, the Canadian study goes on to state that almost half of leaders are, “experiencing levels of day-to-day stress that are excessive or approaching excessive [and those] with higher levels of stress are more likely to indicate they will leave their current job earlier than those with lower levels of stress” (Human Resource Council for the Nonprofit Sector, 2012, pp. 30-31). With high stress and impending worker attrition being such common denominators among non-profit executive leaders, one would assume that the boards running non-profits would have plans in place to deal with the fallout. Alarmingly, the same studies also found that most boards do not (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012).

Tierney (2006) has written that unless strategies can be implemented to support and sustain executive directors, non-profits face a looming leadership deficit. This burgeoning
human resource crisis will impact charitable organizations across many spheres, but it presents a unique challenge to the EE sector in particular. In this era of global ecological degradation (Intergovernmental Panel on Climate Change, 2007) the need for EE has never been so great. However, when the non-profit leadership crisis rubs up against the ecological crisis, what emerges is a dire consequence: a diminishing pool of effective environmental leaders at precisely the moment when the world needs them most.

In spite of these challenges, a solution may be within reach. An American longitudinal study entitled *Daring to Lead* (Cornelius, et al., 2011) has studied the challenges facing non-profit executive leadership for over a decade. One of the conclusions from their 2011 report was that, “peer networks, both formal and informal, were especially effective for decreasing feelings of isolation and norming the trials and tribulations of the [ED] role” (p. 12). An increasingly popular term for peer networks is communities of practice, a term coined by Lave and Wenger (1991) to describe a learning community consisting of “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, & Snyder, 2002, p. 4).

The NAAEE’s Affiliate Network has evolved as an increasingly effective community of practice for its predominantly American member networks since the 1990s (Price, 2012). Canada, however, lacks its own CoP to support information sharing and capacity building among its regional, territorial, and provincial EE network leaders. The Canadian Network for Environmental Education and Communication (EECOM) has discussed forming such a community, but capacity limitations have thus far hindered any substantial progress (N. Swayze, personal communication, September 30, 2012). As a result, EECOM’s Associate Network is not
nearly as well defined or subscribed to as the NAAEE’s Affiliate Network. EECOM has hosted a few Associate Network gatherings at their annual conferences, but few network leaders have attended and there has been no significant follow-up. As a result, Canadian EE network leaders still lack the important peer networking opportunities which benefit their American peers.

This research project was created to investigate whether a community of practice would be valuable for Canadian EE network leaders. The aim was to find out if a national CoP would help build capacity, alleviate burnout, and foster a more dynamic and resilient alliance of leaders. If so, then this research could be used to argue for the creation of a CoP for Canadian EE networks leaders and provide recommendations that would facilitate the development of such a community. If not, then lessons could be learned from the process, which could help in the design of a more viable alternative. In the short term, this project provided a space where each participant (myself included) could reflect on their vocation and potentially discover ways to improve their praxis and maintain their own well-being.

While there is widespread literature explaining the concept of communities of practice (for example, see Guldberg & Mackness, 2009; Li et al., 2009; Snyder & Wenger, 2004; Wenger, 1998b; Wenger, et al., 2002), and a growing literature which reviews how these concepts are being applied in various types of communities (for example, see Douglas, 2010; Kimble, Hildreth, & Bourdon, 2008a, 2008b; Rowan, 2006; Shacham & Od-Cohen, 2009), there have been no known studies of how Canadian environmental education network leaders make use of a CoP or what value they find in the process. I designed this study in order to fill this gap in the research. My study was inspired and informed by Wenger et al. (2002) who explained CoP theory and practice. Further inspiration came from Wenger, Trayner and de Laat (2011)
and Lesser and Storck (2001) who explore theories of value creation and social capital creation which is essential to communities of practice. The study was further informed by my own experience as a Canadian EE network leader, by lessons learned from my engagement with the NAAEE’s Affiliate Network and EECOM’s fledgling Associate Network, and from research that outlined the benefits (and challenges) of establishing a successful peer network, or community of practice, for non-profit leaders.

**Researcher’s Perspective**

From 2005 until 2012, I was the executive director of CBEEN and, like many non-profit leaders, I came to the profession from an unrelated professional background, and with no proper training in non-profit management (Bell, Moyers, & Wolfred, 2006; Peters & Wolfred, 2001). My early years were particularly challenging: I was on a steep learning curve, worked in isolation, had no real training, and received limited direction from a well-meaning but disengaged board of directors. For the first few years, I was the organization’s lone staff member, responsible for raising funds and coordinating programming for an EE network that served 300 members across an enormous geographic area. To top it off, I worked on a part-time contract. While I enjoyed my job and believed strongly in our network’s mission, I had grave concerns that my inexperience in non-profit management would lead to the demise of our network.

Although I did not identify it as such at the time, what I was missing was a mentor, or a group of mentors. What I required was a community of practice: a cohort of peers who were engaged in the same domain, who would readily share their expertise and experience with me, and with whom I could discuss and develop a set of best practices for our sector. Instead, and in
my naiveté, I assumed that CBEEN was the only professional EE network, and that I was the only non-profit leader struggling with his praxis. I felt ineffectual at my job, emotionally burdened by the gravity of the environmental crisis, and sometimes so anxious and overwhelmed that I was ready to quit.

My discovery of the NAAEE’s Affiliate Network, in 2009, profoundly improved my work efficiency and overall job satisfaction. The AN was originally conceived of in 1990 at a NAAEE conference and, as of 2011, had representatives from “53 known state/provincial/regional associations” (Affiliate Network Steering Committee, 2011a, p. 1). AN members meet regularly (both face-to-face and via conference calls) to discuss their work, share information and resources, and sometimes collaborate on larger projects. Through the AN I met dozens of other EE network leaders from across North America (executive directors, board representatives, staff, and volunteers) who struggled with similar challenges and who had banded together to support and learn from one another. Between 2009 and 2011, I attended several AN gatherings and subsequently became a contributing member of an immensely supportive community of practice. (Even after changing professions in 2012, I have maintained close contact with several of my former peers.)

I benefited greatly from my interactions with these EE leaders and soon recognized that my colleagues were equally benefiting from my contributions to our collective brain trust. Coming from different backgrounds, and with different levels of experience in non-profit management, we had much to teach and learn from one another - from fundraising and project management, to programming and board governance. There was also an enormous social benefit to engaging with peers who shared world views and who had similar aspirations. However, as
noted above, there was just one problem: the vast majority of AN members were from American EE networks and there was a growing realization that many of the issues they discussed – particularly with regards to federal funding, legislation, and policies – were not relevant to Canadians. The recognition of these tensions was the catalyst for this research project to assess the value of a CoP for Canadian EE network leaders.

**Researcher’s Bias**

Before moving on to my literature review, I should acknowledge that I come to this research project with a few biases. First, as the former ED of a Canadian regional EE network I bring to this research my own perceptions of the challenges facing EE network leaders, both organizational and emotional. I recognize that my lack of experience in non-profit management may have made my experience more difficult than others in similar positions. I also recognize that both as a person and a parent I have very strong feelings about the state of the environment and these emotions may impact me to a different degree than other leaders.

Second, as a former participant in the NAAEE’s Affiliate Network, I bring my own thoughts and feelings about the value a community of practice can play both for individual leaders and for the sponsoring organization as well. I had a very positive experience from my engagement with the AN CoP, yet I recognize that the value I perceived in the AN may not be shared equally by all members.

Finally, as the steward of this research project I recognize that I had my own agenda, both academic and professional, for carrying out this research. As a Master of Arts student I was as focused on satisfying the academic requirements of my program at Royal Roads University as I was on making a contribution to CoP theory. From a professional perspective, I also
acknowledge that I was hoping to demonstrate a need for a CoP so that I could possibly take on the role of a national CoP coordinator for EECOM. By recognizing and admitting to these biases at the outset I hope to add credibility to my research.
CHAPTER TWO: LITERATURE REVIEW

“Literature is the question minus the answer.” (Barthes, 1972, pp. 202-203)

The following literature review analyzes and summarizes the academic literature and places my research within a theoretical context. The review will focus on two important aspects of this study: the organizational challenges of the non-profit sector, and communities of practice. An examination of the challenges faced by non-profits will serve to illuminate where barriers exist, whereas an exploration of communities of practice theory and practice will identify this peer networking tool as one potential solution.

Organizational Challenges of the Non-Profit Sector

Research demonstrates that non-profit organizations face a growing catalogue of organizational challenges, many of which directly and adversely impact the well-being of their executive directors, or staff members in equivalent leadership roles (Bell, et al., 2006; Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012; Peters & Wolfred, 2001; Tierney, 2006). According to Tierney (2006), there is a growing crisis associated with recruitment and sustenance of effective leaders, with increasingly short tenures caused by early burnout becoming alarmingly commonplace. Tierney (2006) notes “[e]ffective leadership is at the heart of every innovation and every bit of progress the nonprofit [sic] sector makes. Yet we consistently and habitually neglect the sector’s most valuable resource: its people” (p. 33). Unless effective strategies are implemented to sustain the people who spearhead these vital
social change organizations, the non-profit world will soon face a critical leadership deficit (Cornelius, 2011; Human Resource Council for the Nonprofit Sector, 2012; Tierney, 2006).

Over the last decade, three consecutive studies have provided valuable insight into non-profit executive leadership trends and challenges in America (Peters & Wolfred, 2001; Bell, Moyers, & Wolfred, 2006; Cornelius, Moyers, & Bell, 2011). A similar study of Canadian non-profit executive leaders demonstrates many of the same challenges exist on this side of the border (Human Resource Council for the Nonprofit Sector, 2012). Recurring themes illuminate an interesting paradox: although most executives state they “are very happy in their jobs...[and] believe they are effective in all areas of leadership” (Cornelius, 2011, p. 1), there is broad recognition that non-profit leaders struggle with stress, long hours, isolation, and anxiety over finances, fundraising, human resource, board governance, and other issues. While their contentment may demonstrate the optimism of many non-profit leaders, it also reveals some important and inherent tensions in the charitable sector.

The most recent report from the American longitudinal study reveals three key findings based on research with over 3000 non-profit executive directors (Cornelius, et al., 2011). First, although the recent global recession has slowed rates of attrition, leadership turnover remains high, and most non-profits are ill-prepared to recruit and “support” (p. 2) new leaders. Second, the recession has increased leaders’ “anxiety and...frustration with unsustainable [non-profit] financial models” (p. 6). Finally, and surprisingly perhaps in the face of adversity, “nonprofit executives remain energized and resolved” (p. 9).

The Canadian study reveals nine key findings based on research with 1251 non-profit leaders (Human Resource Council for the Nonprofit Sector, 2012). It is perhaps unsurprising
that many of the Canadian findings align closely with those from the American study. First, in spite of the challenges they face, most executive directors are very satisfied with their jobs. Second, within four years “over half” (p. 4) of them will leave their positions. Third, board support is critical for leadership “satisfaction and retention” (p. 4). Fourth, executive leaders receive, “the least support for the most challenging tasks” (p. 4). Fifth, high levels of stress are very common in the role. Sixth, only “four in ten” (p. 5) leaders state they are likely to continue working in the non-profit sector when they leave their current positions. Seventh, leaders are motivated to work in the sector because of, “the mission of the organization and the ability to make a difference” (p. 5). Eighth, although high financial compensation is not a primary motivator for leaders, it does motivate retention. Finally, the study finds that the most important attributes that executive directors need to possess are “leadership skills” (p. 5).

While both the American and Canadian studies revealed that most executive leaders are satisfied with their jobs, the research also identified significant challenges. Leaders are overworked, feel isolated and anxious, and do not receive the ongoing support and training they need to perform their jobs effectively. Meanwhile, boards are unprepared to deal with the impending leadership crisis they face as their executive directors retire or move on to better paying or less stressful jobs.

Last but not least, the organizations themselves are constrained within a frustratingly unsustainable non-profit business model. As a Harvard business school professor opined, “the nonprofit sector suffers from the distinction of being the only sector whose name begins with a negative” (Pallotta, 2008, p. 4). While a CoP cannot be a panacea for all the weighty issues
facing non-profits and their leaders, a closer examination of some of these dilemmas may illuminate areas where such a learning community could relieve some of the burden.

**Time Deficit.**

The literature reveals that many executive leaders experience high levels of stress and anxiety because they have too many things to do and not enough time to do them (Cornelius, 2011; Human Resource Council for the Nonprofit Sector, 2012; Pallotta, 2008; Tierney, 2006). Kanter and Fine (2010) have described the work of nonprofits as “Sisyphean” (p.13), noting, “operating at a constant state of panic exhausts people” (p. 13). This makes sense when one appreciates the various and complex duties of an executive director. Their responsibilities typically include such diverse and specialized tasks as fundraising, program/project coordination and management, member and stakeholder outreach, marketing and communications, budgeting and financial management, reporting to funders and stakeholders, human resource management, board governance, and a variety of other miscellaneous administrative duties (Cornelius, 2011). With so many competing priorities, it may be difficult to systematically and effectively direct one’s efforts. As one leader astutely explained, “the currency of leadership is attention. If you have currency, you have to invest it; you have to make choices” (Cornelius, 2011, p. 4).

Leaders continuously make choices about how to invest their time, but they are not always easy decisions to make. Cornelius (2011) reports that the tasks which bring leaders the most job satisfaction are both the ones they never have enough time for, and the ones that are most critical for organizational sustainability. For example, most leaders felt that, “working externally with partners and collaborators is the most energizing aspect of the executive role” (p.
1), yet 52% stated they did not spend enough time on critically important elements of their jobs such as “networking and partnerships” (p. 3). The fact that they do not have time to do the critical aspects of the job is even more alarming when it is revealed that 52% of non-profit leaders report working more than 45 hours per week, and 17% state they put in more than 50 hours per week (Human Resource Council for the Nonprofit Sector, 2012).

The perceived time-deficit that impacts so many leaders, and the apparent need to work such long hours, may be a direct result of working for organizations that are perpetually understaffed (Pallotta, 2008). Kanter and Fine (2010) note, “[w]e know nonprofit staff often feel overburdened, with too much pressure on too few people to do too much” (p. 3). For example, a survey conducted by the NAAEE’s Affiliate Network found that 25 of their 47 affiliated state, provincial and regional EE networks (or 53%) were run strictly by volunteers, while the other 22 networks had between one part-time and six full-time paid employees (Affiliate Network Steering Committee, 2011b). Of those 22 networks with paid staff, 13 had one or fewer full-time staff, demonstrating that a majority (59%) of North American EE networks are reliant on either volunteer labour or one over-stretched executive director (Affiliate Network Steering Committee, 2011b). Unfortunately, staffing decisions are reliant upon available funding, and in the non-profit world funding is always scarce (Pallotta, 2008). However, if executive leaders cannot work longer hours to complete all their tasks, and money does not exist to hire more staff, perhaps they need to find new ways to make more efficient use of their time.

**Lack of Support.**

The list of challenges facing non-profit executives is long and well documented, including inexperience and isolation, stress and anxiety, dissatisfaction with boards of directors,
the recession, staff shortages, no succession planning, funding scarcity, increasingly complicated reporting requirements, and more (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012). The literature also reveals that leaders are not receiving the quality or quantity of support they require to be effective and resilient leaders in the face of this adversity (Bell, et al., 2006; Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012; Peters & Wolfred, 2001; Tierney, 2006).

Boards of directors appear to be well aware of this dilemma: when surveyed about the biggest challenges to retaining their executive directors, 39% admitted, “the level of stress associated with the job” and another 29% said, “being able to ensure a good work-life balance” (Human Resource Council for the Nonprofit Sector, 2012, p. 17). The unfortunate consequence, as predicted by Tierney (2006), is a looming “leadership deficit” (p. 26) brought on by a perfect storm of retiring baby-boomers, burned-out younger leaders, and a non-profit sector growing so quickly that between 2007 and 2016 it will need to replace “2.4 times the number [of leaders] currently employed” (p. 28).

**Risks for Organizations.**

The looming leadership dilemma poses an additional and insidious risk to non-profit organizations: the loss of an executive director may initiate a downward spiral, which impacts the very existence of the organization. This happens for two key reasons: first, most boards lack succession plans, and second, many executive directors hold, by default of working in isolation, a virtual monopoly on institutional knowledge and history (Human Resource Council for the Nonprofit Sector, 2012).
Because many nonprofits are understaffed, and boards are comprised of well-meaning but busy volunteers, it is common for executive directors to be the sole keepers of institutional knowledge. This poses a dangerous dilemma for organizations if and when an executive decides to retire or move on to other employment. As one executive bluntly stated, “There is no succession planning happening at a senior level. When leaders leave, all the knowledge leaves” (Human Resource Council for the Nonprofit Sector, 2012, p. 18). In order to sustain their organizations, non-profits must do everything in their power to plan for succession and to steward the knowledge base of their organizations. Of course they should also focus energies on finding ways to support and sustain the leaders they already have in place.

**Manufactured Competition.**

The final challenge to non-profit organizations that will be discussed is that funding constraints lead to an atmosphere of competition among organizations pursuing similar goals (Kanter & Fine, 2010). Kanter and Fine (2010) argue that over the last few decades a sense of competition has arisen among non-profits causing, “organizations to consider everyone else competitors” (p. 12). The reasons are understandable. First, the rise of paid staff: hired as “expert managers” (p. 12), paid staff feel the need to prove themselves as more capable than the volunteers they have replaced. Second, the shifting demands of foundations: increasingly, private foundations are shifting their financial support away from small, local non-profits to “professionally staffed organizations” (p. 12). Finally, the shifting priorities of boards and funders: as success is redefined in terms of “staff and budget growth” (p. 12) non-profits are pressured to raise increasingly large amounts of capital to fuel their growing operations.
The consequences of this manufactured competition are a negative feedback loop which impacts the well-being of non-profit organizations and their leaders: the constant need to grow to prove their worth forces executive directors and their organizations into competition with fellow non-profits pursuing the same limited pots of funding from foundations who increasingly only fund organizations that demonstrate growth. The result, according to Kanter and Fine (2010), is that, “[n]onprofit organizations stopped reaching beyond their borders to engage in real problem solving with other organizations and individuals” (p. 12). This manufactured competition inhibits the very knowledge sharing that may help to ease the burden faced by executive directors.

Possible Solutions.

Although the Canadian study of executive leadership does not provide any recommendations, the American study does. Cornelius et al. (2011) present four key recommendations to help support and sustain non-profit executive leaders. First, they suggest that organizations need to “plan for successful transitions” (p. 14). Second, they highlight the need to “advance understanding of nonprofit financial sustainability” (p. 15). Third, they suggest the need to “expand and diversify the professional development options available to executive directors” (p. 15). Finally, they report a need to “find new ways to improve the performance and enhance the composition of boards” (p. 16).

While all four of these recommendations have merit, the suggestion that non-profits expand and diversify professional development options for leaders is particularly relevant to this study. Cornelius et al. (2011) found that executive directors have different professional development challenges and needs depending on a variety of factors, including the size and
scope of their organizations. They concluded that executives, boards, and their funders need to develop a “more expansive definition of professional development” (p. 15) and suggested that implementing “peer networking or mentoring opportunities” (p. 16) might be beneficial ways to accomplish this goal. This aligns well with their research that demonstrated that, “peer networks, both formal and informal, were especially effective for decreasing feelings of isolation and for norming the trials and tribulations of the role” (p. 12). In fact, their research revealed that 82% of respondents considered peer networks to be either an “effective” or “very effective” (p. 12) means of professional development. This data strongly suggests that a peer network, such as a community of practice, may prove particularly valuable for Canadian EE network leaders.

**Communities of Practice**

While the general concept of a community of practice is quite simple, providing a definitive definition of a CoP is no simple task. Although Lave and Wenger (1991) coined the term community of practice, the informal knowledge sharing communities they describe have existed as long as people have gathered to exchange ideas and information (Wenger, 2006). As CoP theory has spread across the globe, both practitioners and academics - Lave and Wenger included - have modified the definition to meet evolving needs, and their understanding, of the CoP model (Coakes & Clarke, 2006; Iaquinto, Ison, & Faggian, 2011; Li, et al., 2009). At various times CoPs have been defined as, “informal learning organizations” (Li, et al., 2009, p. 2), a “social learning system” (Wenger, 2010, p. 1), and a “self organizing systems of informal learning” (Gray, 2004, p. 23). Lesser & Storck (2001) describe them as, “a group whose members regularly engage in sharing and learning, based on their common interests” (p. 831). Finally, although the list could go on, Wenger et al. (2002) offers the definition that most clearly
describes the phenomenon as it relates to my research: “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p. 4).

What is a Community of Practice?

Wenger, McDermott and Snyder (2002) offer three defining characteristics of a CoP: a shared domain, community, and practice. Domain refers to a shared curiosity and competence in a domain of interest common amongst members, i.e. their concern, passion, or in the case of my research, their vocation. Community refers to the shared space – online, offline, or combination thereof – in which members “interact and learn together” (Wenger, 2006, p. 2) on a regular basis. Practice, as noted above, is a reminder that members of a CoP are not just people interested in a particular domain but rather practitioners who “develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice” (Wenger, 2006, p. 2). Accordingly, although it is quite common for people who share an interest or vocation to network, discuss ideas, or share resources, Wenger et al. (2002) argues that a true CoP does not exist unless all three elements of domain, community, and practice are present.

At the root of all communities of practice is the word community, a term used to describe groups of people bound by some meaningful common denominator. Members of a community may share a geographic location, heritage, culture, or other common factor and “define their identities by the roles they play and the relationships they share in the group’s activities” (Li, et al., 2009, p. 3). The addition of the word practice emphasizes the community’s active engagement with the characteristic that binds them together. In contrast to people who might just have something in common, a community of practitioners suggests a group of people who
engage, in a meaningful and focused way, to improve, discuss, or better comprehend the factors that unite them. In this sense, a CoP can be understood as a “learning partnership” (Wenger, et al., 2002, p. 3) in which members use each other’s “experience of practice” (Wenger, et al., 2011, p. 3) as a learning resource to make sense of and address challenges they face individually or collectively.

The literature demonstrates that CoPs are valuable and effective tools for peer networking and support (Goland, 2005; Gray, 2004; Hughes-Adams, 2010; Maginley, 2008; Miller, 2008; Rowan, 2006; Wenger, et al., 2002). Gray (2004) conducted research with an online CoP for geographically isolated coordinators of Alberta Community Adult Learning Councils. She found that participants believed sharing information and connecting with their peers “made their job easier” (p. 25) and that engaging in an online CoP was valuable “to feel connected to other coordinators and to reduce the isolation that was inherent in their job function” (p. 25).

Similarly, Hughes-Adams (2010) explored the implementation of a pilot CoP at the BC Ministry of Education, and found that “learning communities are a means for members of an organization to contribute their professional expertise, enhance their feelings of connection to others, and improve their collective and individual learning” (p. 115).

Wenger (1998b) argues that CoPs, as a theoretical framework, are tied to the social dimensions of learning, asking, “[w]hat if...we assumed that learning is, in its essence, a fundamentally social phenomenon, reflecting our own deeply social nature as human beings capable of knowing?” (p. 3). By stating this, he places himself within the camp of social learning theorists who have long recognized humans as intrinsically social beings that absorb and create knowledge through their social interactions (Vygotsky, 1978). A solid base of literature
demonstrates that Wenger was correct: social learning can and does take place within CoPs (Cambridge, Kaplan, & Suter, 2005; Coakes & Clarke, 2006; Gray, 2004; Gunawardena et al., 2009; Hew & Hara, 2006; Wenger, 2000). It is “a perspective that locates learning, not in the head or outside it, but in the relationship between the person and the world, which for humans is a social person in a social world” (Wenger, 2010, p. 1). The conceptual basis for this study is therefore informed by the theoretical perspective that people learn through and as a result of social interactions rather than by a “planned mechanistic process of cognitive transmission” (Cox, 2005, p. 4). This perspective rationalizes my own experience as an EE network leader and provides a tool (the CoP) to explore what value can be found in the social learning experience.

**CoP Design Considerations.**

Whereas communities of practice traditionally arose among people living within close proximity, today we can join, and even create, CoPs wherever we are. Satellite communications and the internet have, for the most part, eradicated borders and simplified the process of seeking out would-be members and sharing information anywhere in the world. This technology does not eradicate the usefulness, or the need, for co-located CoPs, but it does provide opportunities for communities to arise wherever they are needed, and to survive wherever they provide value to their members (Wenger, White, & Smith, 2009). Whether a CoP is co-located, virtual, or a combination of the two, it is important to consider certain design elements that will help a CoP flourish.

Cambridge, Kaplan, and Suter (2005) differentiate between the “technical architecture” and the “social architecture” (p. 2) of a CoP. Technical architecture is the technology that drives the community and facilitates communication within an online ecosystem. This can manifest
itself through media such as conference calls, email, or a wiki (as it did in this research), or via other web-based communications technologies. Conversely, social architecture can be understood as the processes in place which facilitate engagement and rapport among participants. It is the elements of community structure, which gets members excited about participating and which fuels their desire to remain active members of the community.

Design choices can have an important impact on the success of a CoP. Kaulback and Bergtholdt (2008) argue that an appreciation of design elements is particularly critical to the success of an online CoP, stating that,

> effective and successful online CoPs, do not happen without attention to their design, launching, and support. As in face-to-face communities, simply providing a room and inviting people in does not create an engaged community; putting up shelves and filling them with books does not produce knowledge. (p. 26)

On the other hand, Wenger (2001) argues that although technical architecture has an important role to play, social architecture is a more pressing priority for CoP design:

> Experience has shown over and over that what makes for a successful community of practice has to do primarily with social, cultural, and organizational issues, and secondarily only with technological features. It is more important, therefore, to address these social, cultural, and organizational issues than to seek endlessly for the perfect technological platform. (p. 45)

A closer look at technical and social architecture considerations will provide a deeper understanding of how design choices can foster social learning and value creation in a CoP.

**Technical Architecture.**
The literature recognizes the important role that effective communication technologies play for CoPs, and particularly for virtual CoPs (Gannon-Leary & Fontainha, 2007; Gray, 2004; Gunawardena, et al., 2009; Hew & Hara, 2006). After all, online CoPs exist to meet the needs of practitioners whose geographic isolation severely - sometimes absolutely - limits opportunities for face-to-face interaction. In these situations CoP members rely on an efficient “medium for negotiating meaning” (Gray, 2004, p. 32), and it is incumbent upon CoP designers and stewards to choose technology wisely.

While it is beyond the scope of this thesis to survey the available (and ever-expanding) technological options, it is worth noting that lack of familiarity with, trust in, and access to, online communication technologies have repeatedly been identified as critical barriers to participation in online CoPs (Gannon-Leary & Fontainha, 2007; Gray, 2004; Hew & Hara, 2006; Hoffmann, Desha, & Verrall, 2011; Rowan, 2006). This would suggest that a successful online CoP will need to spend some time orienting its members to its technical architecture, and ensure that all members can participate on a level playing field.

Another important aspect of a CoP’s technical architecture is its ability to facilitate both synchronous and asynchronous communication (Wenger, et al., 2002). Synchronous communication can be understood as face-to-face meetings, conference calls, or video conferencing where members communicate in real time. Asynchronous communication plays with the element of time, providing tools such as online message boards or a wiki page where members can ask questions or leave answers on their own schedules. Recognizing that CoPs are, by their nature, populated by volunteers (Wenger, 1998b; Wenger, et al., 2002), the ability to facilitate asynchronous communication makes virtual CoPs very attractive for busy professionals.
who may not always have the time to attend face-to-face gatherings or even attend conference calls.

It should be noted that purely web-based communities have their own drawbacks. A community that relies solely on asynchronous communication, “lack[s] the richness of face-to-face interaction” (Gannon-Leary & Fontainha, 2007, p. 5) and does not foster the personal engagement which is so critical to a CoP (Wenger, et al., 2002). Another danger for a purely asynchronous CoP, “is its timelessness. It is always possible to participate, but by the same token, there is never a special occasion to participate” (Wenger, 2001, p. 48). Bearing this in mind, the most valuable type of CoP appears to be one that incorporates both synchronous and asynchronous methods of communication.

**Social Architecture.**

Wenger (2001; 2002) and others (for example, Gannon-Leary & Fontainha, 2007; Iaquinto, et al., 2011; Lesser & Storck, 2001) argue that the most important aspect of CoP design is its *social* architecture. Remember, the social architecture of a CoP determines how readily and excitedly members engage and interact with each other. Wenger et al. (2002) suggest that many CoPs fail because they lack sufficient “aliveness” (p. 50) to sustain interest. As an antidote, communities “need to invite the interaction that makes them alive” (Wenger, et al., 2002, p. 50). Similarly, Iaquinto et al. (2011) found that “enthusiasm” was a driving factor and that its “presence or absence...determines the success of a CoP” (p. 17).

One way to establish aliveness in a CoP and create value for members is to ensure there exists a common sense of purpose (Wenger, et al., 2002). A CoP’s purpose is its domain, or *raison d’être*, and a shared understanding of that domain facilitates an awareness of, and a focus
on, discussion topics that truly matter to the community and encourage lively participation.
Cambridge et al. (2005) argue that, “All design choices (for technical or social architecture) must be driven by purpose, so community purpose is paramount” (p. 2). Similarly, Wenger et al. (2002) suggest that a shared sense of purpose, “is what brings people together and guides their learning. It defines the identity of the community, its place in the world, and the value of its achievements to members and to others” (p. 31). The domain must both unite and inspire members and also be strategically relevant for its host organization (Cambridge, et al., 2005; Hew & Hara, 2006). In sum, a community will thrive and succeed best when, “the goals and needs of the organization intersect with the passions and aspirations of the participants” (Wenger, et al., 2002, p. 32).

Another critical aspect of social architecture for creating value in a CoP is the development and stewardship of social capital (Chiu, Hsu, & Wang, 2006; Daniel, Schwier, & McCalla, 2003; Lesser & Storck, 2001). Researchers consider “social ties to be a social resource” (Daniel, et al., 2003, p. 2) and this resource is known as social capital. Social capital can be understood as the pre-existing or developing social ties among CoP members, and the impact that these networks have on engagement and participation within the community (Daniel, et al., 2003). Chiu, Hsu, and Wang (2006) have identified the greatest dilemma facing virtual CoPs as, “the willingness to share knowledge with other members” (p. 1872). To counter this problem, CoP designers need to utilize social architecture to increase members’ willingness to share information. In other words, CoPs need to increase social capital in order to make CoPs more participatory.
Daniel, Schwier, and McCalla (2003) agree, stating, “communities with high social capital have frequent interaction, which in turn cultivates norms of reciprocity though which learners become more willing to help one another, and which improves coordination and dissemination of information and knowledge sharing” (p. 2). Lesser and Storck (2001) add that a CoP can be thought of as an “engine for the development of social capital” (p. 831) and that the social capital that exists in a CoP leads to “behavioral change – change that results in greater knowledge sharing, which in turn positively influences business performance” (p. 833). With the right combination of technical and social architecture, CoPs should prove themselves to be very valuable tools for sharing knowledge and supporting the needs of their members.
CHAPTER THREE: RESEARCH METHODOLOGY

“Things inevitably change as a result of research – the mere act of asking questions is an intervention in a situation, and giving and hearing answers and making sense of them inevitably brings about changes in those involved.” (Wadsworth, 1998, p. 6)

Chapter three introduces and describes the methodology selected for this research project. The chapter begins by contextualizing and situating this study within a particular research paradigm. Action research (AR) is introduced as the study’s primary research methodology, and defining characteristics of AR are discussed. Following this the actual conduct of the study is described, including an explanation of the methods used for data collection, plus an introduction to the study participants. The chapter closes with a discussion about data analysis and validity and the study’s limitations and delimitations.

Research Design & Rationale

The aim of this research was to instigate change. The research objective was to utilize action research to study the iterative process of designing, participating in, and assessing the value of a community of practice for Canada’s EE network leaders. Three sub-questions guided the research: (1) why did people choose to participate in a community of practice?; (2) how did they use the CoP?; and (3) what barriers limited their participation? The practical application of this research was to assess whether Canada’s networking leaders found value in a national CoP, and if so, to make recommendations for the formation of such a community.

The selection of research methodology for this study was based on several factors. First, a qualitative, as opposed to quantitative, research paradigm was chosen because the research
questions demanded an exploration of thoughts, feelings and emotions more so than an analysis of statistical data (Strauss & Corbin, 1998). Second, action research was selected as the principle methodology because it provided the best opportunity to conduct participatory and active research with, as opposed to on, fellow EE network leaders (Dick, 1993; McNiff, 2002). Finally, the method of developing a CoP (Lave & Wenger, 1991; Wenger, 1998b; Wenger, et al., 2002) to conduct research and collect data was chosen because it provided opportunities for Canada’s network leaders to reflect individually and collectively upon their shared domain, community, and practice.

**Qualitative Research**

Dick (1993) argues “participation favours qualitative methods” (para. 28). He explains that qualitative research provides opportunities to use participants as “informed sources of information” (para. 28) who can share with you what they know and the researcher probably does not. Qualitative research allows that story to be told through the words and thoughts of the research participants. This research explored how social learning affected the way the participants thought, shared, and learned together, and how they felt about it.

The choice of qualitative research was further inspired by Golafshani (2003) who writes of the qualitative researcher’s desire to “embrace their involvement and role within the research” (p. 600). My ability to become deeply involved in the research was a defining characteristic of this study. As a former executive director, I was sincerely curious about how my fellow Canadian EE network leaders experienced praxis. As well, as a leader who had benefited from participating in a CoP, I embraced the opportunity to share that experience with my peers and
recognized that a qualitative study would be the most appropriate way to study and report on the process.

**Action Research**

Reason and Bradbury (2001) describe action research as a “family” (p. xxiii) of methodological approaches. While the individual approaches differ, the family shares some defining characteristics: action research is participatory and democratic, it combines action, reflection, theory and practice, and it is conducted “in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities” (Reason & Bradbury, 2001, p. 1).

Action research goes by many names: participatory action research, participatory research, participatory inquiry, collaborative inquiry, emancipatory research, action learning, and more (Bennett, 2004; McNiff, 2002; O'Brien, 2001). All are variations on a theme, yet some academics and practitioners still argue about the very nature of this methodology, as well as how and why it should be used (McNiff, 2002; McNiff & Whitehead, 2002). Despite the tensions, the various names are quite often used interchangeably (Bennett, 2004; Dick, 1993; McNiff & Whitehead, 2002; Thiollent, 2011). Throughout this thesis the term action research is used to refer to the many branches of this methodology.

As a methodology, action research evolved significantly over the past century. The concept originally came into practice via two main sources: action research from the social psychology work of Lewin in America in the 1940s, and participatory research from the “consciousness raising practices and the liberation theory” (Thiollent, 2011, p. 161) of Freire who conducted his work in Latin America in the 1950s and 1960s. For many years, the
Methodologies followed independent trajectories, while simultaneously spawning diverse methodological progeny. Since the 1980s and 1990s, however, the various camps have converged, freeing action research from any rigid dogmatic tendencies (McNiff, 2002; Thiollent, 2011). Today, action research is recognized as such a flexible methodology that Newman (2000) has concluded, “There is no one ‘right’ way of doing action research...of engaging in critical reflection. Practitioners engaging in these more open, reflective ways are inventing methodology as they go along” (p. 1).

**Primary Characteristics of Action Research.**

The literature identifies four broadly accepted characteristics of AR: the first is self-reflection; the second, group participation; the third is a cyclical, iterative process combining discussion, action, and reflection; and the fourth is a desire for change (Dick, 1993; Heron & Reason, 1997; McNiff & Whitehead, 2002; Wadsworth, 1998). Each of these characteristics will be introduced in turn in order to provide a broader understanding of action research as a methodology.

McNiff (2002) notes that action research is a methodology of self-reflection, either done individually or with a group, “to check that [one’s work] is as you would like it to be” (p. 6). As a Canadian EE network leader, I chose both my research question and the AR methodology based on my desire to reflect on my vocation. When my thesis research began I had been working in the non-profit sector for more than seven years without ever taking the time to critically examine my own praxis. An action research thesis provided an ideal opportunity for self-reflection. I wanted to discover how I felt about my role as a Canadian EE network leader, to consider how my praxis had been affected by my participation in the NAAEE’s Affiliate
Network CoP, and to explore what value a CoP might provide to my fellow Canadian EE network leaders.

Action research was also chosen because of its focus on group participation (Heron & Reason, 1997). AR allows for the direct involvement of the researcher as an integral part of the research group. To use a theatre metaphor, AR removes the *fourth wall*, a term coined by French actor-philosopher Diderot to express the imaginary barrier that exists between actors and their audience (Bell, 2008). In using action research, the researcher breaks through the illusory fourth wall that traditionally separates him from his research subjects in an attempt to maintain impartiality and remove bias from the study. In using the AR methodology I joined my co-researchers on our learning journey as we, collectively, developed and engaged in a community of practice, co-reflecting on our vocation as Canadian executive leaders.

A third compelling attribute of action research was its iterative nature (Dick, 2000; McNiff, 2002). AR follows a cyclical or spiral process that provides ongoing opportunities for group discussion, action, and critical reflection (Dick, 2000). It is a methodology that creates space for practitioners to reflect upon and refine their praxis. Whereas a conventional research process follows a linear path, beginning with a question and ending with a conclusion, in AR the process is cyclical. In AR each conclusion can lead to a new iteration of an ongoing action and research process (Wadsworth, 1998). The cyclical nature of AR research was particularly appealing because it provided multiple opportunities for ongoing action, reflection, and analysis over the three month course of the project.

The final reason action research was selected is the methodology focuses on a desire for change; this explains the ‘action’ in action research. As expressed by Thiollent (2011), AR
participants share a “vision of social transformation” (p. 161). Depending on the nature of the research, this transformation can extend anywhere from personal to societal. In this research, the goal was to provide a space where Canadian EE leaders could reflect on the nature of our praxis and, by doing so, take steps towards improving the vocation we represented. On a deeper level, it was envisioned that the project could have broader national and societal impacts resulting from the widening ripples of our collective work to foster environmental education and mitigate ecological degradation.

Data Collection & Study Conduct

Data was collected by creating a temporary, three-month long community of practice called EECoP (environmental education community of practice) including seven other EE network leaders from across Canada. Research participants (introduced below) represented four provinces and three northern territories. Due to our widespread geographic distribution it was not logistically, or financially, possible for the community to meet face-to-face. Instead, the community existed as what is alternately referred to as an online, virtual, or distributed community of practice (Kimble, et al., 2008a; Luppicini, 2007; Wenger, 1998b). Data was collected and transcribed from both synchronous and asynchronous methods of communication, including audio-recorded conference calls, wiki entries, email, and an emailed summary questionnaire. Ten weeks after the CoP disbanded, one final email was sent out to solicit additional feedback and reflections on the process and its value.

The participatory nature of AR demanded the need to balance my desire to control the direction of the research through detailed pre-planning with AR’s focus on group participation and emergence (Wadsworth, 1998). As a result, this research began with only a very basic
structure in mind: over a set period of time, EECoP members would meet regularly to discuss and reflect on our roles as EE network leaders, and discover what emerged from the process. We would share stories and programming ideas, swap resources and strategies, identify challenges and perks of the job, and exchange views on any other topics that were of interest to the community. At the end of the research period we would spend some time reflecting on the value that the process brought as individuals, both personally and professionally, and to the various organizations represented.

Synchronous communication took the form of six bi-monthly, one-hour long conference calls. Calls were audio-recorded and then transcribed. Each call followed a similar agenda: a brief update from participants about current projects, an opportunity to raise questions or issues, a facilitated discussion on a question or topic posed by a group member, and finally important updates or comments. Following each call, transcriptions were sent back to participants to provide opportunities for reflection, verification and feedback, and also to provide a written record for anyone who had missed a call.

Asynchronous communication was conducted utilizing a wiki, a socially constructed website that was created for the community using a free online platform called Wikispaces. At the outset, the wiki was populated with background information about the research project, links to relevant literature, a forum for asking questions, a spreadsheet where each member could submit details about their particular network, and individual pages for participants to use as a personal journal or blog. Members were encouraged to consider the wiki as a communal space for information sharing and to add anything they thought would be relevant or beneficial to other members. Further, members were specifically asked to use their personal pages to journal before
and after each conference call, to reflect on what they hoped to get out of the call and what they took away from the discussion.

One week prior to our final conference call, all members were emailed a summary questionnaire to solicit feedback on their perceived value of the CoP. This document was a slightly modified version of a template created by Wenger, Trayner, and de Laat (2011) to assess value creation in communities and networks. The questionnaire acted both as a reflective tool for members to individually assess the value they perceived in the CoP process, and also as a trigger for the final conference call discussion surrounding that general theme. Questions were designed to trigger conversations about the value that EECoP provided to them as individuals and also for their networks.

Ten weeks after the group’s final conference call, an email was sent to the CoP members asking them to once again reflect on the CoP process. The goal was to allow participants one final opportunity to reflect and reassess, in hindsight, what value the community of practice had provided. They were asked to consider such topics as what useful skills or information the CoP provided, whether they had maintained any relationships from the CoP, and what would have made the CoP a more valuable experience.

**Participants.**

Participants for the study were recruited using a combination of non-random selection and snowball sampling methods (Trochim, 2006). Having worked in the field of environmental education networking for seven years prior to this study, I had developed a fairly comprehensive awareness of the regional, provincial, territorial, and national EE networks that exist across Canada, and had also established working relationships with many of their leaders. I sent a list
of the organizations and people I wanted to include in my study to a few colleagues in the EE networking field, and they responded with suggestions for missing networks or leaders. My initial sample (Trochim, 2006) included a list of 11 leaders: three from British Columbia (including myself), two from Ontario, one each from Alberta, Saskatchewan, Manitoba, and the Yukon, one representing the Yukon, the Northwest Territories, and Nunavut, and one who led Canada’s national EE network. A formal invitation was sent via email to each of these leaders outlining the purpose of the study and requesting their participation.

As expected, not all of those invited were able or willing to participate in the research. Some provided alternative participants from their networks, and some did not respond at all. In the end, my study sample included eight Canadian EE network leaders (three males and five females), representing the following roles, networks, and regions:

- Eli Baker, former Executive Director of the Columbia Basin Environmental Education Network, or CBEEN (BC);
- Kate Henderson, Treasurer of the Environmental Educators Provincial Specialist Association, or EEPSA (BC);
- Carlos Ormond, Research Coordinator of the Walking the Talk Network / Institute for Environmental Learning, or IEL (BC);
- Christina Pickles, Program Coordinator of the Alberta Council for Environmental Education, or ACEE (Alberta);
- Kyle Lichtenwald, acting President and past President of the Saskatchewan Outdoor and Environmental Education Association, or SOEEA (Saskatchewan);
• Sherri Owen, President of the Ontario Society for Environmental Education, or OSEE (Ontario);
• Stephanie Yuill, rotating Chair and/or Secretary of Environmental Educators North, or EENorth (the Yukon, Northwest Territories and Nunavut);
• Theresa Southam, Executive Director of the Canadian Network for Environmental Education and Communication, or EECOM (National).

Although BC was overrepresented and the study lacked a participant from Manitoba, I felt that the sample was justified because the high gradient of similarity amongst participants supported the study’s external validity within a theoretical population (Trochim, 2006). All participants signed letters of consent providing permission to use their real names in the thesis, and to utilize any communication from the process as valid research data.

Data Analysis & Reliability.

Ongoing analysis of emerging data was a critical aspect of this iterative AR research project (Dick, 2000; McNiff, 2002). Data analysis was informed by Glaser’s (1965) constant comparative method. Throughout the research period, data was analyzed and coded as it emerged. The analysis process began by comparing data and manually applying codes, or emergent themes, to the transcripts in order to highlight similar ideas or topics. As the number of codes grew and became increasingly difficult to manage by hand, transcripts were uploaded to an online data analysis program called Dedoose. Dedoose facilitated data coding, tracking and the management of emergent themes.

Ultimately, through a process of constant comparison of data, initial codes were narrowed down from several dozen to a small number of key themes. These themes were then compared
again and again with the thesis questions to show the relationships between the questions and the data. All relevant data was then collected and sorted using the thesis questions as my main organizers. The end result was the collection of findings which will be revealed in the following chapter.

The reliability and validity of the data was ensured in a variety of ways. By utilizing an action research methodology and participating in a community of practice, co-responsibility for the learning journey was bestowed upon all members of our EECoP research ‘team’. In this way everyone engaged in the project became an active participant in the research and therefore had a vested interest in the outcome (McNiff & Whitehead, 2002). Equally, the creation of a voluntary CoP assumed that all participants would remain actively engaged in the process. As well, data was readily available online at all times to provide ample opportunities for participants to ensure its reliability and validity.

Another method of ensuring validity of data was to work with, and triangulate data from, multiple information sources (Dick, 1993; Jick, 1979). In this research, data was triangulated from various sources such as conference calls, wiki entries, emails, and summary questionnaires. This provided opportunities to compare and contrast similarities and differences in the data and thereby increase accuracy of interpretation.

**Study Limitations and Delimitations**

Limitations of this study included the willingness and availability of the participants to fully engage in the research. Utilizing AR, while very effective for analyzing and seeking change within a group, can be a time-consuming process. This research required a deep, ongoing, and voluntary commitment from participants who were all busy professionals. As such,
it was understandable that recruitment efforts were not 100% successful, and that participants’ engagement in the process was not always a top priority.

Two research delimitations helped to narrow the study population to a manageable yet representative sample of Canadian EE network leaders. The first delimitation was geographic: while wanting national representation, it was acknowledged that including representatives from each of Canada’s six time zones would make synchronous communication extremely challenging. For this reason Ontario was chosen as the eastern border for participants. Otherwise, the study aimed to include representatives from each of Canada’s western provinces as well as the often overlooked and less involved northern territories.

The second delimitation was the working definition used for the study population: EE network leaders. Initially, the study planned to conduct research specifically with ‘executive directors’ in order to parallel the two research studies on executive leadership (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012). However, because the participating EE networks had varying organizational structures, in many cases the role of executive director simply did not exist. As a compromise the criteria for research participants was widened to include anyone who played a decision making role in a Canadian EE network; this included paid staff, volunteer ‘staff’, and board of director representatives.
CHAPTER FOUR: FINDINGS

“Appreciating the value communities of practice create depends on setting the right expectations. Communities of practice are not a universal silver bullet.” (Wenger, et al., 2002, p. 14)

Chapter four describes the study’s key findings. The chapter opens with findings from the main thesis question: What value does a community of practice provide to Canadian EE network leaders? The chapter continues and closes with findings from each of the three key sub-questions: (1) why did Canadian EE network leaders participate in a CoP?; (2) how did they use the CoP?; and (3) what barriers limited their participation? Findings throughout are supported by quotations from research participants.

Thesis question: What value does a CoP provide to Canadian EE network leaders?

Research demonstrates that EECoP provided value to Canadian EE network leaders in three distinct ways: as a forum for networking and relationship building, as a medium for professional development, and as a source of support and inspiration. Each of these will be discussed in turn.

Networking & Relationship Building.

The principle way that EECoP provided value to Canada’s EE network leaders was as a forum for networking and relationship building. Recognizing that these were some of my own motivations for wanting to form EECoP, it was not surprising that other isolated network leaders felt the same way. During the first four years when I worked for CBEEN, prior to attending any national EE conferences, I met almost no other professional peers. By the time I convened the
EECoP group, I had developed a small network of professional acquaintances from across Canada (and North America), but had enjoyed few opportunities to develop these relationships or discuss the trials and tribulations of our roles as network leaders. Of the seven leaders I recruited, I had met three face-to-face, and knew one more only by reputation and email prior to my research. Because of this, I looked forward to reconnecting with my acquaintances and expanding my professional network through this research project. Many EECoP members felt the same way; some knew each other previously, others did not, but all agreed that they were excited about the networking and relationship building opportunities that the community provided.

For members that knew each other previously, EECoP was an opportunity to reconnect. Kyle, from the Saskatchewan Outdoor and Environmental Education Association (SOEEA), said he valued the opportunity to further develop existing relationships with some of his peers, noting, “Eli and Carlos, we had a little bit of relationship from a previous conference...so it’s just another stage in our relationship” (K. Lichtenwald, conference call#6, May 25, 2012). Carlos, from BC’s Institute for Environmental Learning (IEL), also appreciated the opportunity to reconnect, saying “It was great to connect to a few of the participants who I had not been in contact with for a while” (C. Ormond, summary questionnaire, June 9, 2012).

For the majority who did not know each other, EECoP was an opportunity to develop new relationships. For example, Kate, from BC’s Environmental Educators’ Provincial Specialist Association, blogged, “Wow - what a neat opportunity to ‘meet’ and interact with environmental education leaders. I am already predicting that I will take away a lot from this experience” (K. Henderson, wiki post, March 15, 2012).
Aside from just developing social relationships, many members noted the benefits of establishing professional relationships with their Canadian peers. Stephanie, representing Yukon, the Northwest Territories, and Nunavut with EENorth, felt that the CoP could be very beneficial for professional networking as it, “opens up new doors which again opens more doors through your organizations” (S. Yuill, conference call #6, May 25, 2012). In her final reflection, Stephanie added, “Participating has helped me as a professional by opening doors to other people and their skills, talent, and expertise” (S. Yuill, summary questionnaire, June 10, 2012). Kate too found value in developing national connections: “This was a great opportunity to network and share ideas with leaders from similar organizations across the country” (K. Henderson, personal communication, June 9, 2012).

Finally, some members noted how developing relationships within EECoP could form networking ripples that would extend beyond our CoP. For example, Kate commented on the benefits of developing relationships across the country:

It’s always really nice to connect. If you know that someone is going to a conference, to be able to connect them with someone you’re in contact with. If I know somebody that is heading to Saskatchewan I’m going to put them in touch with Kyle. (K. Henderson, conference call #6, May 25, 2012)

Overall, my findings clearly demonstrate that Canada’s EE network leaders are interested in learning more about their peers and what they and their networks are doing across the country. There appear to be few occasions for them to network and they truly valued the opportunity that EECoP provided.

Professional Development.
The second way that EECoP provided value to its members was as a forum for professional development. Everyone involved recognized that we had assembled a formidable brain trust. The assembled group of eight Canadian EE network leaders represented broad reaching expertise in environmental education, conservation issues, networking, non-profit management, and a host of other skills. For the more experienced members, the community was a place to share their expertise. For those newer to their executive leadership roles, our CoP was a place to find mentors and learn new skills.

Theresa, the executive director of the Canadian Network for Environmental Education and Communication (EECOM), has worked in the environmental sector for several decades and acknowledged that at first she was sceptical whether she would learn anything new from the group. However, in the end she admitted that the CoP had provided some value, stating, “I didn't actually think I would get a lot out of this professionally. I did find that I learned some things though, about technology, what was going on regionally, more about ACEE’s great activities” (T. Southam, summary questionnaire, June 10, 2012).

While some members struggled to pinpoint specific skills they had learned, several of them expressed that merely participating in EECoP and networking with their peers felt like valuable professional development. In his own final reflections, Kyle noted the value he found from participating in EECoP:

So, professionally I really like being able to interact with other professionals and I have gained from each of you from the few calls we’ve had together. I think I’ve gained just by participating in the discussions and being here, growing as a professional and seeing how each of you handles different situations and how you conduct yourselves in these
calls helps me develop as a professional, as a young person. And just learning from others...so partly it’s a little bit of a mentorship almost. I look up to each of you as professionals in the field, and I find that gives value to the project and for me professionally. (K. Lichtenwald, conference call #6, May 25, 2012)

Kate found similar value, and stated that participating in the CoP was, “confidence building” (K. Henderson, conference call #6, May 25, 2012).

One particular area where members noted professional development value was in learning how to use a wiki to facilitate online communication with geographically dispersed networks of people. In spite of the technological challenges they faced, and sometimes their own ingrained negative perceptions of technology, several EECoP members mentioned that learning about wikis was very valuable. Stephanie commented on the positive and negative aspects of new technologies:

Participation introduced me professionally to the wiki site and it challenged me to get over my distain of technology. I still see technology's negatives: they still use up precious resources, they take up time, increase obesity, they can be detrimental, they are NOT necessary in all programs. But I do see they are part of our world and I need to at least try to recognise that! (S. Yuill, conference call #6, May 25, 2012)

Reflecting further, Stephanie even admitted, “This whole idea of the wiki that we’ve been using has been a lot of value” (S. Yuill, conference call #6, May 25, 2012). Kate also felt that she had benefited by learning about the wiki and even saw a future role for it in her own network, commenting, “I’m another person who thinks [the wiki] could be of value for our organization,
for our executive team in internal aspects to be able to communicate and keep in touch for some committees or working groups” (K. Henderson, conference call #6, May 25, 2012).

**Support & Inspiration.**

The third and final way that EECoP provided value to Canadian EE network leaders was as a valuable source of support and inspiration. Some members enjoyed the supportive atmosphere of the CoP and the camaraderie that it engendered. For others, the stories shared by their peers gave them inspiration to look at their roles and their networks in a new light, or to try new things.

As the literature revealed (chapter 2), working in the non-profit sector can be draining; some EECoP members found EECoP to be a valuable and supportive antidote. Stephanie identified the CoP as a valuable national support network for EE leaders, stating, “I like the networking and meeting other people. We’ve got such a small industry, and with things going the way they are I think it’s really important to heighten those connections and really band together” (S. Yuill, conference call #6, May 25, 2012). In a separate reflection Stephanie noted, “I now have new people to go to for guidance, ideas, and inspiration. And people who understand my challenges and frustrations...It's always nice to know you are professionally not alone in your issues and obstacles!” (S. Yuill, summary questionnaire, June 10, 2012). Kate felt that the EECoP model might help provide support and inspiration for EEPSA’s disengaged organizing committee, stating, “we're about to have our AGM and planning for next year and hopefully we can take this information/ideas and help move us forward out of the current burnout” (K. Henderson, personal communication, June 3, 2012).
Some members saw the CoP as a source of inspiration. Several members mentioned that the CoP affirmed what they were doing or inspired them to do things differently within their own organizations. Kyle noted, “I found affirmation of our work at SOEEA and motivation for continued efforts and transformation.” (K. Lichtenwald, summary questionnaire, June 12, 2012). Carlos reflected that the CoP, “has made me rethink how I might be able to reorganize the institute I work with to act more like this community of practice” (C. Ormond, summary questionnaire, June 3, 2012). He even pointed out specific steps he took to implement lessons learned from the CoP into his work with the Institute for Environmental Learning:

I have tried to change the upcoming meeting format for my organization by shortening the meeting by one hour, and using the second hour as a relaxed meet and greet for people to get to know one another a bit better. (C. Ormond, summary questionnaire, June 3, 2012)

Christina, from the Alberta Council for Environmental Education (ACEE), noted that she would use the experience to, “help improve future on-line interactions and our [network’s] plans to create CoPs” (C. Pickles, summary questionnaire, June 3, 2012). As an example, she revealed, “[ACEE has] decided to start our CoP program with a face-to-face full day meeting. This CoP experience has helped reinforce this move” (C. Pickles, summary questionnaire, June 3, 2012). Kyle was inspired to create CoPs within his own provincial network, stating that he was “trying to flush out how we might be a facilitator of these CoPs, and what types of communities we might be able to create among educators here in Saskatchewan” (K. Lichtenwald, conference call #6, May 25, 2012).
Kate said, “I... thought the value in this was learning about ideas and projects that other organizations across the country are working on and to get a little inspiration from that for me to take back to EEPST” (K. Henderson, summary questionnaire, June 3, 2012). Stephanie said that she would like to see her network adopt some of the communications technology used in the CoP, stating, “I would like to put forward the idea of having a wiki site for our own internal communication and to get to know each other better” (S. Yuill, summary questionnaire, June 3, 2012). Kyle noted that participating in the CoP inspired him to look at networking in a new way: “I have studied networking theory quite a bit, and had seen CoPs before, but I hadn’t thought about...or it hadn’t came to me that we could create some sort of organization within our association in this regard too” (K. Lichtenwald, conference call #6, May 25, 2012).

Sub-question #1: Why did Canadian EE network leaders participate in a CoP?

My research identified two main reasons why seven Canadian EE network leaders chose to join me in establishing a community of practice. First, many members saw EECoP as a valuable networking and mentoring opportunity. They wanted to network with environmental educators beyond their regional organizations and they saw value in the mentoring process, either as a way to share their own knowledge, and/or hoping to benefit from the experience of their peers. Second, many of them joined simply to participate in the research process; data demonstrates they saw value in the research, they were curious about the results, and they empathized with my need to find willing research participants.

Networking & Mentorship.
The most common reasons why participants joined the community were to gain a broader and deeper perspective of EE networking in Canada, and to explore mentoring opportunities with their peers. Theresa expressed this sentiment well during the group’s initial conference call. When asked about her reasons for participating in EECoP she responded, “I think we always have a lot to learn from our peers” (T. Southam, conference call #1, March 12, 2012).

Several other EECoP members demonstrated an interest in networking with their national peers. Kate said, “I am...looking forward to learning what is going on across the country, meeting each other and discussing what we do in our roles as well as in our 'other lives’” (K. Henderson, conference call #1, March 12, 2012). Three months later Kate reflected,

I was probably most motivated to join the group to...keep EEPSA linked in with organizations across the country, because we don’t have a lot of opportunities to connect except for the occasional conference which we may or may not be able to afford to get to. (K. Henderson, conference call #6, May 25, 2012).

Christina expressed a desire to look beyond the borders of Alberta, stating, “I have not had much interaction with environmental educators in other provinces so I am looking forward to learning what is going on across the country” (C. Pickles, conference call #1, March 12, 2012). Kyle was drawn to the project for similar reasons:

I wanted to see what our brother and sister organizations are doing across our country. So by meeting some of you fine individuals, and hearing your stories, I get a better understanding of how our work in Saskatchewan is important and how we can adapt and grow and maybe find some relationships with other groups. It was just to build
awareness about some of the other groups, and a bit of a networking thing for me. (K. Lichtenwald, conference call #6, May 25, 2012)

From these comments it seems clear that opportunities for Canadian EE network leaders to mingle, network, and share practices are rare, yet desired.

Many EECoP members also recognized that participating in the research project would provide valuable mentoring opportunities. They wanted to discuss best practices, share their successes, and learn from others, both for their personal benefit and to help build capacity for their networks. Christina sounded almost self-conscious about her desire to benefit from the wisdom of her peers:

I guess I came from a little selfish perspective...as we [ACEE] are developing CoPs, so I wanted to participate in one so I could get a first-hand experience of a CoP and then apply what I’ve learned here to what we’re developing as well. (C. Pickles, conference call #6, May 25, 2012)

In a later conversation, Christina reflected more on the reciprocal knowledge-sharing nature of CoP learning opportunities, noting, “I wanted to share what we are doing in Alberta and learn from others in different provinces. Have they tackled similar projects? What have been their experiences? Successes? Challenges?” (C. Pickles, summary questionnaire, June 3, 2012).

Kyle, too, spoke of the valuable professional development he hoped to gain, stating, “I decided to become involved so that I could better serve our members and lead our board of directors. This research is important for the work we do” (K. Lichtenwald, conference call #1, March 12, 2012). Stephanie also acknowledged a desire to learn new ideas or skills, particularly in the area of communications technology:
I was encouraged to participate to see how [EENorth] can improve our communications. I am pretty sure we are all alike; way oversubscribed regarding communications (emails, phones, listserves, social media). Is there an ultimate tool that can make it easier for people to stay in touch, particularly those across geographic boundaries? I don't know but am willing to try and find out. (S. Yuill, conference call #1, March 12, 2012)

Sherri, the President of the Ontario Society for Environmental Education (OSEE), saw EECoP as replacement for the mentoring she lacked within her own network, revealing, “[w]hen I took over, the past president was unavailable for mentoring and I'm figuring it out on my own. I'm looking forward to having a peer group to interact with” (S. Owen, conference call #1, March 12, 2012). Carlos shared his own motivation, saying, “I was wanting to connect with other organizations across Canada and see if other organizations had issues that are shared, and finally finding out how those issues are solved” (C. Ormond, conference call #6, May 25, 2012). These comments demonstrate a common recognition that our networks shared similar challenges and that a CoP provided an excellent opportunity to both mentor and learn from one another.

**Assisting the Research Process.**

While I expected that participants would join my research project to benefit themselves and their individual networks, I was flattered by secondary and more altruistic motivations for participating: several participants openly acknowledged that they agreed to join EECoP simply to support and participate in my research. Each had their own reasons why.

Stephanie made the point very clearly:

I don’t know what I thought I’d get out of it. When I wrote my master’s thesis, I was just so grateful for anybody to participate with my research. I felt, ok this is a great
opportunity to be part of research, and I’m not trying to be altruistic, because I’m really 
not, but I was more interested in participating in the research and finding out what was 
going to come from your research than anything that I would get out of the research. (S. 
Yuill, conference call #6, May 25, 2012)

She was not the only participant to express these sentiments. Carlos concurred, stating, “there 
was an interest in the research and then also wanting to help with the research on it” (C. Ormond, 
conference call #6, May 25, 2012). Kate expressed similar motivations: “I was probably most 
motivated to join the group to support the project” (K. Henderson, conference call #6, May 25, 
2012).

In a separate reflection, Stephanie reiterated her support for academic research in general: 
“I participated largely because, as a former grad student, I understand the need for research and 
for guinea pigs! I enjoy melding the academic with the practical. It’s an honour to help a 
profession I adore by forwarding science” (S. Yuill, summary questionnaire, June 3, 2012).

Based on these comments, it appears that EECoP members were genuinely interested in both 
assisting a graduate student who needed guinea pigs and also in supporting a research project 
that was relevant to their vocation and might produce some beneficial results.

Sub-question #2: How did participants use the community of practice?

EECoP provided members with two main methods of participation. First, members could 
communicate in real time, or synchronously, by means of scheduled conference calls. The 
second option was for members to share knowledge at any time they wished, or asynchronously, 
via the EECoP wiki. All members made use of both methods but my findings demonstrate that 
members participated in synchronous communication far more readily than asynchronous
communication. The following is a description of how participants used each medium to interact with fellow CoP members.

**Synchronous Communication.**

Synchronous communication via bi-monthly conference calls was the primary way that EECoP members shared knowledge, information, and experiences. In accordance with the collaborative paradigm of my action research methodology, I created a basic structure for the conference calls, yet left room for participants to contribute some of their own design elements. This section will discuss some of these design decisions and how EECoP members made use of synchronous communication in the CoP.

Due to the relatively narrow window of time I had available to conduct my research, I had to make some decisions about our synchronous communication methods prior to convening my CoP members. The most significant decision I made by myself was the type of technology to use for our discussions. I considered using video-conferencing but instead selected an audio-only conference call line because I had concerns that members in smaller or more remote communities might not have access to high-speed internet. I then drafted a timetable for the calls, particularly the date and time of our first call, plus a generic agenda for how each call would proceed. These decisions, and others, were then brought to the CoP members for discussion and ratification.

From this point on, almost all decisions about EECoP activities were made by the group through a collaborative process of discussion and negotiation. For example, during our second conference call, we discussed how often to hold conference calls: once a week or every two weeks. Sherri commented, “Every week is difficult. This is time when I could be working, so
missing time for this is difficult” (S. Owen, conference call #2, March 30, 2012). Kate agreed, stating, “I think I’d have to lean towards the same [every two weeks] because my commitment with EEPSA is a volunteer commitment, which means I’ve doing this over my lunch break” (K. Henderson, conference call #2, March 30, 2012). Stephanie also agreed, “I like the two weeks because it’s not enough to forget, but it’s easy to plan around two weeks as opposed to every week” (S. Yuill, conference call #2, March 30, 2012). In the end we decided to hold calls every two weeks; every week was deemed too often for busy professionals, and any longer than two weeks in-between calls felt too far apart. Over a three-month research period, this left us with a total of six calls.

Although the EECoP members were asked at the outset to try to attend all six conference calls, many obstacles impeded regular and consistent participation. At times I found this frustrating, but I accepted the reality that all participants were volunteers with busy personal and professional lives. The average group member participated in just over half of the six calls. Of the eight members of EECoP, I was the only one who was available to participate in all six calls. One member was present for five of six calls, while two members were only available twice. It was also quite common for members to either arrive late or leave early.

The group also discussed and agreed to the basic agenda I had created for our calls. We decided that each call would last one-hour and follow a similar structure: we opened with a quick “check in” to see how people were feeling, moved to a facilitated discussion about a topic of interest, and concluded with an opportunity for questions, comments, or problems. The process for suggesting discussion topics, and voting on them, occurred on the wiki and will be discussed in the next section on asynchronous communication.
Asynchronous Communication.

Asynchronous communication took place via a wiki, a socially constructed website that allows members to add or edit information or even whole ‘pages’ at any time. Once again, due to research time constraints the decision to create a wiki was made by me prior to convening our community. EECoP members were first informed about the wiki prior to our first conference call, via a web link in an introductory email. The email included some basic information about how to access the wiki, and how to negotiate the information on the first few pages I had created.

The collaborative nature of action research inspired me to begin with a minimalist design to the wiki. At the outset I created only a handful of different pages expecting that CoP members would add additional pages and fill them with information or resources as the need or desire arose. The initial wiki pages I created included background information about my study, an introduction to wikis and how to use them, a spreadsheet for a network comparison, a page to add conference call dates and instructions, a resources page for uploading documents and templates, a questions page to post queries and responses, a links page for useful web links, and personal pages for autobiographies and self-reflective blogging or journaling. Prior to our initial conference call members were invited to explore the wiki to familiarize them with some of the background information about my thesis project, to start filling in the Network Comparison page, and to personalize their personal pages.

The personal pages were the most commonly utilized part of the wiki. I created these pages, one for each member, as a space where they could share their stories and personal reflections. Members were asked to write a brief autobiography, upload a picture, and then add journal reflections before and after each of our six conference calls.
The autobiographies proved to be a wonderful way to learn more about people, what they looked like, what inspired them to join the research, and other interesting facts about their lives. All but one of the EECoP members posted a picture, and all but one posted a brief autobiography. The stories people shared included some fascinating snapshots of people’s lives and demonstrated the high calibre of professionals that were taking part in my research.

Carlos described a life-changing incident that occurred while working on coral reef conservation in Panama:

I began to realize how little conservation research was reaching the local communities where I was working. It all became quite clear to me when a local community member asked me, as if speaking about all conservationists "you tell us we can't eat the turtles, but you don't tell us why.” That moment was a turning point in my life, as it had me question the reasons for working in the field of conservation. (C. Ormond, wiki post, March 11, 2012)

Stephanie shared one of her proudest moments: “Greatest accomplishment in north: completing the Yukon River Quest in a voyageur canoe in 2010 with a boat load of incredibly brave women!!! We came in fifth last...but we finished!” (S. Yuill, wiki post, March 12, 2012).

Theresa’s autobiography focused on her many accomplishments in the environmental sector, noting that she had “held leadership roles in some of the country’s most provocative programs [and] completed projects nation-wide, including the Nattinak Centre in Pond Inlet, Nunavut!” (T. Southam, wiki post, February 28, 2012).

Kate shared her own expertise:
I occasionally work as a high school science Teacher-On-Call but spend most of my time working on contract with Science World as the Digital Outreach and Teacher Support Specialist. I developed and now manage BC Green Games, our province-wide environmental action contest for K-12 school teams, which is a virtual sharing space for student projects. (K. Henderson, wiki post, March 10, 2012)

As our CoP lacked the opportunity for a face-to-face gathering, and even the capabilities for video-conferencing, these brief introductions were a practical way for the members to get to know a little bit more about each other.

The second most utilized wiki page was the network comparison spreadsheet that was created to allow members to compare and contrast their EE networks. On this document, CoP members were asked to provide details such as membership demographics, annual budgets, sources of income, and programs offered. This form proved to be a simple introductory task and most members filled in the data right away.

Elsewhere on the wiki, there was drastically less engagement. The web links page saw a flurry of initial contributions at the start of the research in early March, but this trickled to a halt half-way through April. Only two questions were asked on the ‘Questions’ page and only one person attempted to respond to one. The “Resources” page saw only one contribution.

One very effective use of the wiki was for establishing discussion topics for the conference calls. To facilitate this process, I created a wiki page where members could suggest discussion topics and then vote on their top two choices. Members were given several days to offer suggestions and then invited to cast their votes on the wiki spreadsheet I created for the purpose. The most popular four discussion topics were: (1) What are the obstacles to an online
CoP?; (2) what is effective professional development for EE professionals?; (3) How do we create more engaged and active members of our organizations?; and (4) How do we reach classroom teachers with environmental education professional development sessions? In the end, the fourth question was deemed redundant and was omitted. It was replaced with one of the other proposed discussion topics: How do we unplug and re-energize?

An additional four discussion topics were suggested, but did not make the final selection. The topics offered were as follows: (1) How do we impact policy decisions about the inclusion of environmental education in K-12 curriculum design?; (2) What tools work best to connect busy, goal-oriented, active, passionate, want-to-get-out-there-and-do-something people who are attracted to environmental education?; (3) How do we engage more than the ‘already converted’, i.e. corporate, government and non-"environment" not-for-profits?; and (4) A request to present and discuss ACEE’s plan to create CoPs in Alberta.

Although EECoP members could post on the wiki whenever convenient, most did not engage deeply or regularly with this asynchronous medium of communication. Over the twelve weeks of the study, the average member only posted reflections three times. No one, including myself, posted a journal entry for each of the six conference calls as requested. Four people posted five times (the highest), one posted three entries, two posted twice, and one person did not post a single journal reflection. Although the wiki was regularly visited and used for the first few weeks, engagement quickly decreased. At least one other EECoP member was aware of this trend, commenting after-the-fact, “[w]e shared ideas primarily through the phone calls. I don’t think that we used the wiki as well as we could have for sharing documentation” (K. Henderson, summary questionnaire, June 3, 2012). Participants used the wiki as a source of information, and
added autobiographical details and sporadic journal postings, but few added questions, answers, or resources to the existing pages, and no one created new pages or suggested new ways our CoP could make use of the medium.

**Sub-question #3: What barriers limited participation?**

Three barriers which limited participation in the CoP were identified from the data. The first and foremost of these reasons was a lack of time. A second barrier was technology, both in terms of discontent with the tools themselves and the perception that electronic communication was not conducive to strong social bonding. The final factor that limited participation was the realization that people joined the CoP with different, sometimes incompatible, expectations, and priorities.

**Lack of Time.**

The most common explanation participants provided for not engaging more deeply with the CoP was a lack of time. Kyle neatly summarized this experience, stating, “I think that time was missing. Time is the cost, right? It’s hard to find those volunteer hours on top of what we’re already doing” (K. Lichtenwald, conference call #6, May 25, 2012). Similarly, Kate suggested that, “whenever you’re coming up with challenges...time is always the biggest one. Time, time on the call, time to get to the call” (K. Henderson, conference call #6, May 25, 2012). The perception that there was not enough time to regularly attend conference calls or contribute to the wiki was almost universal among EECoP members.

There may be valid reasons why EECoP members felt they did not have enough time to adequately participate in the CoP: their full schedules suggest that Canadian EE network leaders
are a busy group of people. Kate, who works for one organization, volunteers with her EE network, and substitute teachers on the side, provided a perfect example of how competing priorities undermined her efforts to participate in the CoP:

I'm suffering from a common complaint: lack of time. It's Earth Day on Sunday, we just announced the winners for BC Green Games, I have 6 student-teachers that I'm supervising starting their 3-week practicum at my workplace on Monday, and I'm having a hard time stopping for a moment to wrap my head around the process of the CoP, and even reflect on what we chatted about last meeting. (K. Henderson, wiki post, April 13, 2012)

Kate was certainly not the only one juggling multiple responsibilities, both personal and professional. Sherri, who attended only two conference calls, described her full schedule:

My work is at Camp Kawartha which is an outdoor education centre. And, I’m also a supply teacher for the local board because it’s not full-time work, and I’m also President of the Ontario Society for Environmental Education, which is entirely a volunteer position. (S. Owen, conference call #2, March 30, 2012)

Kyle expressed similar time conflicts, explaining his absences from our Friday afternoon conference calls, “I was missing just due to time and stuff. Friday afternoon is kind of a tough one just for leaving town or if I get called in to substitute teach. I think I maybe made half of the sessions” (K. Lichtenwald, conference call #6, May 25, 2012). Theresa described an equally hectic lifestyle, “I now work part-time, very part-time, for the Canadian Network for Environmental Education and Communication as the executive director. And I work part-time
for the college and also for Fisheries and Oceans Canada” (T. Southam, conference call #2, March 30, 2012).

The fact that several CoP members could not always attend regularly scheduled conference calls was unfortunate, but not particularly surprising. When scheduling conflicts arose, people had to choose priorities. What was slightly more surprising was that participants also found themselves too busy to regularly participate using our asynchronous communication medium, the wiki. Only a few weeks into the research process, Stephanie reflected, “I think I am liking the wiki. My only struggle is time” (S. Yuill, wiki post, March 19, 2012). It was an entire month before Stephanie wrote again:

Wow, almost a month since I wrote last. Perhaps we should be finding out how to get people to write more... I admit I start off with the best of intentions but they seem to fall by the wayside with other priorities. (S. Yuill, wiki post, April 26, 2012)

Stephanie was aware that her online postings had been sporadic, yet she also recognized that the other CoP members were not posting on a regular basis either.

**Technology.**

The second most commonly perceived barrier to participation in the CoP was technology. Many EECoP members expressed dissatisfaction with the technological tools we used to communicate, both with regards to the conference calls and the wiki. The data showed two main reasons for their grievances. First, many members were unfamiliar with the wiki and found it difficult to negotiate, while others were frustrated about the need to learn one more new technology. Second, many expressed a frustration that communicating from a distance, via
conference calls and the wiki, was impersonal and not particularly conducive to developing a sense of community.

Although EECoP members were quite comfortable with conference call technology, many were both unfamiliar with, and frustrated by, the wiki. At the outset some basic instructions on how to use the wiki were provided, but on reflection I realize that I underestimated members’ training needs. Stephanie commented,

I think one of the things that I really would have liked to have seen, and this is my bias, was to have a half-hour or an hour conference call on how to use the wiki, because I don’t feel like I’m using it to its absolute full potential. (S. Yuill, conference call #6, May 25, 2012)

The truth was that I also would have benefited from more instruction on how to use the wiki. Although I had used wikis a few times before my research, I quickly realized that I did not know enough to be a very effective tutor for my peers. Responding to Stephanie’s comment above, I stated,

I think if you are going to use a certain kind of technology it really helps to have a proper tutorial on that and make sure everybody knows how to use that. I’m guilty of that, not having been as proficient as I could or should have been on the wiki. (E. Baker, conference call #6, May 25, 2012)

Technology posed other problems too. Stephanie commented on her frustration with passwords: “The biggest obstacle I think is trying to remember passwords! Because when I look at an online anything, all I can think of is ‘oh my god it’s another password that I somehow have to juggle and remember!’” (S. Yuill, conference call #1, March 12, 2012). Stephanie also
recognized that because different CoP members were familiar with different kinds of electronic communication tools, the problem really lay in, “finding some kind of consensus on what tool is going to be the best” (S. Yuill, conference call #2, March 30, 2012).

Another barrier linked to technology was the impersonal nature of electronic communication. Many members simply did not feel like they could form meaningful bonds with their peers through a virtual medium. With reference to conference calls, Kate noted, “I don't yet feel...connected over the phone - whether that is due to my busy schedule, [or] because we haven't met face to face, [or] because I'm not sure what we have in common” (K. Henderson, wiki post, April 13, 2012). Kate’s feeling of disconnect was still present at the end of the research. When asked to reflect whether she would maintain contact with her peers, Kate responded, “Staying connected is unfortunately not likely, unless there is a face-to-face opportunity” (K. Henderson, summary questionnaire, June 3, 2012). Meanwhile, Theresa had similar criticisms of the wiki, stating, “I don’t feel that connected. And I know that I’m a very busy person, and that’s probably my fault...but I don’t really feel that connected to the wiki itself” (T. Southam, conference call #2, March 30, 2012).

**Different Expectations & Priorities.**

The third key barrier to participation in the CoP was the sense that different members had different expectations and priorities. As the CoP facilitator, I had intentionally not set a clear direction or agenda for what would emerge from our EECoP experience. Although this lack of direction was acceptable for some members, for others it was a frustration.

Christina’s reflection exemplifies this feeling of not knowing what she really wanted but feeling somehow unsatisfied with what emerged:
From a professional perspective, I was hoping for more specific conversations about things. A lot of the conversations we had were important conversations, but very high level. I’m not sure what type of conversation I was looking for, but... I don’t think I really got the conversations that I was expecting. (C. Pickles, personal communication, May 25, 2012)

In a separate reflection, Christina acknowledged that, for better or for worse, she had different expectations than some of her peers: “I admire the participants who said they had no expectations, they just wanted to participate and see where it went. I think if I had gone into this CoP with this attitude, I would have been more open” (C. Pickles, summary questionnaire, June 3, 2012).

A difference in expectations may be a reflection of different personalities but it may also be symptomatic of leaders converging from diverse networks and distant locations. Kate pointed out that communication was often challenging because the various leaders represented different networks with diverse aims: “It was challenging because we do represent diverse organizations and large geographic areas” (K. Henderson, summary questionnaire, June 3, 2012). Christina had similar feedback about the differences among the various networks, stating,

Although we do have similar aims and goals...we are very different operationally, and I definitely felt that, which is good in some ways. We get to see what other worlds of EE are happening, but in terms of actually sharing expertise it’s a little different. (C. Pickles, conference call #6, May 25, 2012)

Not only did different organizations have different priorities, but each leader clearly held some issues more close to their hearts than others. This was illuminated in a comment from Theresa
who was frustrated that an issue of importance to her was not discussed more deeply by the group. She wrote, “My realization is that this group of individuals does not find the above issue [the carbon footprint of traveling to conferences] as important as I do” (T. Southam, personal communication, June 3, 2012). While the EECoP members shared many things in common, it became obvious that their differences sometimes impeded communication and bonding.
CHAPTER FIVE: DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

“I don’t know that we’ve tapped into the value of the CoP as much as I was expecting, but I think there always has to be a starting point, so maybe we’ll be able to move it forward.” (K. Henderson, conference call #6, May 25, 2012)

Taoist philosopher Lao-tzu said that a journey of a thousand miles begins with a single step (chapter 1); so too with the development of a community of practice (Wenger, et al., 2002). Every journey must have a starting point. It may also be said that every journey must have a conclusion, yet often the ending of one journey is simply the beginning of a new one. Such is the iterative nature of action research (Heron & Reason, 1997; Wadsworth, 1998). The lessons learned along this journey may now act as the starting point and a way forward for further action and further research. This final chapter will summarize lessons learned along this thesis journey, offer recommendations for future CoP action to support EE leaders, make suggestions for areas of future research, and close with some final thoughts on the need to move the CoP process forward to support Canada’ EE network leaders.

Lessons Learned

Non-profit EE networks face a dilemma: the demands of working in the non-profit sector lead to anxiety and burnout, risking the abrupt loss of executive leaders just when they are needed most (Cornelius, et al., 2011; Human Resource Council for the Nonprofit Sector, 2012; Tierney, 2006). However, new leaders cannot be recruited simply or quickly; to do so requires time, and time is not a luxury possessed by the environmental movement (Intergovernmental Panel on Climate Change, 2007). Recognizing the risk of a leadership deficit, it is imperative
that the non-profit EE networking sector identifies ways to sustain the leaders that it already has. This research was conducted to examine whether a peer support network, such as a CoP, could be an effective means of sustaining these leaders.

The catalyst for this research project was the recognition that the NAAEE’s Affiliate Network provided a model for how Canada might support its own network leaders. Personal experience and discussions with peers demonstrated that Canada’s EE network leaders often felt isolated, inadequate, and frustrated in their work. Many wanted to be effective network leaders, but simply did not know how. Based on the literature reviewed and the research conducted, this study concludes that a community of practice may be a particularly effective tool for sustaining Canada’s EE network leaders.

Readers should not infer that a CoP is a “universal silver bullet” (Wenger, et al., 2002, p. 14) for all the issues facing Canada’s EE network leaders. The organizational challenges of the non-profit sector are too diverse and systemic to conclusively argue they will be solved through peer networking alone. It will take more than that. However, a national CoP could be a good starting point. What can be concluded is that the Canadian EE network leaders who participated in this research found value in the CoP process. Each found value in their own way and to varying degrees, but overall there was a sense that EECoP participants appreciated the opportunity to learn from, and share knowledge with, their national peers. It was a good first step.

**Recommendations**

Having recognized the value that a CoP can provide for Canada’s EE network leaders, this research brings forward three key recommendations. First, this research recommends the
creation of a national CoP for Canadian EE network leaders. Second, this research recommends paying attention to both social and technical architecture when designing the CoP. Third, and finally, this research recommends having patience with the CoP process.

**Recommendation #1: Create a national CoP for Canadian EE network leaders**

The research suggested that EECoP was valuable to Canadian EE network leaders because opportunities to connect with their Canadian peers are desired but rare. Research and personal experience confirm that face-to-face peer networking opportunities are particularly rare and that online opportunities are equally uncommon. Based on these findings, I recommend the creation of a national CoP to facilitate regular and ongoing peer networking opportunities for Canadian EE network leaders.

Research findings are supported by literature that recognizes CoPs as valuable tools for peer networking and support (Goland, 2005; Gray, 2004; Hughes-Adams, 2010; Maginley, 2008; Miller, 2008; Rowan, 2006; Wenger, et al., 2002). These studies suggest a strong correlation between participating in a CoP and decreased feelings of isolation, increased efficacy in one’s domain, and an overall sense of enhanced personal well-being. As such, this study corroborates the conclusion of Cornelius et al. (2011) who found that, “peer networks, both formal and informal, [are] especially effective for decreasing feelings of isolation and norming the trials and tribulations of the [executive director] role” (p. 12).

If the benefits of peer networking have been documented, and the NAAEE’s Affiliate Network has established a working CoP model, why do Canada’s EE network leaders still lack an organized forum to discuss their shared domain, community, and practice? Two key factors appear to be limiting progress: the lack of a champion, and a lack of funding. In the first
instance, no organization has yet made the establishment of a Canadian CoP for EE network leaders a high enough priority to gain traction. As for the second reason, funding limitations in the non-profit sector have made it cost-prohibitive to coordinate or attend the face-to-face gatherings which seem critical to CoP success, as demonstrated in this research. Neither of these obstacles is insurmountable, yet it is worthwhile to examine the reasons behind these barriers so that they can be better understood and overcome.

The Need for a Network Champion.

Although conferences and other gatherings exist for Canadians working in the environmental, educational, or non-profit sectors, there are few if any networking and professional development opportunities targeting leaders at the nexus of these three sectors. I identified this gap when I attended my first NAAEE Affiliate Network gathering and recognized that Canada needed an organization to champion the networking needs of its own EE network leaders. I was not the only Canadian in attendance to have these thoughts: Natalie Swayze, the executive director of EECOM at the time, also recognized the value that a CoP could have for Canada’s EE network leaders (N. Swayze, personal communication, September 30, 2012).

Based on Swayze’s recommendations, efforts were made to convene networking gatherings at EECOM’s national conferences in 2010 and 2011. Unfortunately, few regional EE networks were represented at these events. Swayze blamed several factors: EECOM had limited funding and capacity to coordinate the gatherings, it lacked formal relationships with Canada’s regional EE networks, and it had not traditionally seen itself in the role of national coordinator for the nation’s diverse and geographically isolated networks (N. Swayze, personal communication, September 30, 2012).
While the first two gatherings did not produce many tangible results, EECOM should be congratulated for taking preliminary steps to champion national networking. As Canada’s national network for environmental education and communication, EECOM seems like the ideal organization to spearhead this mission. They have members across Canada and they already host an annual conference which could act as a rallying point for a network leader gathering. As well, by coordinating a national CoP, EECOM would establish multiple symbiotic relationships between itself and Canada’s regional networks, thereby growing its own network while strengthening EE networking across the entire country. Kanter and Fine (2010) have recognized the important role that non-profits like EECOM can play in facilitating networking, arguing,

One constant in life is that human beings want and need to connect with one another in meaningful ways. These connections are made through social networks that are the conduits for the conversations that power social change. The job of nonprofit organizations is to catalyze and manage those conversations. (p. 10)

While I hope that EECOM will continue efforts to catalyze and manage a national network, I recognize that the organization faces the same dilemma faced by most non-profits: a chronic lack of funding (Pallotta, 2008).

The Need for Funding.

Chronic underfunding of the non-profit sector directly impacts the ability of executive leaders to participate in professional development and networking opportunities (Goggins Gregory & Howard, 2009; Pallotta, 2008). As Kate noted earlier, not only do few face-to-face networking opportunities exist, but Canada’s EE network leaders generally cannot afford to attend them (K. Henderson, conference call #6, May 25, 2012). Kate’s comments are
corroborated by Swayze (N. Swayze, personal communication, September 30, 2012) who identified funding shortages as the primary factor limiting Canadian participation at both NAAEE Affiliate Network gatherings and EECOM’s 2010 and 2011 networking events.

Travel budgets to attend conferences and similar networking events are a luxury that many struggling non-profit organizations cannot afford. From my experience, there are three main reasons why: many grants will not cover out-of-province travel expenses, it is particularly expensive to travel across a large country like Canada, and some boards will not approve travel expenses because they do not recognize the value of providing networking and professional development opportunities for their executive leaders.

While these are all valid arguments, I suggest they need to be overcome. As CBEEN’s executive director, I was only able to create a travel budget for networking because I made it a priority to do so. I recognized the value of participating in the Affiliate Network and was able to communicate this value to both my board of directors and some of the organizations that funded our non-profit. It is my hope that this research demonstrating the value of a CoP to EE network leaders will help to make the creation of a national CoP a greater priority for regional and national EE networks, their executive leaders, their boards of directors, and the organizations that fund their work.

**Online CoP Opportunities.**

Before moving on to my other recommendations, I need to make clear that when I call for the creation of a CoP for Canada’s EE network leaders, I mean to support a CoP that includes opportunities to network both face-to-face and online. My recommendations concerning a CoP’s social and technical architecture will explain the rationale behind this statement in more detail.
Opportunities for Canadian EE network leaders to network online are as rare as face-to-face opportunities. Aside from the EECoP wiki that I created, my research did not identify any other online communities of practice for this particular demographic. Although EECOM does have a Facebook page, it sees very little traffic, and has no real role in supporting networking among Canada’s regional EE networks or their leaders. In comparison, the NAAEE’s Affiliate Network has both a well-used Facebook page for general networking, and a separate site linked to the NAAEE’s website which acts as a central information hub and repository for shared resources. The fact that EECOM has a significantly smaller budget than the NAAEE (N. Swayze, personal communication, September 30, 2012) may play a role if staff resources and technological expertise are required to create an online medium for communication. However, modern social media tools are both inexpensive and relatively intuitive, suggesting that the only obstacle to forming an online CoP may be the will to do so.

**Recommendation #2: Design the CoP with both social and technical architecture in mind**

A CoP’s success relies on a careful and thoughtful balance of both its social and its technical architecture (Cambridge, et al., 2005). Cambridge et al. (2005) explain, “[t]he technical architecture supports the community, while the social architecture enlivens it [and together they] create the container for the community” (p. 2). As EECOM, or another organization, works to develop this container for Canada’s EE network leaders, they should be mindful of striking the correct balance with their design. Whereas technical architecture will obviously be an important consideration for a CoP that stretches across Canada, CoP stewards should heed the advice of Wenger (2001) who found, “[e]xperience has shown over and over that
what makes for a successful community of practice has to do primarily with social, cultural, and organizational issues, and secondarily only with technological features” (p. 45).

**Social Architecture.**

One of the biggest hurdles facing CoP designers is how to design social architecture that promotes a sense of connection, builds trust and encourages knowledge sharing among participants (Cambridge, et al., 2005). This research and the literature conclude that the solution is to focus on two key design goals: creating a common sense of purpose (Cambridge, et al., 2005; Hew & Hara, 2006; Wenger, et al., 2002), and developing social capital (Chiu, et al., 2006; Daniel, et al., 2003; Lesser & Storck, 2001). It is strongly advised that the coordinator of a national EE CoP consider these vital aspects of CoP design.

Findings revealed that EECoP participants felt frustrated by competing goals and a sense that the CoP did not have a clear purpose. In fact, as part of my action research methodology, the CoP’s purpose had been left deliberately vague in order to provide the participants with the opportunity to create their own goals. However, because the research time frame was so short, participants did not have enough time to develop clear objectives for the CoP. As well, the recognition that the CoP was only a temporary entity left participants with the impression that the true goal of the CoP was my research project as opposed to their opportunity to discuss and share the trials and tribulations of the executive director role. An ongoing national CoP would avoid these situations because there would be unlimited time available for members to discuss and negotiate common objectives and goals.

In designing a national CoP, it is not only critical for members to share a common sense of purpose, but for the stewarding organization to also have its own strategic needs met as well
(Cambridge, et al., 2005; Hew & Hara, 2006). As mentioned before, research shows that a community will succeed best when, “the goals and needs of the organization intersect with the passions and aspirations of the participants” (Wenger, et al., 2002). The NAAEE and the Affiliate Network identified this symbiotic relationship in 1997 when the NAAEE formally recognized the Affiliate Network (Price, 2012). Since that time, and particularly so in recent years, the NAAEE has benefited from the growth of the AN and the dedicated work of its members who “further the field of environmental education” (Price, 2012, p. 4). Likewise, the NAAEE supports the AN by helping to secure funding for face-to-face gatherings and by hosting an annual conference which the AN can attach its own gatherings to. One presumes that EECOM would be able to play a similar role in supporting, and being supported by, a national CoP consisting of regional EE networks.

The second important social architecture design consideration for a CoP is to build social capital among participants by developing trust, reciprocity, cooperation, shared norms and shared understanding (Daniel, et al., 2003; Nahapiet & Ghoshal, 1998). Daniel et al. (2003) argue that social capital “emerges from interaction [and] trust primarily develops through interaction in face-to-face encounters” (pp. 12-13). Therefore, face-to-face interaction appears to be a critical ingredient in CoP design.

From my own experience, face-to-face interaction was an integral component of the NAAEE’s Affiliate Network. Meeting my North American peers face-to-face, even just once, helped to break down barriers and facilitated trust and knowledge sharing. The current executive director of the Kentucky Association for Environmental Education agrees, stating, “I think one of the binding aspects of the AN is the conferences and face-to-face meetings. Knowing each
other in person makes it easier to ask for help” (A. Hoffman, personal communication, April 2, 2013). Hoffman also contrasted the success of the AN gatherings to the struggles she has been having with developing social capital within her regional networking communities, noting that, “our network in the southeast US isn't as strong because of the high turnover and lack of face-to-face” (A. Hoffman, personal communication, April 2, 2013).

The absence of a face-to-face meeting opportunity made the EECoP experience decidedly different from my time with the Affiliate Network. I felt that the lack of face-to-face interaction had a detrimental impact on the development of social capital and greatly hindered participation and knowledge sharing. These assumptions are corroborated by comments from participants. Kate stated, “I don't yet feel...connected over the phone - whether that is due to my busy schedule, [or] because we haven't met face to face, [or] because I'm not sure what we have in common” (K. Henderson, wiki post, April 13, 2012). Theresa said, “I don’t feel that connected” (T. Southam, conference call #2, March 30, 2012). Furthermore, Kate even acknowledged that future interaction with the group would be reliant upon adding a face-to-face element, stating, “Staying connected [beyond the research timeline] is unfortunately not likely, unless there is a face-to-face opportunity” (K. Henderson, summary questionnaire, June 3, 2012). Christina noted that the lack of a face-to-face component in EECoP inspired her to include one when establishing CoPs within her own regional network in Alberta, stating “[w]e have decided to start our CoP program with a face-to-face full day meeting. This CoP experience has helped reinforce this move” (C. Pickles, summary questionnaire, June 3, 2012). Finally, Sherri astutely pointed what many of us felt: “Without that little bit of personal contact, I found the rest hollow” (S. Owen, email, August 11, 2012).
The literature supports the conclusion that face-to-face interaction is an important design consideration for building social capital in a CoP. Researchers have found that it fosters camaraderie and encourages knowledge sharing (Chiu, et al., 2006; Daniel, et al., 2003; Lesser & Storck, 2001). As such, I recommend that a national CoP for Canada’s EE network leaders include at least some element of face-to-face interaction.

**Technical Architecture.**

Wenger (2001) argues that social aspects of a CoP are more important than technical ones for encouraging a participatory and thriving community. Although I agree with him, distributed communities are, to a large degree, reliant upon their technical architecture. By geographic necessity, a Canadian national EE CoP will be predominantly a distributed CoP and will therefore be reliant upon technical architecture to facilitate communication. Bearing this in mind, I recommend that the stewards of a national EE network CoP carefully consider the literature on technical architecture when designing a community. Findings from my research, combined with research from Wenger, White, and Smith (2009), as well as Wenger, White, Smith, and Rowe (2005) may help inform the design process.

Wenger, et al. (2005) warn that, “[g]ood technology in itself will not a community make, but bad technology can sure make community life difficult enough to ruin it” (p. 9). They do not suggest that there is literally good technology or bad technology, but rather that certain technologies can be more or less suitable for the needs of a particular community and the participants using it. The solution for stewarding technical architecture is therefore “to keep the focus on the community: its circumstances, its aspirations, its members, and its activities” (Wenger, et al., 2005, p. 9) while also taking into account such diverse factors as, “social
considerations, technical resources, funds, expertise, performance, and organizational constraints” (p.9).

At the same time, Wenger et al. (2005) provide the caveat: “not that a community necessarily knows what it needs” (p. 9). This warning is a reminder that technology design choices must often be a process of trial and error; it takes time for CoP stewards and participants to comprehend their needs. Beyond that, CoP stewards must survey the available technologies, and identify which technologies will both serve their needs and be readily adopted by the community. Christina touched on this dilemma in a reflective email at the end of EECoP, stating,

I so wish there was a clear answer for the on-line technology. What system will people use and contribute to? The answer probably lies in using a range of tools and not expecting everyone to use them all. Have a Facebook page, a discussion forum, a static webpage, a newsletter....Means a bit more work on the coordinator side, but as educators I guess we understand that we have to honour the different learning modalities! (C. Pickles, email, May 30, 2012)

Wenger et al. (2009) offer a template of a four step process for designing a CoP’s technical architecture that will be of benefit to the stewards of a national CoP. The first step is for the stewarding person(s) or organization to reflect on their role as the technical steward of the CoP. They must consider questions such as why they are choosing to steward the CoP, how much time and energy they have to devote to the process, and what resources are available to them. The second step is the most critical, and that is to understand the community and assess its particular needs. Every community is different, with idiosyncratic goals, budgets, and
technological savvy among its members. It is critical to consider these nuances in preparation for the third step, which is matching one or more technological platforms to the specific needs, resources, and abilities of the CoP. The final step is to steward the technology; CoP members must learn how to use it effectively, it must be maintained and kept up to date, and it should be reviewed periodically to ensure it continues to serve the evolving needs of the community and its members.

Because of the importance of step two, understanding the needs of the community, I will close this section with a last bit of advice. When considering the technical needs of a CoP, it is vital to consider what functions the technology must serve. Wenger et al. (2005) identify three main ways that technology is used in a CoP: interacting, publishing, and tending. Each will be explained below, placing the concepts within the context of EECoP’s technical architecture.

Interacting is simply communicating, either synchronously or asynchronously, and technological tools must be implemented which allow CoP participants to “connect, in and across time and space” (Wenger et al., 2005, p. 2). Examples of this could be chat rooms, message boards, or even Skype or video conferencing. EECoP used conference calls (via phone lines) for synchronous conversations and the wiki for asynchronous communication. Each had benefits, but also drawbacks, and there may not ever be a truly perfect medium. Kate reflected on her frustrations with the conference calls:

I wish the conversation had maybe been more fruitful. I’m not sure, sometimes it’s just that conference calls isn’t the way to get across the information I was looking for, in terms of sharing expertise, sharing ideas, supporting one another in terms of what we’re working on. (K. Henderson, conference call #6, May 25, 2012)
Meanwhile, Christina had issues with the wiki:

[T]he whole struggle with the wiki...it has great potential, but...when you post a question but you don’t get ANY response, it’s very disheartening. So, if you go with a wiki or with online discussion, how do you actually foster it, how do you move it forward and engage people? (C. Pickles, conference call #6, May 25, 2012)

There are no simple solutions. The goal is to find a way, or ways, to facilitate meaningful conversations and knowledge sharing in a manner that feels true to members and meet the needs of both members and the community.

Publishing denotes the ability “to produce, share, and collect artefacts that are relevant to their practice” (Wenger, et al., 2005, p. 2). This refers to archival functions to store and share documents such as strategic plans, budget templates, or grant applications. In EECoP, the wiki was set up as a possible repository for document sharing, but it was underutilized. Kate noted this, stating, “[w]e shared ideas primarily through the phone calls. I don’t think that we used the wiki as well as we could have for sharing documentation” (K. Henderson, summary questionnaire, June 3, 2012). In our situation, I question whether participants did not know how to upload their documents, or whether they did not see the value in doing so. I found this disappointing because my experience with the Affiliate Network taught me that having access to a shared archive was one of the great benefits of belonging to the community. It not only saved me time in my work, but it stopped me from reinventing the wheel. Perhaps with better training on the wiki, more members would have utilized this ability.

Finally, tending can be understood as a way of using technology to increase the social capital of the CoP. Wenger et al. (2005) describe tending as a way for members “to nurture
their togetherness...to participate personally as well as cultivate their community” (p. 2). Social media technologies are an excellent example; they provide the capability to not only share information, but to personalize a space and to develop a sense of community. Kyle acknowledged the importance of social media for tending when he reflected,

I was thinking that what was missing, what might bring us closer together is, we’re using two technologies: the call for communication, the wiki for facilitating. But I think there needs to be a third technology used for the asynchronous, when we’re not together, because the wiki didn’t seem to come around for the discussion and stuff. I think if we had a Facebook group and we could see each other’s profiles and connect on there...it might provide for a better relationship and better back and forth as well. It’s hard to have a conversation on a wiki, it’s just the nature of a wiki. But if we had something, Twitter or something, so when we’re not together we could communicate in a group or share links or something. (K. Lichtenwald, conference call #6, May 25, 2012)

Kyle alluded to the desire to communicate on a more social, personal and spontaneous level than what EECoP provided. He recognized the human desire to connect, and to see EECoP as a community of real people with distinct personalities rather than simply a random group of executive directors sharing practical information. This aligns well with the research of Wenger et al. (2005) which argues that tending “requires being able to see the community as community: understanding its pulse, its forms of participation, its evolving structure, its emerging roles, and its changing interests and needs” (pp.2-3). These views are further supported by additional research showing that social media technologies help to develop camaraderie among members.
and sustain interest in a community (Kanter & Fine, 2010). Bearing all this in mind, it would be wise to include collaborative social media technologies in a CoP’s technical architecture.

In sum, it is worth reiterating that there are no perfect solutions for all communities. There are many challenges ahead and developing a CoP with the right mix of social and technical architecture will be a process of trial and error. Stephanie recognized this when she reflected on the multitude of technological options available to a CoP, stating,

There are just so many alternatives out there and so many people use different ones. I think that’s going to be an ongoing challenge, which one is going to be the best? And the learning curve for everybody to learn a new one. And I don’t think there is an easy answer to that. (S. Yuill, conference call #6, May 25, 2012)

Clearly there are no easy answers, but we are at a starting point in developing a CoP for Canada’s EE network leaders, and it is worthwhile to take the next steps forward.

**Recommendation #3: Have patience**

My final recommendation is this: have patience. Communities of practice, like trees, take time to germinate and even longer to mature. They do not mature overnight, like so many magic beans. While this should be intuitive, it was a lesson that had to be (re)learned through the process of my research. To hearken back to Kaulback and Bergtholdt (2008): “simply providing a room and inviting people in does not create an engaged community; putting up shelves and filling them with books does not produce knowledge” (p.26). Therefore, while I definitely advocate the action of planting the seed, or building the room, or putting up the shelves and lining them with books, I also recommend that the stewards and participants of a national CoP have patience with the process and resist the urge to expect immediate gratification.
In hindsight, I recognize that my expectations for EECoP were largely unrealistic because I had not factored in the need for patience. By the time I was ready to convene our first EECoP conference call, I had been working on this thesis project for many months. As such, I felt the seeds had been planted, the hard work was over, and that community members would burst forth like ripe fruit, fully connected and ready to engage. In my haste, I had ignored the importance of developing social capital and the time that would require. Because few EECoP members knew each other at the start, the community had to overcome a period of social awkwardness before any real social bonding could develop and meaningful knowledge exchange could begin. As Nahapiet and Ghoshal (1998) have argued, time was required to develop the trust, reciprocity, cooperation, shared norms and shared understanding that create social capital and encourage meaningful interaction.

Because EECoP only interacted twice each month, it took a long time for a sense of community to form; for some members it never truly developed at all. In hindsight, this was not particularly surprising. As Kyle recognized, the process was worthwhile but there were some obvious barriers to developing community: “This experience only provided a snippet of what might be possible in developing a Canadian/Global EECOP. I think this experience was too brief and my attendance was limited” (K. Lichtenwald, summary questionnaire, June 12, 2012). As discussed earlier, many members missed up to half of our six conference calls. Therefore, in the absence of face-to-face interaction, and bearing in mind that attendance rates will fluctuate, it is imperative that CoP stewards understand that developing a community can be a long, albeit worthwhile, process. Have active patience; put in the work, but be prepared to wait for results.
In the end, as Kate noted, “I think there always has to be a starting point, so maybe we’ll be able to move it forward” (K. Henderson, conference call #6, May 25, 2012).

**Areas for Future Research**

Research inevitably reveals tangential questions that would benefit from further study. While exploring the value that a CoP might have for Canada’s EE network leaders, several areas for future research were uncovered. A brief discussion of these topics will identify them to fellow researchers, perhaps inspiring further academic pursuit in these areas.

One area for further research is to explore whether the looming non-profit leadership crisis predicted by Tierney (2006) and Cornelius et al. (2011) is coming to pass within the EE networking sector. My research supported the conclusions of Cornelius et al. (2011) that most non-profit leaders are happy in their jobs. However, the literature does suggest that a severe leadership gap is approaching. Bearing this in mind, it would be beneficial to examine whether EE network leaders are feeling increasingly burned out and making plans to leave their jobs.

A second area for further research would be to revisit the EECoP participants now, a year after my research ended, to explore how the CoP process has influenced them in their roles as EE network leaders. It would be beneficial to see what they took away from the experience and what, if any, CoP practices they have adopted within their own networks since the EECoP process. Of particular interest would be to follow up with Christina and ACEE who were initiating plans to form regional CoPs in Alberta around the time this research ended.

A third area for further research is to explore the potential adverse effects of participating in a CoP. Specifically, research should be conducted to examine whether participating in a CoP with peers who appear to be more successful creates feelings of insecurity and inadequacy. This
research direction was inspired by a response to a question about how participating in EECoP impacted feelings of isolation. Sherri, from OSEE, replied: “[i]f anything I felt even smaller and less able than the others who seemed to have more influence and time and motivation in their groups” (S. Owen, email, August 11, 2012). Sherri’s response demonstrates that CoPs may not be a positive experience for all participants. It would be beneficial to conduct research in this area to better understand the ramifications of CoP participation from different perspectives.

Finally, research should be conducted to better understand how working in the environmental education networking sector impacts the emotional lives of network leaders. Research in the field of ecopsychology argues that people working in the environmental sector are subject to a unique range of adverse emotional experiences as a result of their work at the epicentre of the ecological crisis (Leiserowitz, 2006; Lertzman, 2008). It would be worthwhile to assess whether similar results are found in other spheres of the environmental sector. In fact, I had originally assumed that network leaders would discuss the psychological impacts of their work during our CoP sessions, but the topic was never raised. Instead, my subjects appeared calm and confident in their roles. It would be beneficial to know whether their silence on the subject is evidence of denial, or whether they are truly emotionally grounded in their professions.

Conclusion

The research I conducted with Canadian EE network leaders to assess the value of a national community of practice has been a good “starting point” (K. Henderson, conference call #6, May 25, 2012); now is the time to “move it forward” (K. Henderson, conference call #6, May 25, 2012). The NAAEE’s Affiliate Network has been developing the capacity of American EE
network leaders for over two decades. It is time for Canada’s network leaders to catch up and reap the benefits that a national CoP can provide.

Communities of practice demonstrate that there is strength in numbers. Kanter and Fine (2010) have argued that,

[n]onprofits and the people within them have too much to do because they try to do too much as stand-alone organizations. Networked nonprofits know their organizations are part of a much larger ecosystem of organizations and individuals that are all incredible resources for their efforts. (pp. 3-4)

The catalyst for this thesis project was the recognition that, as a regional EE network leader, I was not alone. Participating in the NAAEE’s Affiliate Network revealed that I was not a solitary organism performing tasks in isolation, only impacting EE on a small and local scale. On the contrary, my work was “part of a much larger ecosystem” (Kanter & Fine, 2010, p. 4) of geographically distributed EE network leaders who shared similar responsibilities, who faced familiar challenges, and who were impacting EE across an entire continent. We were each other’s resources; together we could accomplish far more than any of us could accomplish on our own.

Communities of practice demonstrate that there is strength in community. Roberts and Amidon (1999) have stated,

While history is inscribed with the names of famous leaders, it is not primarily through the actions of individuals that we have survived to this time, but rather through the actions of communities. We are social animals, and only through cooperation and communication have we been able to survive the wars, famines, pogroms, plagues, and
natural disasters that beset us. Community is our basic strategy of survival and evolution. Community means the strength of unity to do the work that needs to be done. It means arms to hold us when we falter, a circle of healing, a circle of friends, someplace we can most be ourselves. (p. 117)

The “strength of unity” (Roberts & Amidon, 1999, p. 117) that I witnessed in the Affiliate Network was nothing short of an epiphany. This action research project was conducted to share that epiphany with my Canadian peers.

In the cyclical nature of action research, we come to the end of this thesis journey and yet perhaps just the beginning of a way forward for a national CoP for Canada’s EE network leaders. Wenger (1998a), speaking about CoPs, has stated, “[t]hose who can understand the informal yet structured, experiential yet social, character of learning – and can translate their insight into designs in the service of learning – will be the architects of tomorrow” (p. 225). And so, at this critical moment in time, when human actions are disrupting planetary ecosystems (Intergovernmental Panel on Climate Change, 2007), it is time to gather the architects and “do the work that needs to be done” (Roberts & Amidon, 1999, p. 117). It is time to create a national CoP for Canada’s EE network leaders.

In closing, I will state that I am hopeful for the future of EE networking in Canada. The seven professionals who joined me in our EECoP journey demonstrated passion for their work, conviction for their cause, and a keen interest in learning more about EE in other parts of Canada. They care deeply about their organizations, and share a buoyant optimism that the work they are doing is both meaningful and valuable. Joining together as a community, albeit a temporary one, provided just a hint of what a permanent national CoP could accomplish. It
would seem that the experience left a positive impression. As Kate concluded, “Creating a community of practice of professionals working and volunteering for organizations across the country definitely has the opportunity to change a big chunk of the world!” (K. Henderson, personal communication June 9, 2012). I couldn’t have said it better myself.
References


