EXPLORING THE WHY: HOW EXPATRIATE TEACHERS ENGAGE IN
ENVIRONMENTAL EDUCATION

By

JOE TEFT

B.A. Trent University, 2003
Grad. Dip. Primary Education, Murdoch University, 2005

A proposal submitted in partial fulfilment of
the requirements for the degree of

MASTER OF ARTS
in
ENVIRONMENTAL EDUCATION AND COMMUNICATION

We accept this proposal as conforming
to the required standard

....
Dr. Peta White, Thesis Supervisor

....
Dr. Liza Ireland, EEC Acting Program Head
School of Environment and Sustainability

....
Dr. Matthew Heinz, Dean
School of Environment and Sustainability

ROYAL ROADS UNIVERSITY

July 2013

Abstract

Expatriate teachers do not always have a strong connection to the place in which they are living (Richardson, von Kirchenheim & Richardson, 2006). How might this lack of connection affect how they teach environmental education? Our qualitative study explored the lived experiences of how five expatriate teachers engaged in environmental education. Using action research, we participated as a team and learned more about our perceptions of environmental education and explored how these perceptions influence our teaching. We found that our previous knowledge and passion effected how we taught environmental education. After researching how different people view and implement environmental education we reflected on our research to improve our taught curriculum. Then we used a participatory action research model to reflect and re-design our current environmental education learning engagements. After the completed research we all agreed that this method of reflection worked for us and we would continue the PAR process.

Table of Contents

Introduction

My Perspective

International school teachers often move from place to place. While travelling abroad people carry their values along with their luggage. Either explicitly or implicitly we are constantly sharing our value system with students through our actions (Hart, 1996). With thousands of expatriate teachers in different parts of the world, students from international schools are exposed to a variety of environmental values. I wondered about the values these teachers held and the actions these teachers were expressing and how that related to environmental education.

I have been living and teaching abroad for over six years. During that time I have seen many different teaching styles and approaches to learning. While observing others' teaching style and discussing their educational values I wondered what made effective environmental educators. To start answering my question I delved into my own experience (not that I am an exceptional environmental educator, but rather that I educate and care deeply about the environment) to see what influenced my values and my teaching philosophy.

One of the most enjoyable opportunities I have had while working at international schools is working on a team of international educators. Expatriate teachers live and work in different countries for a variety of reasons. Economic opportunity, a chance to see new landscapes and cultures are some reasons for moving countries. Persecution (real or perceived) can also be a reason people choose to move from their homes (Chandler,

2010). As a result I have witnessed many different worldviews (or different ways of

thinking and living) existing in the international schools at which I have been employed.

Working in different countries has brought about many positive changes in my

professional life. Through collaboration with groups of diverse professionals and

reflections on our different perspectives and abilities, I learned more about myself, and

my colleagues. For this reason I became intrigued with the participant action research

model (Reason, 1994). This model provided me with the structure I needed to explore

different perspectives, as well as my own. Drawing from a shared wealth of knowledge

has allowed me to explore different methods of teaching as well as become an active

member of my learning community.

Orr's (1990) statement that "all education is environmental education" (para. 1) is

something that resonates deeply with many environmental educators, myself included.

For us to explicitly show what we hold true about the environment (whatever that might

be) we need to think about how we interact with the environment (learning, physical,

natural, etc.). To practice this effectively, I believe that we need to regularly engage in

place-based education (Sobel, 2005). Place-based education is a way in which school

communities can actively work with communities on real projects. Students or teachers

can look at what is happening in their local community, research as a group, and then

propose ways in which they can change or maintain their current situation (Sobel, 2005).

Active involvement in the community can bring everyone closer together.   At times,

being in an international school can make me feel like I am not a part of the local

community. Using place-based education can be a way for students and teachers to learn more about their immediate environment, while interacting with community members.

In the different schools I have been a part of, I have found that no two teachers share the same background. Each one of us is different and has a plethora of experiences to share with our international students. Our individual and varied experiences shape the educators we are today (Goodnough, 2011). Since we are relying on our past experiences to shape our future interactions as teachers, we need to be aware of where we are coming from. By being aware of our backgrounds and preconceived ideas, teachers can adapt their lessons if they feel they are drawing too much from their past.

Voices

My research comes from different sources, me as a researcher, me a storyteller, and my team with their individual perspectives. In order to differentiate between these voices I will use different fonts. While being a researcher I will represent my voice using the times new roman font. When coming from a story telling, background perspective, I will represent my voice using Arial font. When making comments from meetings, using other people's perspectives, I will represent these collective voices using the times new roman font in italics. While there are separate voices throughout the paper there is a running narrative throughout this thesis. I start with my reasons for inquiring about expatriate teachers approach to environmental education, as I work through the project more voices appear. In the end, as a group, we realized the power of using the action research model, and have continued to use it to improve our teaching and learning. As an

introduction to my research, and a path to understand how I reached my research questions I offer you three different stories.

First Realization

For three years I lived and worked as an educator in Kuwait. As an expatriate teacher I felt that I cared deeply for the environment, but not specifically for Kuwait's environment. Piles of garbage and swirling dust clouds surrounded my community. As I left my apartment I would have to walk past a mountain of garbage. With no roads near my building, the trash was free to blow all across the stretch of the desert where I lived. As I made the commute to school, I noticed that nothing changed. Garbage wasn't just covering my area of town; it was everywhere. City employees were constantly working to clean up other people's mess. It did not occur to me to change the things outside my building or school. I figured it would be too difficult to bring about systemic change while immersed in a different culture. I felt the tension between what I knew was right and what was happening, and wondering how to tell people I thought they were wrong.

In my first year of teaching, I taught students about ecosystems. Instead of trying to inspire local and international students to act, I taught them about the environments of the world. Since it was in our curriculum I felt I wanted to share my passion for the environment but did not feel that I knew enough about Kuwait's specific systems (either environmental, social, or economic). Even though I cared deeply about the environment (in general), I felt unable and unwilling to work in, with, and for my immediate surroundings.

Interacting with other expatriate teachers

One of my areas of focus as an educator in Kuwait was creating and implementing environmental education standards into our curriculum. I was sitting in my principal's office one day, trying to negotiate the development of a school composting and gardening program (to meet specific educational standards). My administrator had spent 10 years on a farm with neither electricity nor water (in the 1980s and 90s). She had pumped her water by hand, composted everything, and lived (at least in my opinion) an environmentally responsible life in the United States.

As we were chatting, she threw a soda can into the trash. I stared, open-mouthed. The recycling receptacle was just outside her office. After a couple of moments of me sitting in shock, she caught herself, apologized and picked her can out of the trash and used the recycling bin. She explained that she does not often think of recycling in Kuwait. This is a person who would never think of doing such a thing in North America.

I found myself wondering what had happened and how had this disconnect occurred? From my experience she was not alone, many of my colleagues expressed outrage at certain environmental practices in their homeland, only to participate in actions very similar to those they detested while living abroad. As I left her office, I wondered about how expatriate international school teachers (and administrators) engage in environmental education. Are we just people who look to change things in/through the curriculum, or are we individuals who try to embody an ethic? Are we telling our students what to do,

or are we living what we believe (by embodying it)? My administrator had been

living what she believed back in the United States. But it seems like her actions

or ethics had changed when she moved abroad, especially to Kuwait. As

expatriate teachers do we fully embody our values? With these questions in

mind, I started to dig deeper into my own values and how they related to my

actions.

My New Space

After moving from Kuwait to Cambodia I noticed a change in myself. I

was no longer dreading going to work, interacting with local people, or going

outside. While living in Kuwait, there was garbage everywhere, my colleagues

seemed uninspired, and waking up at 5:30 a.m. was taking its toll on my

optimism. The opportunity to work in Phnom Penh with different NGOs (non-

government organizations) was thrilling, and the chance to work towards creating

change filled me with optimism. The people I worked with were deeply

interested in social and structural change. It seemed like the perfect place.

Motivated like-minded people surrounded me and wanted to make a difference.

I soon learned that this desire to create change, often led nowhere.

Some friends were easily discouraged when given new opportunities. Not

because they did not want to work, but because they had seen so many things

fail before. One of my colleagues had been trying for two years to initiate an

electronic newsletter format to no avail. I was interested in helping her out, but

she thought any further action unnecessary, as there was little hope for change.

I also approached a colleague about starting an environmental club for

elementary students. This colleague thought it would be too much of a hassle to get administration approval. Although I felt an initial strong connection to the land, and optimism for change, there were people who had stayed in Cambodia for longer, who felt very differently.

While Cambodia initially appeared to be an ideal place to conduct an inquiry into how teachers approached environmental education, I soon learned that some of my new colleagues tended to feel as though nothing would ever change. At times, when things seem overwhelming, we counter with apathy (Lertzman, 2008). I could see my co-workers develop a lack of caring about environmental education as a response to the amount of work that was needed to change our curriculum and instructional practices (Lertzman, 2008).

I still had strong hope for creating change in our school community and (perhaps) because of this optimism change started to happen. I helped initiate electronic newsletters, and eventually all of our grade level communication (minus permission forms) were sent out on a website. The environmental club received administrative approval (which I will talk about later) and the kids became active members of their school community, working to make their learning space more interesting for them by making changes they thought were necessary.

The Big Questions

Through participatory action research (PAR) (McIntyre, 2008; Mills, 2007, Reason, 1994) I worked with a small group of educators to understand why we chose to

teach environmental education the way we do and how we improved our practice. With this as a basis for my study, I pursued my research through the following questions.

- How do we (as expatriate teachers) engage in environmental education?

- How do we engage students in environmental education?

- How do teachers engage in participatory action research?

Throughout this PAR process, our team of five expatriate teachers kept the above questions at the forefront of our explorations. These questions were pursued while continuing our daily workloads. By adding a new dimension to our work (the PAR model) we proved that we could engage in participatory action research without altering our teaching schedule.

Being a participant researcher allowed me to celebrate rather than observe my colleagues work (McIntyre, 2008). As an active participant and a co-researcher we worked together as a group to reach a common goal. Moreover I improved my own teaching practices. Instead of solely watching others I took an active part in the project. Rather than only being researched my colleagues became co-researchers. I had enjoyed meeting my grade level team, and was exited to learn more with them, rather than through them.

Literature Review

Moving to a new country to work can create different tensions for individuals (Chandler, 2010). The transition to a new place can bring stress to new teachers, and this may effect why they focus on certain aspects of education (for this study, specifically environmental education). There are two main types of adjustment (Richardson, von Kirchenheim & Richardson, 2006), the first "anticipatory adjustment" (p. 884) is linked to what the new teacher may encounter when thinking about their new place. By researching, talking to other people and thinking about their desires and hopes they develop expectations about their place. The closer the expectation is to reality, the greater the possibility for an easier adjustment to their new place. These fears and expectations meet reality in the "post-arrival" (p. 885) section and changes participants' perceptions based on how they can make adjustments to their perceived notions and their new reality (Black, Mendenhall & Oddou, 1991; Richardson, von Kirchenheim & Richardson, 2006).

After teaching abroad, in four different countries, I was able to manage many of my expectations. My initial expectations of Cambodia were realistic because of the way my school engages in their mentoring practice. Annie (who was one of my research co-participants) used Skype to contact me six months before I moved to Cambodia. She eagerly told me what living in the country was like, what to expect from the community, and school, and what kinds of things I could easily purchase in Cambodia, and which ones I should bring from home. By addressing this "anticipatory adjustment" (Richardson, von Kirchenheim & Richardson, 2006, p. 884) early on in the stage, we are

better prepared to deal with the changes we will face when moving to Cambodia. Arriving to a new country with realistic expectations could help transition teachers' thoughts about their new place, which would hopefully enhance their connection to their new home.

I also believe that developing a sense of place in a classroom is one way that teachers can engage their students in creating positive relationships with their classroom or school (George, Rampersad & Herbert, 2007; Orr, 2007; Semken, 2005). "Places are given meaning by human experience in them" (Semken, 2005, p. 149). The experiences we share as a class give meaning to our place, and the same classroom can have a different meaning for students based on their shared experiences. As a teacher I have tried hard to create a place, with my students and colleagues, which is inclusive. By this I mean, the classroom is a place where people can share their feelings, we can discuss any thoughts, emotions, and we can bring things into our community to discuss. When teachers work with their students to create a shared place we can start to develop respectful relationships between the living things in our classroom (George, Rampersad & Herbert, 2007).

Semken (2005) discusses the importance of "mutually-respectful relationships among all the natural features" (p. 149) regarding indigenous people. By working with students, and fostering a relationship, or sense of place with our school, we can begin to work on these relationships to enhance our attitude towards our shared environment (George, Rampersad & Herbert, 2007). Orr (2007) describes how time is necessary to develop a sense of place. One can become enamoured with a place quickly, but a true

sense of place takes time, patience and commitment (Orr, 2007). As teachers, we need to instil and nurture this sense of commitment in our young learners.

Sobel (1996, 2004, 2008) delves into how we can engage students in meaningful environmental education through place based learning engagements. He believes that place based education is a crucial step in developing environmental awareness. By involving students in community projects where experiential learning can take place, these students may become more attached to their place, developing a more keen desire to protect it. Having students learn in their environment helps them better understand it. Sobel (2004, 2008) also asserts that this community involvement has the ability to improve the local environment as well.

From this evidence I believed that realistic expectations of a new place, developing an inclusive classroom and spending time outdoors with my students would create a deeper connection for the classroom community with our shared land. Although many of us were not from Cambodia these steps would allow me to start establishing a relationship with our shared place.

Connected to the land

My first thought, when I started thinking about expatriate teachers, was that a sense of place is deeply important in order to effectively teach about their new home. Others have researched the importance of sense of place and how it interacts with student learning (George, Rampersad, & Herbert, 2007; Orr, 2007). Orr (2007) describes a lack of sense of place as being "at the heart of the ecological crisis" (p. 49). I lived in Kuwait for three years. The longer I spent there, the more I realized how special particular places

could be, when. When I first arrived in Kuwait I had a very difficult time adjusting. While I never fully found Kuwait my home, I did grow to appreciate more about this country. I connected to specific places and developed a deepening relationship with the desert. Most of my friends however, only noticed the negative differences between Kuwait and their homeland. Since few teachers experienced any immediate connection to Kuwait (based on observations and experiences from living there), they may have dismissed the value of the desert ecosystem.

Having spent time in the northern part of Western Australia, I thought I knew what desert life was like. However, each desert is unique and I soon discovered that my idea of a desert did not compare with the reality of Kuwait's desert. There were no rolling sand dunes as I had imagined; in fact, I learned that Kuwaiti hotels actually imported their beach sand (which seems so strange in a desert). As I got to know the people and the place more I soon discovered incredible spots within my community. There was a sort of wetland in the northern part of Kuwait that was on a flamingo migration path. Wild flowers would grow in the strangest places. Although Kuwait was not a desert I initially understood, I grew to love it the more time I spent in the country.

I started a primary school environmental club so we could all learn more about where we lived. We asked our staff member who was in charge of taking care of the plants what things grew best in Kuwait, and how and where we should grow them. With our group we started our own little garden. While we did not have much growing success, we did discover surprises along the way. We found mushrooms growing behind the school, animals eating our plants, and

the value of water. My students and I were learning more and more about our shared place, and as our knowledge of our place grew, so did our affection for the natural aspects of Kuwait.

Through preliminary research (Tuan, 1977) I realized that place attachment can alter perceptions of the environment, which can, in turn, alter our actions (Semken, 2005). This lack of sense of place, which Orr (2007) may attribute to the amount of time spent in that place, could mean that international educators react strongly to isolated incidents. Lingering for an extended amount of time in a place would facilitate a better understanding of the cycles and systems in that place, meaning one isolated incident could have less of an emotional impact (Orr, 2007; Semken, 2005). By spending more time in a place our feelings intensify (Orr, 2007). If something negative happens after we have built up this relationship with a place we are less likely to change our feelings because of our deep-rooted sense of attachment (Orr, 2007; Semken, 2005).

My experience in Kuwait led me to believe that people who are not connected to their new place have little reason to maintain, or improve or even care about their immediate environment. Some expatriate teachers are constantly moving from country to country and, as a result, seem to demonstrate no direct connection to a specific location/environment. This lack of attachment caused by social developments and place attachment, may lead individuals to display negative environmental behaviour (such as my administrator's actions) to the place they are currently occupying (Marcoyeux & Ghozlane, 2011).

I believed that it was necessary to create a sense of attachment to new local environments, as it enabled a deeper connection and positive environmental practices. Tuan (1977) thought it possible to establish a connection to a new place quickly, while Orr (2007) concedes it is possible to develop an "infatuation" (p. 50) with a place quickly, he thinks that time is needed to legitimately establish a sense of place. Superficial connections can be made, for instance while on vacation, to a place that may elicit strong feelings or ties to a particular spot, but they do not foster the connection needed to truly feel a sense of place (Orr, 2007). For this paper a sense of place refers to the place attachments, or human emotions tied to a specific place (Orr, 2007).

In my own experience, I know that I have connected quickly with certain places, based on a variety of reasons (aesthetic appeal, access to activities, community involvement). However, the places I feel most connected to are the ones where I have spent significant amounts of time. Alas, I have not spent a considerable amount of time in any one area since growing up in Sarnia, Ontario, Canada. (Orr spent ten years in the Ozarks, which suggests that this may be a length of time that might be necessary to really know a place). Throughout this project I have wondered about the amount of time needed to spend in a place to develop a deep connection, and although there is no conclusive evidence I came to believe it was a different amount of time for different people.

As teachers we can use the concept of place attachment to enhance environmental instruction. Through specific place developing exercises, like experiential learning programs (Payne & Wattchow, 2009) we can have students learn more about their place

through observation and reflection exercises. Having students construct their own meanings through observation and revise those ideas through further reflections helps students own their ideas (International Baccalaureate Organization, 2009). The everyday interactions between humans, non-humans, and where they live are mostly unnoticed. Hardly any of my colleagues take the time to observe which animals or insects pollinate specific plants. By taking the time to embody these everyday experiences teachers and students have the possibility of creating a deeper connection to a new place (Payne & Wattchow, 2009). "A slow pedagogy, or ecopedagogy, allows us to pause or dwell in spaces for more than a fleeting moment and, therefore, encourages us to attach and receive meaning from that place" (Payne & Wattchow, 2009, p. 16). If we can connect expatriate teachers to their land quickly, and then have them engage in experiential learning programs with their students, it is possible to develop a localised sense of place. By developing reflection and thinking spaces for students and teachers we could potentially change how expatriate teachers act in their new environment.

While connection to environment is important educators also need to be aware of how they manage their classroom(s). Spaces become places when human experiences give them meaning (Tuan, 1977). We need to create meaning from our previous experiences because without our perceptions, places would remain spaces (George, Rampersad, & Herbert, 2007). By working with our students to create a shared meaning of a classroom we can create a more democratic environment. A classroom that is a co-created space has an opportunity to be a more effective learning environment because all members have worked together (George, Rampersad & Hebert, 2007).

Place Based Education

Place-based education seemed to me like a natural way to mix the ideas of a sense of place with education. Sobel (2005) urges us to "bring education back into the neighbourhood" (p. 8). By using the neighbourhood as a place for learning students have the opportunity to become both learners from and contributors to the local community (Sobel, 2005). As teachers we have an opportunity to use local knowledge to engage students in local environmental education. Instead of writing about abstract comments, we can ground children in their particular place/space/environments/ecosystems.

In an international school setting we have the opportunity to think of place-based education as contributing heavily to environmental and cultural outcomes. "Communities, whether ecosystems or human systems, are characterized by sets, or networks, of relationships" (Capra, 2005, p. 20). These relationships can be the focus of our educational system. How do we relate to both the environment and the community around us? Even if we consider ourselves expatriates, we are living in a system; and we need to appreciate our local systems. By building on our appreciation, we will begin to see connections to other places, and other systems we know. Using place-based education can help us (ourselves and students) engage in environmental education.

What Shapes Us?

What we believe transcends our thoughts and integrates into the way we teach (Moser, 2007). Our values are passed to us from our community members, parents, teachers, and society (Moser, 2007). Through these values, our actions spring forth. We are products of our community, and our community is shaped by the idea of our home space. The people and values that surround us growing up shape who we are going to be

in the future (Moser, 2007). How do our previous experiences effect how we shape future students in different places? From my own experience, I knew that the way I taught/teach is based on my previous encounters with school and teachers. I choose to teach in a way that I wanted to be engaged as a student. Reflecting on what interested and motivated me as a learner influences the way I engage the people I am working with. While teaching specific content and general knowledge is important, it is not the only thing that shapes us as educators (Wilcock & Herzog, 2004). Our involvement in our community creates experiences, which we learn from (Moser, 2007). We react to these experiences in different ways that may have an impact in how we engage students (Wilcock & Herzog, 2004).

Teachers have a variety of reasons for teaching (or not teaching) environmental education (Hungerford & Simmons, 2003). In some schools it is not necessary or required to teach environmental education. While this is not true for my school, there is typically no established environmentally focussed curriculum. This means teachers' perceptions of environmental education dictate what and how they teach (Bengtson, 2010; Hungerford & Simmons 2003). How we perceive what we to teach can lead to how we engage students.

Through critical self-reflection, we can better understand what we believe, which allows us to think about how we engage our students. Critical self-reflection occurs when we question the underlying reasons about how and what we teach (Brookfield, 1990, 1995). Bengtson (2010) says that we are aware of both our perceptions and our setting when we engage in environmental education. By questioning what we are

teaching and why we are teaching a specific way we can assess why we are teaching

environmental education and attempt to improve our ability to engage students

(Brookfield, 1990, 1995; Bengston, 2010; Hungerford & Simmons, 2003).

As teachers move around, they may not have acquired the knowledge necessary to

teach relevant environmental facts. This dissonance between knowledge and applied

values may hinder how expatriate teachers engage students in environmental education.

Sammel (2005) asserts that knowing who we are as environmental educators is a first step

in understanding our educational program. This project was aimed to develop an

understanding of who we were as environmental educators. The perceptions of our

shared place effects how we teach about the environment. As a result we may need to

learn more about our new homes (through interacting with long standing members of our

learning community) before creating an effective program.

Experiences also help to shape our value system (Chawla, 1999). As expatriates,

we have all come from different places, and believe different things. While many of us

who travel experience similar occurrences, our previous experiences shape how we

perceive our life in our new home. I wondered how significant life experiences shape

who we are as educators (Chawla, 1999; Anderson-Patton, 1980)? Lewis' (2005)

research shows that most significant life experiences that developed caring environmental

educators happened in or around nature. While I remember spending a lot of time outside

as a child, I do not recall one specific experience that led me to care deeply for the

environment. For me it was research, and learning more about what was happening in

my local community and the world at large. I was interested to know what my teammates

at this school thought, and how their experiences had shaped them. If, as educators, we can harness the power of significant life experiences, and tie them to nature, we could enhance students' interaction with their local environment.

Theoretical Frameworks

Embedded in this study is the post-structural idea that knowledge is co-created and an absolute reality can never be known (Goodnough, 2011). As an educator, I believe that students should have a hand in creating their own knowledge, and then use this knowledge as information to create a change in their community. While there is no absolute reality (Goodnough, 2011), we, as a class and as a learning community, can construct our own beliefs that can lead to change. Throughout this project we, as a team of educators, needed to create our own ideas and view environmental education through our own perspectives.

I believe that the ultimate goal of knowledge is to change society. Using knowledge for change is part of a critical theory perspective (Peca, 2000). Critical theory also plays a large part in this research. By creating and re-creating our environmental education programs, it is my hope that in the future our students will be better able to transform their society (Fien, 2000). I do not believe there is one truth. There is no universal right or wrong. Our duty, as educators, is to look within ourselves, and our community to take action towards creating a more sustainable world/better future. Using a critical theory perspective allows me to look at who holds power in our society. Then use our shared knowledge to transform educational outcomes.

Critical awareness in both students and teachers is not a product; it is a way of being, a process (Sterzuk, 2008). During this research I needed to challenge my own and my co-participant's assumptions of environmental education. By demanding ourselves to critically reflect on our practice, we can look at ways in which we can make environmental education more effective for our students.

While reading about critical discourses, one quotation immediately resonated with my feelings of creating a change in environmental education.

> It is possible to train new teachers; but, how to [sic] encourage more traditional ones to change what they have been doing for 20 years? How about directors and the demanding school board? And let's not forget the signficant resistance to change coming fom the parents. They went to school in the *good old days*, how can we convince them that teachers are not lazy public servants, always demanding more money for less work, ie. less red pen marking? How can we push the education milieu to embrace change? (Desautels, 2008, p. 55)

How can we question others if we do not question ourselves? While it is important to look at what our school offers for environmental education, it is imperative that we question our own actions as teachers. Using critical reflection (Brookfield 1995) and a post-structural approach (Goodnough, 2011) we could delve deeper into how we taught education. Instead of superficially looking at the curriculum, or pointing fingers at the reasons why we were or were not engaging our students in environmental education, we could ask ourselves our thoughts about environmental education. By looking into ourselves, questioning our assumptions, and making a plan to change our actions we, as a

team of educators, could create change in the way we teach environmental education

(Brookfield 1990, 1995; Fien, 2000; Peca, 2000).

Methodology

Through participatory action research we explored how five expatriate teachers in Phnom Penh, Cambodia approached environmental education. We questioned what we thought we needed to change in our taught curriculum and worked together to create such a change. Our team focussed on our written and taught curriculum in the primary years program (International Baccalaureate Organization, 2009).

The primary years program, or PYP, is based in/on inquiry-based pedagogy. Using guiding questions students learn by being confronted with problems they can solve. Throughout the learning process students are invited to construct their own meaning, by researching possible answers to the guiding questions and trying out possible solutions. Concepts and larger ideas are used to engage students to learn content. The PYP embraces students bringing their own perspectives into the classroom and supports teachers to use a variety of methods to engage learners in specific tasks. In this research both the PYP principles and the PAR planning cycle are used as the foundation of our research (International Baccalaureate Organization, 2009).

Action Research

Action research involves a process of planning, acting, observing, reflecting, and then repeating the cycle (Melrose, 2001). The first part of this process requires us to think about where we (as individuals within a group) are situated and what values we hold. If reality, as we understand it, is created by individual perceptions then reality must always be changing (Peca, 2000). We needed to be able to understand where our

perceptions were coming from in order to challenge our students' perceptions. As individual teachers, reflection is a major aspect of the teaching process (Jaipal & Figg, 2011; Peca, 2000). We have the opportunity to change our practice based on reflection. If we see something is working well, we note it and use it again; if something is going poorly we try a new tactic (Jaipal & Figg, 2011; Peca, 2000).

The same idea applies to groups of educators. Teams have reflected on their practice as individuals and as groups. Through group reflection others have changed their professional practice and enhanced the way they interact with students (Jaipal & Figg, 2011; Peca, 2000). As a group we used these ideas to shape our year of action research.

Glazer, Abott, and Harris (2004) noted that teachers who were using an action research approach to professional development found this process to enhance their personal and professional experiences. This does not mean teachers should be talking more to other teachers; rather, action research requires us to be critically reflecting on a specific idea. By trying different techniques and models that are self-selected by the teachers we can develop transformative experiences for our students (Jaipal & Figg, 2011). Our research project engaged us as a team in critical reflection, then we produced an action plan for improvement; finally, we reflected on both the changes we implemented and the process we used. Using an action research approach of planning, acting, researching, and reflecting helped my team both professionally and personally (Glazer, Abbott & Harris, 2004).

Participatory action research (PAR) involves the core planning methods from action research however all participants operate as co-researchers sharing the

responsibility and management of the research (Reason, 1994). PAR has a democratic

process that aims to bring reflection, theory, practice, and participation together (Reason

& Bradbury, 2001). Reason (1994) states that PAR embraces the values, experiences,

and knowledge of all people involved in the process. An objective of PAR is to produce

knowledge and create action (Reason & Bradbury, 2001). Both knowledge and action

have to be directly useful to the people who are involved in the change. Another aim of

participatory action research is to empower people through the process of constructing

their own knowledge (Reason, 1994). As expatriate teachers, my teammates and I have

knowledge about our curriculum, but we also understood that our knowledge and

methods of teaching environmental education needed to improve. As a group we

reflected on our experiences and created new learning engagements that were useful for

our learning community.

Community meetings are an important part of the PAR process (Reason &

Bradbury, 2001; Reason 1994). As a community we will have to meet often to identify

issues, reflect on our progress and continue to develop our action(s) (Reason, 1994).

When more people get involved in change, and the initiatives are seen as a community

choice it can lead to a change that is more accepted than a hierarchically enforced change,

or change that is directed from the top down (Whyte, 1990). Our team needs to see

ourselves as working together as a group to create a change that is best for all of us. As a

researcher, if I were to impose a change for environmental education, it may not have the

same impact as a community generated change. My co-participants are not clients, or

subjects; they are co-learners and co-creators (Elden & Levin, 1990), and colleagues. By

using their expertise and insider knowledge the co-creation of action makes PAR a unique and valuable tool for researching.

Cahill (2007) warned researchers about the emotional processes involved in PAR. Any time we are engaged with groups, we need to be aware of others' perceptions as well as our own. For this thesis I also needed to be aware of the I/we aspect of researching. While I am the primary researcher, in the sense that I am the one writing the thesis, I am not the sole researcher, or the sole member of the group who has invested time and energy into this research. We are researching as a group, with a specific purpose and distinct roles; I am just a part of that process (Guishard, 2009). The distinction between me as a researcher and me as a co-participant makes PAR unique and is one of the reasons why I chose to use this as my research methodology.

In order to make the most of our community we needed to develop our identity as a group. While any group decisions might be more difficult and more time consuming to make, it was important for the end result that we worked as a democratic team (Kalliola, 2009). From past experience I knew that our team usually followed a democratic process. We had a team leader who organized our meetings, but we all participated in a variety of ways. At the beginning of our time together we described what we thought were our strengths, and each of us contributed to the best of our abilities. While we have a leader, however, we made decisions as a group using a majority ruled method.

Participants

All of my co-participants have had their identities transformed for the purpose of publically reporting in this thesis. The thoughts and actions attributed to their

pseudonyms are consistent, and each pseudonym represents one person. They had some input into selecting their pseudonyms and are aware of the actions I have taken to hide their true identities.

Action research (and participatory action research) needs purposeful sampling (Lingard, Albert & Levinson, 2008). By involving my team members I met this criteria. All teachers are expatriate educators who were selected because of their role on the grade 2/3 team, and their knowledge of the school and the curriculum.

The five members of my team are numbered below, starting with myself.

1: I have spent my entire teaching career (six years) overseas. I learned the Curriculum Framework of Western Australia while studying in Perth. Then I moved to Korea, I taught ESL in two different cities. From there I moved to Kuwait where I taught and led a team of five educators for the past three years. I recently moved to Cambodia in order to live and work. I have always been concerned about the environment however; before undertaking graduate work I had not focused on how to teach environmental education explicitly. Before conducting this research, I thought that immersing students in nature and providing them relevant and engaging tasks would engage students who would then create their own knowledge. Moving from place to place made me question my connection to each new home. Through involving myself in a group of expatriate educators I was eager to learn more about how different perceptions of the environment resulted in different ways to engage students in environmental education.

The year of research was my first year at this school, and also my first year in a primary years program (PYP) curriculum of the International Baccalaureate Organization,

2009. I felt that I could use the inquiry base of the PYP, as well as the rigour of the PAR process to bring relevant environmental education to our students (Hughes, 2003; International Baccalaureate Organization, 2009).

2: Leslie has thirty years teaching experience, with eight years at our school. She comes from England and was our team leader. Her main focus in environmental education was geography. She believed that by getting to know a place, one became more attached to it, and more likely to get involved. Her three biological children often parrot back the importance to her about the 3rs (reduce, reuse and recycle) but, from her perspective, seem to take little action to improve their environment (Leslie, February 1st, 2012). By fully embracing the action research model, Leslie hoped to learn more about how she involves herself in environmental education and how she could improve her teaching to influence students to make better decisions about our shared future.

3: Annie comes from Scotland, she had been teaching for five years at our school, but comes from an international development background. She cared deeply about how people are treated and mistreated. Her partner works with a local NGO that helps educate and protect street children. She believed that by educating people about how to interact appropriately with their environment (especially through social development enterprises) we could make the world a better place. Annie wanted to develop the economic side of sustainable education believing that while people are poor, and struggling to meet their basic needs they are often unable to take action to help the environment. Her focus was on helping people reach those basic needs in order to make a more sustainable future.

4: Clarice, a Western Australian, had been living and educating in Cambodia for the past six years, and has twenty years teaching experience. Clarice's partner was an agricultural worker in Cambodia. He worked for an Australian organization that helps improve farming techniques to create sustainability in local practice. She believed that permaculture is an important aspect of environmental education, as students needed to know where their food was coming from, and where it was going in order for us to understand our interactions with our environment.

5: The final member of our team is from South Australia and had been living and teaching in Singapore for the past ten years. Martha did not have a specified interest in environmental education up to this point. She was deeply concerned by the number of people who (don't) go outside to play. Martha thought that her classroom location, and the amount of time between breaks made it difficult for her students to play outside. While teaching in Singapore she saw that there were no 'green' spaces for children to play in, this made her question how people can engage in environmental education without access to nature.

Study Design

PAR is a process of constantly reflecting about the theory and application of knowledge (McIntyre, 2008). The PAR cycle of learning relies heavily on the researcher being a part of the community (Hughes, 2003). Our cycle started with a meeting where we reflected on where we were coming from regarding environmental education. By reflecting on our practice we initiated the PAR cycle and learned more about each other and came to some collective thoughts about what we believed makes a good

environmental educator. The initial meeting was semi-structured with the purpose of having the group discuss their feelings and emotions regarding environmental education.

Since the structure of this meeting was important I conducted a pilot interview (Cresswell, 2007) with a secondary school teacher in order to make sure my questions were not leading, but probing for intriguing responses. We discussed the wording of the research questions, and agreed to rearrange the questions as necessary. I also altered some of the wording from my discussion questions in order to facilitate more input from others. By reframing some of my questions to include a positive approach, we had hoped that our discussion would revolve around more about what we were doing, rather than what was missing from our curriculum.

The initial meeting started to uncover some answers to the first two research questions: How do we engage in environmental education; and, how do we engage students in environmental education? The purpose of this meeting was to look at both individual and group perceptions of our current environmental education program. Melrose (2001) acknowledges the importance of each participant's perceptions and looks at how it adds value to the study. PAR is built on the values of each participant (McIntyre, 2008; Reason, 1994) so it was important that we all knew more about each other's perceptions and values. By using this as a base from which to work, we shared what we valued, and I believed created a more coherent group.

Reflection is a large part of the PAR process because it leads us to future action (McIntyre, 2008). As a team we are required to meet three times a week. One of these meetings is strictly for curriculum development. I suggested that we use this meeting to

enhance one of our units of inquiry (International Baccalaureate Organization, 2009) as well as reflect on the PAR process. The meeting was divided so we could focus on each part separately.

Each meeting was voice recorded and then transcribed. There was a back up a copy of each audio file on an external hard drive. Throughout the PAR process I also took detailed notes of our meetings regarding participants actions or concerns that were not recorded. These notes were saved on my computer and backed up on both my external hard drive and googledocs. I asked the participants to use googledocs to write their own feelings, emotions or reflections regarding our meetings. The ability to reflect and contribute at any time is part of the PAR process and it would help me to understand some of the emotions and feelings connected to creating a new program of inquiry (McIntyre, 2008). After each meeting the team members worked individually on recording their feelings and responses on googledocs. Initially there was full participation, but as teachers felt the pressures of time they contributed their thoughts and feelings sporadically, or when reminded to participate.

Each of us had the opportunity to choose how we wished to reflect but we would have to share our reflections with the group. Using this method of reflection allowed all of us to look for themes in our understandings and actions. Through each individual exploring the results of our meetings we continuously reflected on the participatory action research process. Although this research has been cumulative in the sense that the thesis is a finished product: we all hoped that the PAR process would continue after the research is completed.

At the end of our research, I asked my team members to work on a final reflection piece. Our group decided it was easier to produce our common reflections on googledocs; however, some members wanted to provide an additional personal reflection, in case they wanted to share more personal feelings. The reflection manifested itself as a culmination of thoughts regarding the PAR process, what we had learned about ourselves, or any information about how to engage other teachers or students in environmental education in the future. It was important that as a group we discussed where we started, how we have changed our practice, and whether or not we thought our new practice was effective (Melrose, 2001).

Data Analysis

Throughout the year we analysed and compared the data from our reflections, meetings, and meeting notes. By discussing the notes from our previous meetings, we looked for themes that emerged (Charmaz, 2006) regarding how expatriate teachers engage in environmental education, and how expatriate teachers engage students in environmental education. This constant analysis intended to keep our team up-to-date on our googledoc as well as allow us to use a constant process of looking for themes (Charmaz, 2006). By keeping our research firmly lodged in our data, our team hoped to explore our unfolding group narrative (Charmaz, 2006).

Developing themes emerged from looking through our research as we reflected on our current practice and made some necessary changes to engage students and ourselves in environmental education (Melrose, 2001). For our group this was somewhat more effective than the planned reflective journaling. During our group meetings we often

wanted to rehash what was presented at our previous meetings. We talked about how our thoughts have changed, and described certain parts of the PAR process over and over again. Although we did not achieve our goal of constantly looking for emerging themes (Charmaz, 2006), we were often looking at how our practice matched up against our ideas of best practice and the steps we needed to take to really change how we participated in environmental education. We started our reflection meetings by discussing what we had done and what we had read.

Our meetings were analysed from a narrative inquiry perspective because it allowed us to explore each other's personal histories, which provided insight into our current decision making processes. Narrative inquiry asks us to look at the story as it unfolds, and using the narrative as a base for research (Clandinin & Connelly, 2000; Newman, 2000). I deeply appreciate the personal approaches and values each person brought to the discussion and rather than seeing a singular truth I welcome different perspectives of truth. Narrative inquiry allowed us to look into each other's ideas of what makes an effective environmental educator and what learning engagements work for some students and teachers. Having explored our own and other group member's perspectives on environmental education, we were better able to reflect on our personal practice.

The findings were analysed through a narrative inquiry perspective. Using narrative inquiry allows us to explore the data as the story unfolds (Clandinin & Connelly, 2000; Newman, 2000). Instead of projecting where we thought our research

was headed. We looked at what we were saying and doing, and used that data to explore further topics.

Validity

In order to ensure validity and reliability each member had access to all the information we produced. By using googledocs, each member of our team had the opportunity to ensure their words, thoughts, and opinions are indeed their own. As I worked on synthesizing the data, I frequently updated our collaborative information on googledocs to ensure that my group members agreed with how I interpreted the process. Making all the information available allowed my colleagues and I to fully explore how we engage in environmental education. This iterative process also gave us opportunities to focus on certain aspects of our teaching during meetings.

Limitations and Delimitations

One of the delimitations of my study has been working in a small group. I have chosen to work with only the people on my grade level team. With five people to interact with I can understand our values and perceptions better than if I was working with the whole school, or multiple schools. Moreover, with fewer people involved each person gets a larger say in the action research process. PAR values all the contributions of the individuals and in a larger groups there is a bigger chance of some individuals not participating (McIntyre, 2008).

Another delimitation is that I have only been studying with expatriate teachers. This is a personal choice since I want to continue living and working abroad. It is important for me to understand how an educator can be concerned about engaging

students in environmental education, without having a life long connection to the place in which they are living.

One of my main limitations is that I have focused only on researching grade 2/3 teachers in Cambodia at a well-regarded international school. This means that I only have access to one group of teachers in a specific school with a specific philosophy. The International Baccalaureate in the Primary Years Program intends to integrate all aspects of learning, including environmental education into its curriculum (International Baccalaureate Organization, 2009).

Another limitation is the amount of time I have to work on the project. The PAR process requires reflection, picking an action, implementing an action, and then goes back to reflection (McIntyre, 2008). As a result, I had time to cover four months of co-research but I think that more time would help us uncover deeper themes and enhance our ability as environmental educators even further.

Findings

Introduction

Participatory action research is a continuous process that involves a considerable amount of time (McIntyre, 2008). As a result, the bulk of this paper is dedicated to the process of our work. Since PAR involves collaborative planning, thought and action (McIntyre, 200; Reason, 1994), I believe this is an accurate reflection of the importance of our work together.

Organizing ourselves

While researching and preparing for the PAR process, I started to worry about how best to organize my thoughts into a thesis, and the project all around. Guishard (2009) warns that at times researchers can highjack the PAR process and use it to only fit their research, and their objective. In this project, I have specific research questions and a finite amount of time. PAR urges co-researchers to work with the group to solve a problem that is meaningful for all the participants. As the process started I was worried I was putting my own agenda ahead of what was important for the participants involved. McIntyre (2007) mentions there is no fixed formula for conducting a PAR project. There is no certain way to work with the people, and no over arching plan from which to conduct the process (McIntyre 2008). Kuriloff, Andrus and Ravitch (2011) say that is important to keep democracy at the centre of our process. So it is possible to have a pre-set agenda without interfering with the democracy of the process. Our goal (decided upon as a team) was to redesign two of our units of inquiry, looking at how to deeply

engage our students in the environment. The units under review were our "Sharing the Planet" and the "Where We Are in Place and Time" units (International Baccalaureate, 2009). Both of these units have seemingly easy connections to environmental education. Originally, I was hoping to focus solely on our "Sharing the Planet" unit of inquiry. However, due to short conversations, and larger time restraints, we decided that we could make a meaningful difference by adding more environmental awareness into our "Where we are in Place and Time" unit. By using the democratic process with my team, I was able to be more comfortable with how to organize our agenda, rather than focussing only on my agenda (Kuriloff, Andrus & Ravitch, 2011; McIntyre, 2008).

While researching the PAR process, I was assured by the comments about the difficulty of starting a collaborative project in Wicks' and Reason's article (2009). While they mention that the PAR cycle of reflection, coming up with an action, action, and then reflection is a major component to a successful project, they also note that an effective group is likely to be more successful (Wicks & Reason, 2009).

Before starting the process many things have made me nervous, however, being a part of this group has been incredibly reassuring. My team functions well together. We take roles, switch them, try new things and have an "open communicative space" (Wicks & Reason, 2009, p. 243). Three fifths of our group have been together for more than three years. There has been an "open policy" to our discussions throughout the year. This "open-policy" allows us to talk about anything we need to talk about without fear of being treated poorly afterwards. We were all encouraged to speak our feelings, hopes, or fears being assured that nothing would be taken out of our meeting. This has taken a lot

of trust, but over time, we have built a relationship that fosters openness. As a group, we have had smaller and larger disagreements regarding teaching, communication ideas and organizational worries. These have all been dealt with in an open way, making sure all of our opinions are heard, with little emotional impact on the group. We all respected and understood each other's point of view and took this into consideration when we were making group decisions. I was confident our group would be supportive, and take meaningful action to improve our and our students' learning.

At our first meeting we discussed how the team already felt overburdened by their teaching load and current reflection process (Feb 1st, 2012). Cahill (2007) warns us that critical research has pointed out that PAR projects that are linked to scholarship may only use a token form of participation. We needed to make sure our project was not tokenism, but filled with substance. As a team, we wanted to do something that benefited the learners, ourselves as educators and the larger school community. Before this project started, I was concerned that we would not have negotiated our own PAR process, and we may not be working together. I hoped that I was not the only one interested, therefore hijacking the PAR process (Guishard 2009). After this talk, we discussed that this project had the opportunity to enhance all of our abilities, we just needed to ensure that our meetings were deliberate, and purposeful, and that we each had a say in where we were headed as a group.

From our brief talks as a group we were all aware of our abilities/inabilities as environmental educators. We needed to develop the competencies to be able achieve our goals (whatever they turned out to be) (Guishard, 2009). Our talks about individual and

group goals provided us with a loose framework from which we could critically reflect on our practice. Since we had some specific things (like our curriculum) we would like to develop, we had to develop these competencies necessary to improve our ability to engage students.

Initial Experiences

Starting the PAR process was a slightly daunting experience. My co-workers all have families, children and other duties beyond teaching in the classroom. Many teachers, including each one of us, feel like they don't have a lot of time (Asman 2009, Collinson & Cook, 2000). Adding extra work to their daily lives was not my objective. I was worried that working on this new project could lead to extra stress, which would lead to a lack of interest. Furthermore, I was worried about how my team would view me. I did not want to be the one making them do extra work, making them spend more time research, or changing units they felt were successful. I knew that participatory action research had the potential to create a significant change in our working lives (Reason, 1994) but I still worried about the extra stress I was putting on my team, and myself. PAR is supposed to come from a group of concerned individuals trying to make a change in their lives (Reason, 1994). My desire was that early on my co-workers would see the benefits of this process as well as enjoy researching together to make our learning engagements more effective.

The PAR Process

The headings in this section are described as parts of the PAR process, and will be repeated, mirroring the cyclical nature of our project. The heading 'Reflection' will be

the talks our group shared about what we were doing, 'Research' will be about what we chose to research and 'Action' will be about the actions we took. Theses sections, like the PAR process will not always be in order, and will repeat.

Reflection.
Since we had decided to attach our PAR meetings to our normal meetings we thought about the frequency in which we would need to discuss our progress. We decided that once, or twice a week we would end our meetings discussing the actual process and the readings we had discovered, the meetings that involved planning would take place as normal. When recording the meetings, I would transcribe only the aspects of the meeting that had to do with our PAR planning or reflection. I would not include our normal agenda in our PAR meeting minutes.

I started our first meeting meeting describing the PAR and AR cycle. McIntyre (2008) discussed how her PAR group developed their own definition of the PAR process. We attempted to do the same. As we talked about the process we noticed the similarities between the action research process and the International Baccalaureate planning process. For instance, both start with the need for reflection (International Baccalaureate Organization, 2009; Reason, 1994). The need for action based on reflection is embedded in both of these processes; learning from experiences helps scaffold future learning, making the entire process more meaningful for the people participating in these sorts of projects. Similarities help to provide comfort, and this particular piece of information helped release some anxiety from the group. Our group decided that we would participate as honestly as we could (February 1st, 2012). This means that our focus was not on the amount of discussion we generated but how we could question our own

actions, our groups' actions, and develop a plan to change our educational practices that made sense to us as individuals and as a group. We all agreed to participate in all the parts of our process, to work together as best as we could and to trust and respect each other's viewpoints (February 1st, 2012). Since we had been working as a team for some time, this was a reaffirmation of our original essential agreements about how we would interact in our meetings.

The Primary Years Program (International Baccalaureate Organization) usually plans following a model similar to Understanding by Design (UbD) (McTighe & Wiggins, 2005). The Backwards Design method is an education concept where you first choose the main concepts or enduring understandings you want the students to know. You then work on what summative assessment will show the students understanding. From there you work on the learning engagements and tensions that we create with our students (McTighe & Wiggins, 2005). Using the UbD format allows us as educators to focus on the concepts first, rather than try to make an assessment task out of lessons. Our regular reflections follow the above routine. First we look at the main concept we are trying to teach, we start with a statement and then create a question, which students can inquire into. Then we look at the ways we will approach the question, after which, we look at the summative assessment, which is usually a performance-based activity. Our group can usually reflect on the central idea of our unit, and summative assessment in two meetings.

Keeping with both the International Baccalaureate (IB) planning cycle and the PAR cycle, we decided to start with a reflection from the previous time we had

encountered the two units. This allowed us to look at how we had engaged students in the past, and where we hoped to make changes in our program of inquiry.

During our first meeting we decided to think about our first unit of inquiry. We decided to keep with the central idea, our main focus or enduring understanding, (International Baccalaureate Organization, 2009) that waterways influence human settlement. *We have to look at the big picture, about why water is important. That should be our enduring understanding* (Martha, February 1st, 2012). Martha mentioned the need for a deeper understanding of what water actually means to us as humans early on in our meeting. As a group we decided to focus more on why water was important to living things during our classroom discussions rather than looking solely at the formation of waterways, which is something we had done in the past. We chose this idea so that students would be able to see the importance of water as a reason for settling near it rather than talking about specific waterways and how they are important to people. We thought that this would give students more of an opportunity to look at how and why water was important to them, making a personal connection, than why water was important to a group of people who students may not have a connection with. Previously the unit had been more about how waterways were created, and the specific names for different parts of the waterways. While we acknowledged that this information was important, we wanted to make these lessons relevant and engaging for students. Furthermore, we wanted students to have a deeper understanding of the importance of water and how all life is connected to waterways (Joe, February 1st, 2012).

Our second unit of inquiry was under the transdisciplinary theme of sharing the planet (International Baccalaureate Organization, 2009). During our previous reflection session we noticed that we focused a little too much on persuasive writing. *We need to do more relevant action, more that's tied into science and resources* (Annie, February 1st 2012). Annie brought this up because we were far too focused on getting students to talk about simple tasks like clearing beaches, using less rubbish, and recycling. As a group we felt that our students knew quite a bit about recycling, and were already doing it to the best of their ability (because of limited recycling options in Cambodia). We wanted students to think of a larger, longer-term action project they could do in order to be really connected to the central idea. For this unit we decided to have our central idea should be "We have a responsibility to protect and preserve Earth." This led us to look into Sobel's (1996) idea of place-based education.

Two of us had not been here the last time these units of inquiry were taught. We all noticed that there was a lot of opportunity for a different type of teaching in these units. Instead of just focusing on the academic side of things, we wanted the students to explore ideas for themselves. After attending a workshop on inquiry based learning, we discussed the need for open-ended, unstructured time for students to pursue their own individual interested in regards to the curriculum content. To me this tied in with place-based learning. The more we put students into their own environment, got them to look deeply into the things that are happening, and then got them to create, pursue and then answer their own questions, the more chance we had to create an inquiring student who was motivated to make changes in their own place. In order for us to start the discussions

about getting kids outside, and creating their own learning, I brought forth two articles to the team.

Research.

The two articles that we read before our first meeting were David Sobel's *Beyond Ecophobia* (1996) and David Orr's *What is Education for?* (1991). While these articles are dated, I felt that they offered a good foundation for our team. These articles were addressed towards educators and were not overly academic in nature. Both articles also portrayed specific ideals I shared about environmental education. Orr's (1991) line "all education is environmental education" (para. 1) is something I truly feel and I wanted our group to embrace and empathize with. This article meant a lot to me and I wanted to share it because everything we teach has the opportunity to relate back into how we interact with our planet. Everything we teach, and everything we learn is connected to our place. By bringing the students into our shared school place, by showing the natural systems occurring, and by working with members in our community we are sharing our passion about our environment. In an international school setting, I felt that this article could inspire us as teachers to think more about what environmental education is, and how we could use interact with students with environmental education as a focus.

"I really liked the part in the article where it talked about getting kids just outside. I think we just don't have enough of it, being outside and appreciation" (Leslie, February 11th, 2012). We tried to put this into our own practice. How often do we as educators take our kids outside? While my four teammates replied, not enough, I answered almost every day. Since reading Payne and Watchow (2009) I've tried to incorporate the idea of a reflective place into my everyday routine. As a teacher it is

sometimes difficult (for a variety of reasons) to find time for unstructured, slow pedagogy (Payne & Wattchow, 2009). I believe that my students found value in this activity. Annie's prompt started me talking about my experiences taking students outside and the responses and insights some of my students made. *I really like the idea of a reflective place, where they just get out in the environment. Where it's about connection, not a lesson plan* (Annie, February 11th). Annie was asking for time, or a reason to have these students in an unstructured outdoor environment. She wanted students to make their own connections to nature, and share their stories about the time spent in their places.

Our googledocs reflection showed that people were thinking deeply about these articles.

> *I really enjoyed reading them* [the articles] *- especially the article by David Sobel. Of all the things my son and I did last summer, making a den in the woods behind his grandparents house was the one that stood out. He then set up this whole idea about how we'd survive and how the plants and animals would help us. Compelling to see this interaction and appreciation for nature.* (Annie, googledocs reflection)

Annie was thinking about how these readings applied to her life, not only as a teacher, but also as a parent. Based on the reflections we had a discussion during our meeting about how we can effectively engage learners (not just our students) in similar activities.

> *There's a culture of fear here. We have to overcome that before we could get any children outside anyway. The parents especially the children in this environment think*

that they're not allowed out, even if there are parks. They can never go and roam

because their parents are terrified (Leslie, February 11th, 2012). Leslie was saying what

most of us feel from time to time. As a teacher, it's not always up to us; it's about our

community, our responsibility to parents, the curriculum and our administrators. While

wondering about whose responsibility learning about the environment is, we started

talking about our specific responsibility to our place and what we needed to do. I brought

up my fear of trying to teach children about "their environment" without fully

understanding it as a newcomer. Leslie brought up experiences of other places she had

taught, where parents were much more open to free unstructured time. One of our

administrators Betty was at this meeting, she added *there's no reason why we can't*

create our own environment (Betty, February 11th). This comment quickly got us

discussing the possibility of creating our own garden at school that could be used as a

learning environment. Leslie started talking about an article she had read where a school

in Thailand was creating a garden out of reused items. She promised to bring it to the

next meeting.

Leslie emailed us the article for the following meeting (Watson, 2010). While it

was not a school that was doing the garden we realized the importance of including the

whole community, and not just our school. We knew that we needed a specific purpose

for our garden in order to reach a goal our students could achieve. We pledged to read

more about the initiative called "Cabbages and Condoms"

(http://www.cabbagesandcondoms.com/). Leslie told us that this was a way we could try

to direct students, but we needed to be careful of forcing this type of action. Instead of us

deciding what direction our students could take immediately, we decided to try to give

them some ownership of their learning. *They need to think of something themselves; they need to make some connection to their community* (Leslie, February 27th). Leslie was talking about how to make this meaningful for the students, not meaningful for us. At times, as teachers, it is difficult for us to give up that control, that power we have as knowledge givers, and change it into knowledge producers for the students (International Baccalaureate, 2009). To take action towards this step we decided to have the students bring in something we could put soil into, that way, we could start the learning off with a why question. *We need that why question, that why are we doing this* (Martha, February 27th, 2012). Martha thought that starting a unit with a purposeful inquiry could help make more connections for the students.

We don't let them wonder really. We don't let them wonder, it's like they can't wonder about anything till it's later in the unit (Annie, February 27th, 2012). We felt that during the beginnings of our unit we were often frontloading information. We would rather start the unit by leading students to a place where they can choose their learning, and direct the action they want to take. *Even though we say it so often we fall into the trap of being the giver of knowledge. We need to stop frontloading* (Clarice, February 27th, 2012). As a group we often feel like we need to get a lot done, and often in a limited amount of time. This has us set into a trap where we give students knowledge, instead of letting them discover it on their own, or create it in social situations. For students to have a connection to their learning, it is important they start to develop their own agenda for learning (International Baccalaureate Organization, 2009).

Talking about a lack of time seemed to be a favourite topic of teachers I have worked with. This lack of time, or perceived lack of time, directly interfered with our opportunity to create more unstructured time in the day for our students. Lafleur (1997) notes that time is a commodity that has to be managed; different people perceive time in different ways. Teachers who feel overwhelmed are less likely to take on new tasks, or new information (Collinson, 2000). As teachers, and life long learners, we need time for both teaching and learning (Collinson, 2000). When we were feeling overwhelmed in our meetings, we were feeling this lack of time to learn. Although we had set out specific time for discussing new articles, and trying to implement what we were learning, we were missing that time to fully learn, watch experts, and experiment. Martha had been speaking about *taking time, and not teaching too much* for the whole year. We, as a team, needed to adopt this attitude in order to get our sense of time back. To manage our time effectively, to share with other teachers, and for common, designated planning and implementation time, we needed to slow down and link students' previous learning, and questions to what they want to learn in the future (Collinson, 2000; Lafleur, 1997). After Martha's recent talk about slowing down (February 27th, 2012), I wanted to talk more about slow pedagogy and what it means to actually slow down and teach deeply. By giving our students time to wonder, we could help them fully make relevant connections between their lives and their education.

Action.
After this discussion my class attempted to slow down our learning experiences, by focusing on my outdoor time around different parts of the city we hoped that students would think deeply about how we are using waterways. We started our unit of inquiry by

taking the learners to different locations around the city that were waterways or former waterways. We had students inquire about how people are using waterways. Instead of just looking at pictures, or brainstorming about potential uses of waterways, students actually went out and saw what was happening.

Living in a developing country gave us different opportunities than we may have had in our schools back home. For instance, people use water in different ways, and access water in different ways. In Phnom Penh, people are still walking to the river to collect water to drink, bathe, water their garden, fish, as well as many other things.

Our first visit was to an enclosed set of villas, something similar to what most of our students live in, a place that is separated from the rest of Phnom Penh. Students were given a sketchbook to show (through drawing or writing) what they saw or experienced. For many of the students this was the first opportunity for them to be out in nature, with nothing specific to do. Students looked across the river to see different houses, made from scraps of wood, lining the riverside. It gave them the opportunity to see how many Cambodians use the waterways and what the river was used for.

My class was spending more time outside using their reflective places. Before this unit started they were mainly wondering, and writing about how different animals come into their space, what connections they have to grass, animals, and other things surrounding the living world. Now however, they were wondering more about water, and how water was connected to their space. One of my students would always wonder why the ground was wet, and if groundwater had anything to do with it (afterwards we talked about the school gardener and how his job was to water plants, because plants need water

to grow). They were making connections between the unit of inquiry and their own immediate reflective place.

Our next visit was to Chactomuk, a confluence of rivers. Two of the most important rivers in Cambodia meet here, the Tonle Sap and the Mekong. The students went in smaller groups (only one or two classes instead of the usual five) and watched the river. We sat for about an hour, and each class had their "inquiry diary" (a place where they could write, or draw what they were experiencing). The students started making connections between the two rivers they visited, and they things they saw. They noticed how people needed water for gardening, and were even able to explore a river front garden. They saw people bathing, moving goods backs and forth, and using the water for various other household needs. Instead of just providing a talk, or video about how people use water, they were able to see how people, in their community, used water on a daily basis. They were able to connect what they were learning in class to a specific place.

Our third field trip turned out to be one of the more powerful learning engagements we had during that unit of inquiry. Our school is in the process of changing locations. We are currently a handful of houses that are near each other. Each classroom is more like a room in a house, which brings a family feeling to our school, but at times we can also feel isolated as we are in separate places, often in villas across campus. Our new school will be a purpose built facility. The new building is being built on reclaimed land. To fully inquire into how people use waterways, especially in Phnom Penh, we

needed to visit this site and learn more about how we (either knowingly or unknowingly) interact with different waterways.

Before we left the classroom we had a visit from the director of our school and the new building coordinator. They explained the process of how they reclaimed the land and what that meant for the construction of our new school. For this process they took the sand from the Mekong River (which we had visited two weeks before and saw being dredged). They then funnelled the sand through a pipe and put it into a lake. This sand had built up over time and they had to make sure it was fully compressed. Afterwards, they used a specific type of material, formed into a tube, which they shoved, deep into the ground to clear all the water out of the sand. Using this method they could build their school on relatively stable ground. The students seemed interested in the process, but were mostly filled with questions. We decided to have the students write the questions down. Our plan was to visit the site, revisit our questions and then send those questions on to the director of our school. After learning more about waterways the students were keen to know why people would choose to alter these important geological features.

We were hoping that the students would be able to see parts of the old waterway so they could see how the land had changed because of human involvement. There have been many recent land reclamation issues in Phnom Penh and around Cambodia; this was a sensitive topic for some of the parents. One of my student's fathers was the person in charge of the land reclamation and I was a little worried about any potential repercussions. When we got to the site it proved ideal for our lesson. It was a long walk in swirling sand to the actual site of the school. When we got there the building

coordinator took us for a little tour. He showed us where the library would be, the elementary school, and started to take us to the place where the pool would be located. As we got closer to the edge of the new land students could see the remnants of the lake nearby. Some were very concerned about how the animals were coping. The students could see birds around and were asking me about what happened to the fish. I asked them to continue writing these questions down so we could send them to the director later.

When we returned to the class us, as teachers, were astounded at some of the questions the students came up with. The students were deeply concerned about the ecosystem and what the school site was doing to affect the greater community (including the people who lived near the lake originally). Our young learners wanted to know more about what happened to the water. While the students understood that water moved in a cycle, they wondered where it would go if it could no longer be stored in the lake. They had never thought of people using water as a place to get more land. Our central idea for this lesson was "The presence of waterways affects human settlement". The enduring understanding became a statement, which we could really engage students in, before this visit students thought that people moved near water in order to get food, travel from place to place and have access to fresh drinking water. Before seeing the site of the new school, our students had not imagined that people would choose to alter waterways. After observing the importance of rivers and lakes, creating their own discussion questions, and wondering about how to protect and preserve these resources, students could not imagine leaders deliberately removing them.

We felt that our initial idea to talk about the importance of water instead of the names of waterways and how they developed was a much more successful approach. Students were starting to understand how important water was, and they were questioning some of the ideas their elders were taking in regards to how we use such a valuable resource.

From my experience bringing people out into their environment, especially to where they were living was an important aspect of environmental education. The North American Association for Environmental Education (NAAEE) writes of the necessity for connection, exploration, and understanding of students' immediate surroundings (NAAEE, 2000). By understanding some of the local connections we can start to bring forth an understanding of larger systems, and broader issues (NAAEE, 2000). We felt as a group that the idea of taking people outside and into their environment was extremely important for international students. As learners and travellers of the world they need to explore the local, in order to connect to their different global identities.

Reflection
We all felt proud of the questions our students were asking about waterways. However, we still needed to focus on our next unit, the one that included the garden. Since we decided to pursue the garden idea, we needed return to a reflection process, in order to honour the PAR cycle. For this meeting we were not centred on the educational aspects, but our own learning and experiences with gardens and students.

For early years once, I did the seed thing. We were really lucky; we had this window that the sun really shone on. And we just put the seeds on the window. Literally, we cut up apples and put the seeds in, got oranges, that kind of thing and everything

grew really well (Clarice, March 12th, 2012). Clarice talked about how her experience

had been really positive growing food. *We just need to make sure we have the time to*

grow the food, and have student see how the plants are doing (Annie, March 12th, 2012).

Annie was worried that this could be a project that did not fully engage the learners. If

we only started the project, but had no follow through, what would the students actually

achieve. Annie's background and partner made her think about how students could take

action. For her learning was not complete unless there was an action component.

Our unit could not focus solely on plants, because the biological features of

plants, and how they interact with humans is being taught in the first and fourth grade

curriculum. So, we needed to think, not just about the garden, but the resources used to

make a garden. We decided we would talk about natural resources and how our use of

these natural products affects our world and us. Since plants are natural resources we

could use this as a way to build on students' previous knowledge. This way we could

engage the students outside with plants, after that we could discuss how different

resources are used to create gardens, and where those resources come from. We felt that

starting with a small system, a garden at our school, we could look to where other

resources came from (like plastic, wood, etc.) and how this affected different

communities around the globe (but with a focus on Cambodia).

Research.
We revisited Leslie's article that she found in the Bangkok Post that talked about

a vegetable garden at a school that helped the community with by growing food

(Roongwitoo, 2011). This garden used only reusable materials, for instance they used old

beer cans, used shoes that were ripped, and other products that were no longer needed at

home. While we were not going to work on the community aspect at the moment (we are still thinking of doing this in a future unit with food security) we loved the idea of using materials that were otherwise going to be discarded. We found that this article would help us link the importance of the garden with the idea that different resources can be reused, or repurposed. Using this article as a base would help us with educating students about the different resources we use, where they come from, and other opportunities for using them.

We knew that we had to look more into environmental education and what it meant to us. In order to initiate some conversation I brought in a list of the ten most important aspects (from the author's point of view) about environmental education. *The Window into Green* by Mike Weilbacher (2009) had a list of ten things he thought all students should know about environmental education. As a group, we would discuss which parts of this document we agreed with, and which concepts we would incorporate immediately and those we felt that we didn't need right away.

At this point of the year, not everyone felt they had the time to read all the articles we were passing around. Three out of the five members had read the entire article; I brought an electronic copy to put on the screen so we could discuss the ten points the author was making.

One of the points we felt that really resonated with the students (without us explicitly bringing it up) was that "Materials flow through ecosystems in cycles" (Weilbacher, 2009). *I was talking with a student this morning and he was like, "Just think this water might have been dinosaur wee" and I said, "Yeah, now think about how*

important it is that we don't pollute our water" (Leslie, March 19th). Students were

engaged in the idea that our resources are limited and the water we have now is the only

water we may ever have. *He was so engaged, he said, "Oh, I never thought of that." You*

could see him getting focused and a little worried. (Leslie, March 19th). *We were talking*

about a similar thing; we looked at where the bags we threw away were going. We saw a

video of plastic bags floating in the ocean and the kids said, "Oh jellyfish!" We talked

about how the bags looked like jelly fish and how that led to other things eating them,

and then I said. Then we eat the fish and so many of the kids just said, "oh?" (Clarice,

March 19th). The more we thought about how these thoughts were affecting our students,

the more we felt that we could promote the idea of taking some sort of action. Students

were starting to see how the systems were interrelated. We wanted to build on this

without bringing too much 'doom and gloom'.

      These articles are depressing, I just feel like all we can do is hurry and educate

(Annie, March 19th). At times, I felt the same way, it was depressing and we were trying

to struggle through. How do we educate kids without being too negative? *I think we need*

to find a balance. We need to be careful because we need them to hear our message, but

not tune it out (Leslie, March 19th). Leslie was trying to think of a way that we, as

educators, could help students understand the dire need for a reform in our actions,

without making them feel like their learning was hopeless. *If we go to the organizations*

that are making changes, and we talk about the positive changes they are implementing,

maybe we can put a different spin on it? (Annie, March 19th). The easy access to NGOs

and companies working for social development is one of the great things about living in

Cambodia. There are many NGOs that are working tirelessly to make a difference, and

many of them are achieving their goals. Using these organizations as examples we could focus on the positive, by showing the changes international and local people were making in our shared community.

During this meeting we had looked over the ten things Weilbacher (2009) says are essential for environmental education, but our focus was mostly on the systems we could see in our local area. By making connections between how we were living, how that living affected the planet, and how that in turn affects us was a powerful link for us as teachers, and we believed our students would appreciate it too. One of the concepts listed in our curriculum is environmental systems. By using a systems thinking approach we believed that we could connect environmental, and sustainable education into all their learning areas in order to fully implement environmental education standards into our teaching.

At this point in time we were feeling a lot of pressure to complete our jobs, learn new things and contribute to a summative reflection at the end of our research. Our group members truly valued their time in the classroom, and their personal time outside of school. So, they felt that constant reflection was too much, especially since it is a required part of the PYP. As a group we decided that we would contribute to on-going, continuous reflection, but be purposeful and selective about the amount of time, and quality of thoughts we contributed.

Breakdown.
There are times when the stress can be too much to handle, and although there were some good points to our year so far, I was feeling a lot of stress. Late March came in and our research was going pretty well. However, at this point some of my teammates

were starting to feel work related stress. With report cards, summative assessments, and people leaving (in an international school, people are often coming or going) some of us were feeling overwhelmed. At this point, I was deeply immersed into reading our transcriptions, I was picking up on some of this pressure my colleagues felt, and I too, wanted a release from the stress. I thought, if environmental education is something I want to do, and I'm almost burnt out after a year, how does anything get done. Obviously I have read about the outstanding educators who strive to make sure environmental education is embedded into their curriculum. I have seen people make huge steps in international schools. I even believe that I have made a difference, however small, in the way environmental education was taught at my previous school. However, with mounting pressure I felt like it might be too much for me to handle.

Luckily I was somewhat prepared for this breakdown. Reading about critical theory and critical research informed me that people go through these experiences, other people often feel the same way and make decisions to move forward or stop. Being able to relate to other experiences helped me, but I still worried about how this was all going to work out in the end. Regardless of this project, was I actually going to be able to put this much effort into EE? How could I continue without getting burnt out?

I talked to my team leader about this, since I wanted this breakdown to be an authentic part of the PAR process, I included one of my fellow participants. She had a larger workload than I, she had more meetings, more things to do, and she has been here a significantly longer period of time. So, she also knew if things were going to change, or they weren't. The talk was positive, and greatly improved my outlook, she reminded me

of all the changes we had made as a team already. We were the only team reading about

current research and involving ourselves in the PAR cycle, we were the only team fully

reflecting about our decisions, and recording our actions (which were unique). In other

words, we were actually doing something. We had already planned two units of inquiry

using different environmental education techniques embedded into our lessons. We had

almost finished one, and all of us had positive reactions (which I will detail later) to using

a more place-based education approach. This interaction really had me think about

systems and how as an individual you can get caught up in your actions and your

perceptions and not really think of the bigger picture, the global picture, or the closer

community. My team was actually thankful for this process and not just Leslie,

throughout the week other team members came up to me and talked about how what they

were doing was actually (re)engaging them. Getting them to think more about their

lessons, what they believe and how they teach was having a positive impact on all of our

teaching, and the stress, although at times seemingly insurmountable actually felt like it

was worthwhile.

(Student-led) Action.
While we, the teachers, were implementing new techniques we were still hoping

that students would take a bigger role in the process. We had been bringing these

students outside, enriching them in their place in hope that they would find something

wrong with it, and create authentic action (International Baccalaureate Organization,

2009). Moreover, we were creating an opportunity for students to "acquire the

knowledge, values, attitudes, commitment and skills need to protect and improve the

environment; [and] to create new patterns of behaviour of individuals, groups and society as a whole towards the environment" (NAEE, 2000, p. 2).

About a week after I had my talk with Leslie, a student came up to me on my lunch duty. She asked if she could start an environmental group. She compared our world to a thread that was slowly unravelling, and people (her and her friends) could do something about it. She noticed that the high school across the street had recycling bins and environmental groups but they had nothing similar on the elementary campus. My first thought was about how successful this year has been. By bringing kids into nature, showing them how different aspects of their community were working, and engaging them in meaningful lessons they would want to take action. Not only was I pleased to be a part of the group, I was also happy to report this to my colleague who thought it would be too difficult to get things started due to administration. I thanked the girl, and asked her to start recruiting for the next week, and planning where we would have a meeting. I talked to our administrators who were happy to have students taking a more active involvement in their community, and I started to make my own preparations for our first meeting.

Delighted with this opportunity, my first thought was, "where do we have this meeting". It was important for me to say a few things at the beginning of our meeting, but I was hoping this group would be mostly student-led. My classroom was nice and air conditioned and quieter than the outside, but that would be going against my desire to have the students engaged in an outdoor area. I discussed with some of the students and they said they wanted to meet in a covered area outside. We quickly went for a tour of

our school; looking for things we could discuss in our meeting, and set the date for our first environmental club.

The students chose to sit under a covered area and meet while they were eating. For our first group we brainstormed things that they as students wanted to change at our school. By giving the students the power to choose what they wanted to do I was following the PYP philosophy of student led inquiry (International Baccalaureate Organization, 2009). Since some of the students and I had already talked about some of the issues around the school, I was unsurprised when the four things they wanted were recycling bins, a garden, a compost bin and a campaign to reduce the amount of litter at our school.

For me, this student initiated environmental group was a crucial part of the way I wanted to teach environmental education. Whether or not what we had done as teachers influenced the decision for these students to approach me, it was crucial that I accepted and acknowledged their eagerness to learn and take action. Working in an International Baccalaureate school means that students have more control over their learning (International Baccalaureate Organization, 2009). I wanted to incorporate this philosophy into how I taught environmental education, and so did my grade level. We had decided earlier on in our discussion that any environmental education we did should be student led, and student driven. That way we can encourage students to take action on their own, and make meaning on their own. Using a guided discovery method of highlighting key issues, and having students generate questions means that students will be more drawn to take further action and feel a connection (International Baccalaureate Organization,

2009). We planned to use guided discovery methods to increase student motivation, and create a personal connection to our unit on sharing the planet.

Research.
In early April, right before our spring break, two of my teammates sent out websites they had been looking at regarding environmental education. Four months into our PAR process and four out of the five teachers had now brought articles to the table. My group was still showing an interesting in improving their understanding of how, and why they teach EE.

The first website link was to the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia. She received monthly newsletters and she passed one along, as well as a link to the CSIRO site (www.csrio.au). Her partner is an agricultural scientist who is already extremely interested in environmental issues. This website offered different ideas for teachers who are interested in showing their students more about sustainability and environmental issues. The newsletters change monthly, and we now all receive updates. Each newsletter has information on student led action, experiments we could do in the classroom, and short quizzes to engage students in learning. She chose this site because she believes that people can use science to help improve our environment. As a member of our science curriculum review committee she also believes that science needs to be taught more in our classrooms. The Primary Years Program embraces units of inquiry that have all subjects focused on looking at one main question. Since there is a broad range of ways in which to inquire we knew that in some units science would be used more, while others may focus more on language or social sciences. By bringing the science based article to our group Clarice wanted to promote

the idea that science, and specifically science focused on the environment, should play more of a role in our everyday teaching.

Earlier on in the PAR process Clarice had mentioned that she likes to bring things to the molecular level. *When we were talking about water and air pollution I try to show them* [the students] *that nothing disappears. One of the problems here is that people burn their garbage, and they think the problem goes away, but it doesn't* (Clarice, March 19th). Clarice was talking about how students and parents in developing countries do not fully understand where refuse goes. On a normal day walking or biking through Phnom Penh you will likely see someone burning garbage, or see a cloud of smoke in the distance that leads us to believe large amounts of garbage are being burnt. She teaches her students how things change at a molecular level. By showing her students that the garbage transforms from a solid to a gas, and this transformation has toxic consequences, she believes she can make a difference in students' actions and approaches to how they get rid of their waste.

As a group we were interested in this approach. The previous readings I had brought to the group talked about getting students outside and immersed in a place (however temporary for some of them). She was talking about something different. I wondered how we could take scientific skills of observing, recording and making predictions based on what we were seeing and transferring them into our "magic spots". Several of my students were already doing this in different ways. While outside they would measure things with their fingers, hands or feet and describe some of the changes they were making. I had always asked them to come to a conclusion or make a prediction

about what they saw and what they thought might happen, but I had not considered this to be science teaching. I brought back to the group Orr's idea that "all education is environmental education" (Orr, para. 1, 1990). This started to consolidate some of our ideas. We may all have different approaches, but how could we structure those approaches to bring the environment to the forefront (or at least a more significant part) of our learning and teaching?

The second website Annie had brought to us went into how to make a natural den for children (Misty Horizon, 2003). Annie really took to the idea that students should be outside more and develop an appreciation for nature. As a group we talked about the possibility of us incorporating these kinds of ideas into our teaching. We decided that while it was an interesting concept, we're not sure it would work for school. Moreover, we were unsure of the message we would be sending children about how to interact with the ecosystem. Should we be manipulating trees to do our bidding, or is it a good thing that we are co-living with nature and working with nature rather than against it? This article brought us back to one of the questions that kept resurfacing in our discussions. What was the best way to engage people in environmental education, or is there a best way? How can we work with our kids to develop an understanding of the importance of taking action immediately without overwhelming them with anxiety? The website about making forts in nature brought forth many interesting questions but we did not find it helpful for our teaching.

Two days before our last meeting in March I sent out an interview with Juno Magazine and Richard Louv (Juno Magazine, 2012, March). In this discussion Louv

talks about the importance of immersing students in their local environment. By creating

meaningful connections with nature people, Louv claims, will improve their wellbeing

and health. Being outdoors creates a natural medicine that can improve our outlook as

well as improve our relationship with our planet. I had hoped that this would bring a

connection between Clarice's science and Annie's playing outside and immersing

ourselves in nature. In our googledocs reflection after the meeting Leslie was eager to

continue the conversation. *I've been re-reading the article with Richard Louv. You know*

we were talking about including in our planning an environmental section for each unit

so that we can make links and raise the profile of EE with the students...well this quote

says it all for me, "King cited the "growing and compelling body of evidence that regular

and ready access to a wildlife-rich environment is essential for children's health and

wellbeing." (Juno Magazing, 2012, March, para. 4) *It can be part of all our units-*

Healthy habits, Food as a resource is all about the environment etc. The environment

could be our theme for the Arts unit - they can create an environment dance in PE. The

joys of the PYP for me is how creative you can be with your thinking. (Leslie, March

30th). She was eager to make a change not only to our thinking about teaching but to our

planning too. By incorporating our ideas into our curriculum we would lay a foundation

to make it more meaningful to others in our school. Instead of just doing this as a

research project, she wanted to change the way our school thought about and engaged in

environmental education.

Action.
Over the past month, we had talked about making a lot of changes in our planning

and teaching. One of the main areas we were concerned with was making sure the

students got outside more, and not just in the schoolyard but also in the greater community. Our *Waterways* unit showed that this was possible. We brought in many guest speakers who spoke about the importance of water, and how it affected their lives, and the lives of people in Phnom Penh, Cambodia, South East Asia and the world. No longer were we confined in the classroom with guest speakers. By going out to the river, having students sit in their new school area, and physically seeing what changes were happening to their waterways, students were able to connect to the unit in a way that differed from time it was previously taught (Leslie, April 30th, 2012). Taking student outside, and providing time for them to inquire was a way, we felt, improved our students understanding of environmental education.

Reflection.
For our final reflection we discussed the different options we could use to present what we were feeling at this point in the PAR process. The team felt that we were not finished our work, and that it would be continued throughout the school year and into the next, however, the deadline of this thesis meant we needed to reflect on the process. It was near the end of the year and my team felt external pressure from report cards, parents, and administration. The googledocs was left open for any individual comments and although that was the process I wanted to use, the team decided to have a meeting going over the research questions, and reflecting on the success of our project. Our final reflection would be recorded and transcribed like the previous meetings and people who wanted to further contribute through email, or googledocs were able to in their own time.

Our discussion started with some of the reasons that people feel unable to teach environmental education. We talked about some of the restraints we feel at times to tie in

the environment with what are curriculum expectations. *We're also really constrained by the units sometimes we feel we have to teach things only when they have to do with the unit we shouldn't do, sometimes we feel like it is, but it should be in everything. Like when we're doing waterways that fits with the environment* (Martha, April 30th, 2012). Previously we had planned to start adding environmental engagements into those areas of the curriculum that are not natural fits. For instance, our first unit this year engaged students in different author's perspectives and messages. Our summative assessment was to create a book that had a message, purpose and illustrations that contributed to the author's purpose. Our group talked about how we could change some of our learning and how we could incorporate environmental concepts, and outdoor, place-based education in all of our work regardless of the our unit's primary focus.

Previously we had discussed putting environmental education into our planning, using a curriculum framework that included environmental education could help us sort out how to involve students in the environment everyday. Leslie started to mention some of her feelings about how she used to teach environmental education. *I'd like to move them* [the students] *so they don't just think of environmental education as the three Rs. I think that's a trap you can easily fall into. We, as a campus, have a lot more plants and trees than a lot of the other schools around here. That's because Diane* [a previous administrator] *was really into gardens. So, I'd really like to get them involved in looking at birds and animals, that sort of appreciation factor* (Leslie, April 30th, 2012). Building off what we had read with Louv we wanted to help students with the idea of nature-

deficit disorder (Louv, 2009). By immersing students in nature, we felt that regardless of the unit, we could engage students in positive environmental practices.

Another concern we had regarding the limitations of teaching environmental education was the parents of our students. Martha said, *there's* [sic] *no parents complaining that they aren't getting environmental education. There's no pressure from parents* (Martha, April 30th, 2012). She was looking not only for support for what we were teaching but for parents to be upset about what we were not teaching. Our team felt that many parents want "fundamental skills" like math and language skills developed explicitly. Our perception was that parents thought there should be formalized lessons dealing with how to use number and words in a variety of ways. We could see opportunities for learning new things about number or language by being outside and connecting the students learning to real physical things.

Martha also worried about how parents perceived what we were teaching their children. *And you're just like, how I can get it through to your kids when it's so foreign to you. They haven't grown up with the concept of stop, listen, and appreciate* (Martha, April 30th, 2012). When we are teaching students we have to be aware that in some instances we are also teaching their parents. Martha mentions that the idea is foreign to many parents. When you live in different countries you face different obstacles, and one of them is different worldviews. We live in a different reality than many of the people here, and most of those differences are a result of how we were educated through our communities. As a teacher, we agreed, we have to work with the whole community. So, we decided that some of our homework should centre on parents and children being

outside together. While we realized that not all families could find this time to spend outdoors, we thought that promoting it would be a positive step towards helping our learning community appreciate their environment more.

Clarice was reserved about encouraging families to go outside together, she thought we needed just to focus on our relationships with the kids; we need to take the kids out ourselves and not rely on the parents. She wanted us to put on our communication with parents (website, newsletter, etc.) a list of places that would be great to take their kids to. By attaching some of these places to our units of inquiry, parents might be more inclined to take their students without feeling it a necessity (Clarice, April 30th, 2012).

Knowledge, you know, none of us are native Cambodians so you know I don't know enough about it to teach it (Leslie, April 30th). I was relieved to hear there were other people who shared my initial concern. How do we teach about the local environment when we are lacking knowledge? Through our discussions we recognized the importance of having different guest speakers, and more outdoor time for students to make their own meaning. As teachers, we need to make sure that we are not controllers of knowledge our hope was to empower learners to gain their own knowledge and then teach others (Friere, 1970). We talked about the need for other people in the community to work with us, and help students answer their questions about the environment. It was important for us to realize a critical aspect of the PAR process was for us to make a difference in our lives. If we needed to learn more, we had to learn more. By finding ways to involve ourselves in the local community, even the one right outside our

classrooms we could learn as they were, build our knowledge together for a shared understanding (Joe, April 30th).

Normally really reserved or quiet in our conversations, Martha brought another point to the table, if our curriculum and our ideas are open to environmental or sustainable education, *why don't we have enough time?* (Martha, April 30th, 2012) Although we had many excuses for not finding enough time to teach our students environmental education the way we wanted to, it seems like each reason could be removed. Creating more time was something we needed to work on, instead of wanting more time, or trying to find more time, we just needed to make sure that some outdoor time was a priority. I had talked about how my class goes outside for ten minutes a day just to sit and observe nature. My team asked where I found the time, and I said I just made it happen. By putting the things you are passionate about at the forefront of what you teach, you are explicitly teaching.

Our final discussion brought us to why we teach environmental education. *It's the right thing to do; we need to teach this to prepare our kids* (Annie April 30th, 2012). While our reasons for not teaching environmental education changed slightly between individuals, there were not many differences in why we teach it the way we do. All of us discussed how important it was to us personally. Personal importance as a reason for teaching was confirmed by research that shows people teach what they feel is important (Hart, 2003). So while we taught EE differently, we all agreed that it was an important thing for all students to learn. Leslie talked about her interest in the particular subject, and the specific areas she about which she was interested. Enthusiasm is contagious and

the more we appreciate and want to know about our world, the more students buy in to the concepts as well.

The PYP program placed a significant amount of importance on students taking action. Our group believed that this made environmental education easier to teach in our system. Being able to have students take action made the units more meaningful for them. So we taught environmental education in order to show students they can make a difference in their larger world. They showed success with their environmental group. As a group they had already written letters to our principal about getting recycling bins. We were meeting with the recycling company in August to talk about our needs, and what actually happens with recycling here. The group had developed a garden, with the rest of the grade level, and was working on developing a composting project at school. These students felt empowered to make a change.

The last conclusive answer we had for teaching environmental education was going through this PAR process together. *I think enthusiasm too, Joe, like yours, that really spreads. And after reading those articles I think more about what I do. And also the kids, like in the last unit when you realize how keen they were to take action to help the environment we actually do have to pay more attention* (Annie, April 30th, 2012). While I am not sure that it was my enthusiasm that brought our group greater focus on what we were teaching, I agreed that the reflective part of PAR made us more aware of what we were doing, and how we could change. As teachers, we try to teach our students the value of reflection (International Baccalaureate Organization, 2009). We needed to embrace reflection in our teaching in order to engage our students effectively. Our time

using the PAR model showed us that it positively contributes to how we think we are

engaging students.

The end of the project

By the end of the month we all agreed that environmental education, specifically

allowing students to have more time outside, was something we were going to continue.

By putting environmental standards into our curriculum, and focusing on how we teach

environmental education we would continue to make it a priority. Also we decided to

bring more articles to our meetings. While we may change from environmental

education, we all decided that it was important that we continue the PAR process. So as

we develop questions about our teaching, we will research possible solutions, implement

them and then reflect on the success of our work. While this was a part of our planning

before, this has become a larger priority for us as a team. Using the PAR process and

giving power to the teachers was a success in our team's eyes.

Discussion

Answering the 'Big Questions'

PAR.

> How participant groups move from exploring aspects of their lives, their
>
> communities and their concerns to presenting knowledge of their exploration and
>
> analysis to outsiders is unique to each group. That is because no two PAR projects
>
> are the same. The activities, methods, participants, objects and collection
>
> techniques are all particular to the context in which the project takes place.
>
> (McIntyre, 2008, p. 75)

When I first decided to engage in this project, I envisioned it going a certain way.

Participatory action research does not always flow the way you want it to. Although I had

researched and felt the process would go a certain way, I was unsurprised but at times a

little frustrated that it was not completely in my control. One of my main concerns was I

was having a difficult time getting my co-researchers to engage in data analysis. Some of

them had looked at the transcripts posted online, some had read the minutes, but none had

an opinion about how they were structured or how that affected our study. Rather they

wanted to move forward with the discussions. They understood the importance of data

analysis, but felt that I was the "main researcher". While they were happy to listen to my

thoughts and make comments, they did not want to engage in the data analysis. Reason

(1994) asserts that research that is focused on self-study means we have to move between

different ways of knowing, or different epistemologies. We, as a group and as

individuals, have a responsibility to contribute the best we can to our PAR project.

However, through conversations my team members told me that they want to participate more, but 'real life' often gets in the way.

Working in a group can bring about many benefits for all the people involved (McIntyre, 2008). At times there are frustrations as well. During the transcribing process I noticed that one of our group members routinely interrupted another. While we were in the meeting I never noticed this, and I do not think it was intentional. However, after transcribing the notes I noticed it during our meetings. We discussed how at times we interrupt each other and created an essential agreement where we would help each other's voices be heard. If someone interrupted what we were saying, someone else could ask us to take a moment in order to let the person explain his or her thought fully.

Our project had grown and changed in different ways. Originally, the plan was to dig deeper into why we were doing the things we were doing. While that often did come up in our conversations, my team was eager to learn more about environmental education and how they can engage students. They had all acknowledged it was not a particular area of concern or strength for them. So they wanted to know more and do more. The idea that led them to be more involved was the understanding that there was a possibility to engage students in different ways. For most of them it was a choice to be more aware of how they taught environmental education. This was a starting point for us as educators. We have agreed that we will continue to talk about how and why we teach environmental education.

Optimistically I had hoped that we would dig really deep into why we did things a certain way. While I believe that we did dig deep, and did ask deep questions of

ourselves, I no longer believe that there is a true answer other than we believe *it's the right thing to do* (Clarice, April 30th, 2012). We all had different reasons for engaging students in specific ways, but we all expressed a concern for students and their future. As a result we believe that engaging students this way was right.

Annie specifically talked about how this program made her think about not only her teaching, but also her home life. She was a regular contributor to both the on-going reflection and our discussions about the PAR process. All aspects of the PAR process helped us become more reflective. During a side conversation one morning at the coffee pot, Martha told me she really appreciated the process of reflection. She felt that she did not contribute the same way as others, but really thought about what we were talking about and changed some of her teaching as a result. She knew she had a long way to go, to embrace the idea of teaching environmental education as well as engaging students about it in a more meaningful way. The PAR process affects people differently and although some feel they may not be contributing in the same way, everyone's involvement is important for the whole process (McIntyre, 2008).

The PAR process helped us to better understand each other and how we can work together as a team (Martha & Annie, April 30th, 2012). By using a similar process before embarking on this project, we felt comfortable enough to question each other, and critically interact with different ideas. Our group felt that this project helped us become better educators, not just environmental educators (Annie, Clarice, Joe, Leslie &Martha, April 30th, 2012).

   Environmental Education.

Each of the teachers in the group started with a different idea of what environmental education was and how we engaged students. While the group had a more cohesive idea at the end (environmental education should be about students being outside, looking for connections and sharing their thoughts and feelings) there were still some differences in what we believed. Clarice wanted a more scientific approach, Annie wanted more time outside, Leslie wanted time to explore with the students what environmental education was, and how to achieve that for individual success. We all wanted students to spend more time outside, and appreciate, which we thought would help lead to a deeper understanding of the importance of our local environment. Each of us had entered into the PAR process with the idea of how we engage students in environmental education, and we all still believe different things. We were able to celebrate all aspects of how we taught environmental education. Through critical research we questioned ourselves, and each other about perceived best practice, and learned that our ideas held importance for each other. We focused on how we engage students in environmental education and now have strong beliefs about the way we engage our students.

We used Semken's (2005) idea of building relationships with natural features we hoped to build students' appreciation of nature. Spending time by the rivers allowed us to engage students in place-based activities (Sobel 1996, 2008, 2008). Tuan (1977) and Orr (2007) think that spending an extended amount of time in space will help people have a better understanding of the places they live and the environmental systems they engage in. Our team agreed that students need to spend more time outside, just spending time in a space. By researching more about how other environmental educators engage students

we too were able to improve our practice. We did not come to an agreement about how long students would need to spend in a place to develop a sense of place attachment, but from our observations the students in grade 2/3 who spent time outdoors were more aware of their place and did more to make it better (by clearing trash, protecting wildlife or working on recycling).

Using Payne and Wattchow's place based activities I found that my students cared more about their schoolyard. Spending more time outside, especially in unstructured reflective time helped my students appreciate where they were. We talked about how the weather was changing, what animals/insects were out at different times of the year. As a classroom we were more engaged in environmental systems. While we did not talk about systems explicitly we looked at connections, and how we as humans were involved in how these connections changed over time.

Each of us went through a transformation throughout this project. By observing what students were doing outside and questioning our own practice we were able to make adjustments to what we believed. Each of us developed our idea of environmental education throughout our project, and we are all still open to making changes to what we believe. Using the PAR process helped us to understand that reflection is a necessary part of our development as environmental educators.

Recommendations

We agreed that for the school to truly benefit from this type of research, we needed to spend more time on the PAR process. While I believe we made full use of the limited time we had, everyone would benefit from more time using the PAR research

cycle. By sharing this experience and others with our immediate school learning community as well as other international schools in the area, others could benefit from what our group has learned using the PAR process.

All of us felt success on this project was dependent on a small group of educators working together (googledoc reflection, April 30th). Future researchers should look into how many teachers can effectively work in groups for an action research project. For us, it seemed a little too ambitious to involve the whole staff. Perhaps smaller groups focused on specific aspects of education would be the best result. Deeper research is needed to fully understand how we can best involve the whole school into action research projects.

For further study, others should explore what expatriate teachers do to learn more about their new teaching environments. By researching more about what expatriate teachers believe about their new homes, and how they start learning more about the environment, we can make further suggestions on how to involve new teachers into their new places. By teaching new teachers about the types of systems involved in their new areas, we could better equip teachers to feel more comfortable engaging students in environmental education.

We found success in using PAR and the PYP philosophy. More research is needed in how PAR is affected by the schools', or individual teachers' educational beliefs. By looking into how easy it is to adapt reflective practices into planning, and what needs to be established in order to keep these practices running could help more schools enrich their environmental education learning engagements.

Reflections

My first year in Cambodia was memorable for a variety of reasons. I fell in love with a developing country: the way it works (not always straightforward or honest), the people who work here (full of love, wanting to make a difference) and the natural opportunities. I gained a greater understanding of how I work as an environmental educator. I learned more about relationships, and how to interact with others, in a multitude of situations.

One of the greatest memories I will have is of this project. When we took the students outside, smiles appeared, questions were raised and the concern the students felt for our shared environment was truly inspiring. Working with colleagues who would hesitate to define themselves as environmentalists thinking deeply about how we can improve environmental education was a powerful motivator for me. This project made me think deeper into what educators are, and what they can be for students and learning experiences.

Not only did we make changes to the curriculum and our own styles, for the project, we made life long changes. The following year we instituted an article club where we talked about different aspects of teaching and permaculture and how we could relate the two. We expanded our group to involve other teachers, as more people were interested in what we were doing. The project changed us, and helped us achieve more for our students.

While hope is not mentioned explicitly often in this paper, I think my whole group would agree that after this project, that was our main feeling. We all had hope: we believed we could make adapt our teaching styles, we had hope for

students and parents (re)connecting with nature, and we felt that students would soon be taking a leadership role in these activities.

All this hope and reflection helped us to prepare for the upcoming year. We used the same model to plan our units for the following year and have continued to stay focused on how we teach (not just environmental education). The PAR process combined with the PYP philosophy has melded well for us. We have seen success and trusted ourselves to continue using these processes to improve our teaching.

As teachers we have grown professionally. We have tried a new process of educating students and desire more change for our young learners. As we continue to strive towards educating students for the future we now all agree that environmental education is an important aspect of our shared learning.

References

Anderson-Patton, V. (1998). Creative catalysts: A study of creative teachers from their own perspectives and experiences. Retrieved from Proquest Dissertations and Theses (UMI No. 9838453).

Asman, S. (2009). Instructor/student perception of effective use of class time. (Unpublished Doctoral Dissertation). University of Wisconsin Oshkosh, Oshkosh, WI.

Bengtson, K.H.M. (2010). Elementary teachers' perceptions of environmental Education. Retrieved from Proquest Dissertations and Theses (UMI No. 3434324).

Black, J.S., Mendenhall, M.E. & Oddou, G. (1991). Toward a comprehensive model of international adjustment: An integration of multiple theoretical perspectives. *Academy of Management Review,* 16, 291-317.

Brookfield, S.D. (1995). *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass,

Brookfield, S.D. (1990). Using critical incidents to explore learners' assumptions. In J. Mezierow (Ed.). *Fostering Critical Reflection in Adulthood* (pp. 177-193). San Francisco: Josesey Bass Publishers.

Cahill, C. (2007). The personal is political: Developing new subjectives in a participatory action research process. *Gender, Place and Culture, 14*(3), 267-292.

Capra, F. (2005). Speaking nature's language. In M. Stone & Z. Barlow (Eds.). *Ecological literacy: Educating our children for a sustainable world* (pp. 18-30). San Francisco: Sierra Club Books.

Chandler, J. (2010). The role of location in the recruitment and retention of teachers in international schools. *Journal of Research in International Education, 9,* 214 – 227.

Charmaz C. (2006). *Constructing grounded theory*. London, UK: Sage Publications.

Chawla, L. (1999). Life paths into effective environmental action. *Journal of Environmental Education, Fall 99, Vol. 31, Issue 1,* 15-26.

Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco, CA: Jossey-Bass Publishers.

Collinson, V., & Cook, T.F. (2000). "I don't have enough time": Teachers' interpretations of time as a key to learning and school change. In *Annual Meeting of the American Educational Research Association.* New Orleans, LA.

Commonwealth Scientific and Industrial Research Organization (2012). Climate Change: Science and Solutions for Australia. Retrieved from http://www.csiro.au/Outcomes/Climate/Climate-Change-Book.aspx

Cresswell, J. (2007). *Qualitative inquiry & research design: Choosing among five approaches.* Thousand Oaks, CA: Sage Publications, Inc.

Desautels, A. (2008). Walking back along the path. A., Churchill (Ed.), *Rocking your world: The emotional journey into critical discourses.* Rotterdam: Sense Publishers.

Elden, M. & Levin, M. (1990). Cogenerative learning: Bringing participation into action research. In W.F. Whyte (Ed.), *Participatory action research.* London: Sage Publications.

Fien, J. (2000). Education for the environment: A critique - an analysis. *Environmental Education Research*, 6(2), 179-193.

Friere, P. (1970). *Pedagogy of the oppressed*. New York, NY: Continuum.

George, J.M., Rampersad, J, & S.M. Herbert. (2007). Sense of place and the teaching/learning of lower secondary science. Retrieved from http://uwispace.sta.uwi.edu/dspace/handle/2139/6692.

Glazer, C., Abbott L. &Harris, J. (2004). A teacher-developed process for collaborative professional reflection. *Reflective Practice,* 5(1), 33–46.

Goodnough, K. (2011). Examining the long term impact of collaborative action research on teacher identity and practice: The perceptions of K–12 teachers. *Educational Action Research*, *19*(1), 73-86.

Guishard, M. (2009). The false paths, the endless labors, the turns now this way and now that: Participatory action research, mutual vulnerability, and the politics of inquiry. *Urban Rev, 41*, 85-105.

Hart, P. (1996). Problematizing enquiry in environmental education: Issues of method in a study of teacher thinking and practice. *Canadian Journal of Environmental Education, 1, Spring,* 56-88.

Hungerford, H., Simmons, B. (2003). Environmental educators: A conversation with Paul Hart. *Journal of Environmental Education 34*(4), 4-11.

Hughes, J. (2003). Commentary: Participatory action research leads to sustainable school and community improvement. *School Psychology Review*, *32*(1), 38 – 43.

International Baccalaureate Organization (2009). *Making the PYP happen: A curriculum framework for international primary education*. Cardiff, Wales: International Baccalaureate Organization.

Jaipal, K; Figg, C. (2011). Collaborative action research approaches promoting professional development for elementary teachers. *Educational Action Research*, *19*(1), 59-72.

Juno Magazine (2012, March). Why nature matters. Retrieved from http://www.junomagazine.com/why-nature-matters/.

Kalliola, S. (2009). Learning along with participatory action research: A Finnish perspective. *International Journal of Action Research, 5*(3), 289 – 321.

Kuriloff, P., Andrus, J. & Ravitch, M. (2011). Messy ethics: conducting participatory action research in the crucible of university school relations. *International Mind, Brain and Education Society, 5*(2), 49 – 62.

LaFleur, C. (1997). Finding and scheduling time: Temporal issues in educational reform. In *Annual Meeting of the American Educational Research Association*. Chicago, IL.

Lertzman, R. (2008). The myth of apathy. *Ecologist.* Retrieved from http://www.theecologist.org/blogs_and_comments/commentators/other_comments/269433/the_myth_of_apathy.html.

Lewis, J.E. (2007). The significant life experiences (SLEs) of humane educators. *Society and Animals, 15,* 285 – 298.

Lingard, L., Albert, M. & Levinson, W. (2008). Qualitative research: Grounded theory, mixed methods, and action research. *British Medical Journal*. doi: 10.1136/bmj.39602.690162.47.

Louv, R. (2009). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books.

Marcouyeux, M., Ghozlane, F.B. (2011). Place-identity in a school setting: Effects of place image. *Environment and Behavior 2011* (43), 344. doi:10.1177/0013916509352964.

McIntyre, A. (2008). *Participatory action research.* London: Sage Publications.

Mctighe, J., Wiggins, G. (2005). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

Melrose, M. J. (2001). Maximizing the rigor of action research: Why would you want to? How could you? *Field Methods, 13*(2), 160–180.

Mills, G. E. (2007). *Action research: A guide for the teacher researcher* (3rd Ed.). Upper Saddle River, NJ: Merrill Publishing.

Misty Horizon. (2003). How to grow your child a living den or playhouse from willow or other plants. Retrieved from http://mistyhorizon2003.hubpages.com/hub/How-to-grow-your-child-a-living-den-or-playhouse.

Moser, S. C. (2007). More bad news: The risk of neglecting emotional responses to climate change information. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change* (pp. 64-80). Cambridge, UK: Cambridge University Press.

North American Association for Environmental Education (2000). *Excellence in Environmental Education: Guidelines for Learning (Pre K – 12)*. Washington, DC: NAAEE Publications.

Newman, J. M. (2000). Action research: A brief overview. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *1*(1).

Orr, D. (1991). What is education for? Retrieved from http://www.context.org/ICLIB/IC27/Orr.htm

Orr, D. (2007). Lessons from the edge. *Alternatives Journal, 33*(5), 48-52.

Payne, P. & Wattchow, B. (2009). Phenomenological deconstruction, slow pedagogy and the corporeal turn in wild environmental/outdoor education. *Canadian Journal of Environmental Education*, *14,* 15-32.

Peca, K. (2000). *Critical theory in education: Philosophical, research, socio-behavioral, and organizational assumptions* (Information Analyses SO 032 575). Washington DC: Department of Education, Office of the Undersecretary.

Reason, P. (1994). Three approaches to participative inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 324-339). Thousand Oaks: Sage Publications.

Reason, P. Bradbury, H. (2001). *Handbook of action research.* London: Sage Publications.

Richardson, W. Von Kirchenheim, C. & Richards, C. (2006). Teachers and their international relocation: The effect of self-esteem and pay satisfaction on adjustment and outcome variables. *International Education Journal, 7*(7), 883 – 894.

Sammel, A. J. (2005). Teachers' understandings and enactments of social and environmental justice issues in the classroom: What's "critical" in the manufacturing of road-smart squirrels? Retrieved from Proquest Dissertations and Thesis.

Semken, S. (2005). Sense of place and place-based introductory geoscience teaching for American Indian and Alaska Native undergraduates. *Journal of Geoscience Education*, *53*, 149 – 157.

Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart in nature education*. Great Barrington, MA: The Orion Society.

Sobel, D. (2008). *Design principles for educators*. Portland, ME: Stenhouse Publishing.

Sobel, D. (2005). *Place-based education: Connecting classrooms and communities*. Great Barrington, MA: The Orion Society.

Sterzuk, A. (2008). From buffalo plains to wheat fields: Critical thinking in the Canadian prairies. In A. Churchill (Ed.), *Rocking Your World: The Emotional Journey into Critical Discourses* (pp. 27-35). Rotterdam: Sense Publishers.

Tuan, Y.F. (1977). *Space and place: The perspective of experience.* Minnesota: University of Minnesota Press.

Watson, J. (2010). Eating for a good cause: Thailand's Cabbages and Condoms. Retrieved from http://www.dineandcook.com/fooddrink/cooking/500-eating-for-a-good-cause-thailands-cabbages-a-condoms

Weilbacher, M. (2009). The window into green. *Educational Leadership, 66*(8) 38-44.

Whyte , W.F. (1990). Comparing PAR and action science. In W.F. White (Ed.), *Participatory action research* (pp. 97 – 99). London: Sage Publications.

Wicks, P.G., Reason, P. (2009). Challenges and paradoxes of opening communicative

    space. *Action Research, 7,* 243 – 262.

Wilcox   Herzog, A. (2004). Actions speak louder than words: How experience and

    education relate to teachers' behaviours. *Journal of Early Childhood Teacher*

    Education, 25(1), 11-18.