LIGHTS, CAMERA, ENVIRONMENTAL ACTION: MESSAGES IN YOUTH ENVIRONMENTAL VIDEOS

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Dedication

This thesis is dedicated to my daughters, Rowan and Tegan, who have believed in me throughout the Master’s program, who have understood when I was too busy or tired to play, who have inspired and revived me when I was down, and who constantly remind me of how beautiful and magical our world is. May this work motivate you and your peers to look after our homeplace.
Abstract

*An Inconvenient Truth* was a catalyst for change in the way many adults think about the environment. North American youth are perpetuating the dominant consumerist paradigm, and will need to change their attitudes and behaviour to restore the health of the planet in the future. This study identifies the content and messaging that youth see as effective to engage their peers in pro-environmental attitudes and actions. Middle school participants created environmental videos following a Participatory Video methodology. A content analysis of the videos revealed that youth are optimistic and advocate grassroots community action to “save the world.” The dominant messaging in the videos is “peer talk,” characterized by youth language and diction, youth speaking directly to the youth audience, youth talking to youth on screen, and content that is relevant to youth. These findings are recommended in a grounded theory of effective environmental education for youth through video.
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Lights, Camera, Environmental Action: Messages in Youth Environmental Videos

Chapter One: Introduction

Nothing could be more important than the potential educational value of environmental film.

(Suzuki, 2008)

How can one change the way people think and act? In the media, I read and see overwhelming evidence that the planet is in a state of ecological crisis, the climate is changing, resources are diminishing, and habitats are being destroyed (Associated Press, 2009; CBC News, 2009; Hanley, 2009; Lydersen, 2008). This is nothing new. Humans have been impacting their environments for millennia (Diamond, 2005). And yet it seems we are at a tipping point in the health of our planet (Intergovernmental Panel on Climate Change, 2007; KQED, 2009; Lemonick, 2008).

Background

Consumerism is the source of many environmental crises we see today, from pollution to global warming, toxic waste to habitat destruction (Leonard, 2007; Princen, Maniates, & Conca, 2002). Statistics show that Canadian consumer spending has grown steadily since the 1980s by 2.6% annually since 2000 (Harchaoui & Tarkhani, 2004). Spending on household furnishings and transportation increased by 6.1% annually from 1997 to 2002 (Industry Canada Office of Consumer Affairs, 2004, p. 167). Even in the
current economic downturn consumer activity has not declined significantly, however purchases are paid for by debt (Certified General Accountants of Canada, 2009). The consumerist paradigm has not shifted even in this time of economic crisis. The Certified General Accountants of Canada (p. 12) view “consumer spending [as] one of the ‘hopes of last resort’ that may yet rescue the economy from a prolonged recession.” For many, human impact on the environment is still not a consideration.

Descartes, Galileo and Bacon promoted the current Western world view that perceives the natural environment as a source of resources to exploit for personal gain, rather than a system of which humans are were a part (Capra, 1996; Orr, 1992a). The global economy has pursued the path of resource development and consumerism to the point where both natural and human systems are breaking down: the climate is changing, habitats and species are disappearing, resources are being depleted, and demand for food, shelter, water and consumer products is increasing with the growing global population (Cohen, 2003; Intergovernmental Panel on Climate Change, 2007; Knoblauch, 2008; Scholes, Hassan, & Ash, 2005. This is not sustainable in the long term (Turner, 2008), especially as developing nations aspire to emulate the West. A massive paradigm shift away from consumerism may be the key to creating a sustainable society.

Environmental education has been a presence in North America for over forty years and has created greater awareness of environmental issues (Kempton, Boster, & Hartley, 1995), but has failed to create a significant change in consumer thinking and behaviour among the majority of the population (van Matre, 1990). Van Matre believes this is because most environmental education has been supplemental, a “random assemblage of [indoor and] outdoor activities” without “focusing on our individual
connections with the earth’s ecological systems and our personal impact on them” (p. 4). Another possible reason for the failure of environmental education is what Sobel (1996, 1998, 2007) calls ecophobia. Sobel (1998, para. 45) believes "if we want children to flourish, we need to give them time to connect with nature and love the Earth before we ask them to save it."

Ecological literacy, defined as “understanding the basic principles of ecology and being able to embody them in the daily life of human communities (Capra, 1999, p. 2), is fostered by several factors which include time in nature (especially as a child), actions by family members and other significant adults, media exposure education/work experiences (Chawla, 1998; Palmer, Suggate, Robottom, & Hart, 1999). Louv (2006) reinforces the need for personal experience in natural environments to stimulate environmental concern. All of these influences affect how one thinks about the natural environment, which then has an effect on one’s actions (Gotch & Hall, 2004). The current study builds on the research in developing ecological literacy and develops recommendations for effective environmental education for youth that will inspire a shift to more sustainable attitudes and behaviour.

*Research Opportunity*

I look at my grade 8 class and see an intelligent, caring group of 13 and 14 year olds. In the fall I took my students on a wilderness camping trip where they had the opportunity to explore and connect with the natural world. We watched grey whales swim past and looked up at a glorious starry sky as we sat around the campfire. This is a group that is aware of environmental issues and is socially conscious. Many are leaders in
the school. They have grown up going to parks, forests, and beaches, and carrying the recycling box to the curb and yet they do not make sustainable choices in their daily lives. They are focused on the latest trends in fashion and electronics, and make plans to head to Starbucks or the mall after school, without concern for the environmental effects of their purchases.

Why is my class, a privileged and educated group, not yet ecoliterate, that is conscious of “the principles of organization that ecosystems have developed to sustain the web of life” and demonstrative of the use of those principles to create sustainable communities (Capra, 1999, p. 1). My students generally understand what behaviours are environmentally responsible but their day to day actions do not reflect their knowledge. These youth are firmly ensconced in North American consumer society. Khan (2006) suggests that corporate culture, through popular culture, is “creating and maintaining a culture of consumption among children” (p.41). To support the wellbeing of the planet and reject consumerism, youth need to transcend the paradigm they see around them, especially in mainstream media.

My students are entering adolescence. The ideas they have developed through childhood will be challenged, tested, tweaked, or rejected. They will settle into the values and behaviours they will carry into adulthood. I define environmentalism as thinking, advocacy, and action to maintain or improve the health of natural environments and systems. What is necessary to engage my students in environmentalism? What will show them that sustainable living is possible, necessary, and enjoyable? Our society must learn how to create environmentally conscious youth who live sustainably in order to address the environmental crises we now face.
This study explores the messages and modes of communication conveyed by youth to develop ecoliteracy among their peers. Seventeen students at Central Middle School in Victoria, B.C., used a Participatory Video (PV) methodology (Lunch & Lunch, 2006) to examine their perspectives on issues that were important to them. Seven of eight groups created and shared short films aimed at changing the way youth think about the environment. Participant reflections and the content and format of their videos were analyzed to identify common themes and stories, and a grounded theory (Charmaz, 2006) was developed. As An Inconvenient Truth (Bender & Burns, 2006) affected the dominant adult view of climate change (Stanley, 2007), it is my hope and intention that findings from the current study will guide other youth, environmentalists, non-governmental organizations, and governments to produce media that will alter how youth see themselves and their place on the Earth. The resulting films may inspire my students and others to shift their paradigm, and become the change we wish to see in our society.

Research Questions

The purpose of this study is to explore effective elements and content of videos for environmental education directed towards youth. This qualitative research study develops a grounded theory that responds to two questions:

1. What content do youth communicate through video to engage their peers in environmentalism?

2. What visual messaging (imagery, techniques, means and production styles) do youth use to communicate that content to their peers?

The research presented in this thesis has four objectives:
1. To review academic literature relating to environmental education, fostering ecological literacy, theories of persuasion, and video as a medium for social change.

2. To explore effective production elements and content for youth environmental education, identified by analyzing footage from participant youth videographers.

3. To synthesize analyzed data from youth videos and academic literature into recommendations for environmental education materials and programs for youth.

4. To describe the process by which youth participants created environmental videos.

Research Significance

This study fills a gap that lies between the fields of environmental education, media studies, and persuasion. The role of new technologies such as digital video cameras, editing software, and internet-streamed video in environmental education is relatively new. The literature review uncovered no studies that simultaneously investigate youth produced video, environmental education, and persuasion theories.

There is research that suggests that to instill environmental values into a youth population, it is effective to have youth actively participate in and direct at least some aspects of the environmental education process. Dewey (1938) wrote that “well-planned experiential education will foster further a student’s positive growth and influence his/her future behavior” (p. 37). Student-directed learning results in a sense of achievement and
increased competency; learning is more profound and leads to further successes and self-motivated action when it is experiential (Gibbons, 1990). One example of this is Raynold’s (2006) research into the development of an environmental education program at the Pembina Institute, which reinforced the need to involve youth at every stage of the environmental education design and implementation process.

Rogers’ Diffusion Theory (2003) describes the process of transformation in a culture, from behavioral changes among innovators and early adopters through to the changes becoming adopted by the majority and laggards. Rogers asserts that early adopters frequently are well-respected, demonstrate leadership, and are role models for success. “If you can influence the leaders, either with or without their cooperation, you automatically influence the group which they sway” (Bernays, 1928, p. 49). Cacioppo and Petty (1984) propose the Elaboration Likelihood Model to explain varying levels of response to persuasive messages and potential for change in attitudes or behaviours. They propose that a message is most effective when it is relevant, resonant with prior knowledge, well presented by a reliable source, and when the recipient has confidence in their abilities to respond to the message. The current study applies these theories to youth through video.

Video is a highly effective tool to reach youth. More than any previous generation, today’s youth are connected to electronic media, be that television, cell phones, iPods or internet websites and applications such as Facebook, YouTube, and MSN (Shade, Porter, & Sanchez, 2005). They interact and gain knowledge, attitudes and values through these media. In his Video Critical study, Gauntlett (1988) describes young people’s high level of media literacy and ability to communicate using video cameras.
Video is an effective tool for youth, “not just as essential skills for their self-expression, but as a means of school reform and social change” (Teasley, 2004, p. 96). Goodman (2003) documents many projects aimed at changing communities through video production. He explains how youth from all backgrounds can “understand how media is made to convey particular messages and how they can use electronic and print technologies themselves to document and publicly voice their ideas and concerns regarding the most important issues in their lives” (p. 3). Participatory Video has been used extensively around the world (Ghose, 2007; White, 2003) to educate and empower as well, but there are no studies describing youth, PV, and environmental education.

This study is necessary to weave together the three strands of research, environmental education, persuasion theories, and media studies, in order to uncover the most effective means to foster ecoliteracy among youth. It blends peer learning among youth, Participatory Video, and environmental communication. It provides guidelines for creating effective environmental education media for youth. Further, the current study’s recommendations can be applied to many aspects of youth education including environmental education, health promotion, and social and career development.

Research Limitations and Delimitations

Several delimitations narrowed the scope of my research and provided structure. I elected to do my research at Central Middle School in Victoria, B.C., where I teach. I chose to work within the Enrichment framework for the winter term. This facilitated my contact with a group of youth, but also restricted my contact to 17 grade six, seven, and

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1 At Central Middle School, students select and participate in a Wednesday morning extracurricular Enrichment activity each term. I offered Videos to Change the World as my Enrichment in the 2009 Winter Term.
eight students from one school in Victoria, B.C. My research investigated the message and messaging youth employ to engage their peers. I decided to use video as the medium of communication, rather than any other print, visual, or on-line media.

This study is limited in a number of ways. Participants were all students at Central Middle School who chose to participate in the project and were placed in the program by a school administrator. Although the school has a very socio-economically and culturally diverse population, there was no guarantee that participants would represent the full range of youth at the school or across Canada. Students who chose to sign up for this project may have been predisposed to using video media or to social justice issues. That said, I was obligated to generalize and extrapolate results to generate a theory that is applicable to a wider population of youth.

As a teacher at the school, my participation may have affected student participation and data. I had a prior relationship with many of the participants and/or their families. This may have drawn some students to the enrichment group and discouraged other potential participants. My role in the school as a grade eight teacher and coordinator of the “Green Team” may have created preconceptions about my expectations of content and conduct.

My personal environmental bias has implications for my coding of data. I have been immersed in environmental education and issues throughout my professional career and my postgraduate work. My coding of data reflects the content I have studied, the curriculum I teach, and my confidence that collectively environmental issues can be addressed. Students have produced videos in my classroom for the past decade. When I teach videography, I communicate certain priorities and methods to my students, such as

...
the use of storyboards and editing using iMovie on Apple computers. In coding there are aspects of technique as well as content aspect that I take for granted or to which I pay particular attention. The validity and reliability of my research and means to limit bias are discussed in Chapter Three.

This study was limited by time constraints. I only had access to participants as a group for nine weeks, from January to March, 2009, after which they began a different Enrichment activity. Participants had approximately eighty minutes per week for two months to develop videography skills, learn about issues, and create and share their videos. I had no opportunity to run a pilot PV project to refine my facilitation process, and most participants did not have time to completely finish their videos to their complete satisfaction. Further, many participants were not present in every class due to illness, extracurricular activities, or other personal engagements. The filming and editing time was also limited by the Royal Roads and School District 61 ethical review process, which had to be completed before production could begin.

The study had limited access to technology and expertise. The school has three digital video cameras and three iBook computers. At the start of filming there was only one functional tripod and one data cable to transfer video to computers for editing. More equipment was acquired as the production progressed, but there was never enough for the eight video project groups. For many participants, this study was their first opportunity to use a video camera or edit using iMovie software. As the facilitator, I provided instruction, but further support and technical assistance with both filming and editing may have altered the participants’ videos.
Researcher Perspective

One of my fundamental beliefs as an educator is that youth are capable of changing the world. As Wiggington (1986) wrote, we must have more faith in students than they have in themselves. In working with participants, it was my goal to give them as much freedom and control in the research project as possible. I felt that this would lead to valid and authentic videos that could affect change among their peers’ attitudes and behaviours. When they produced their videos, it was my assumption that the study participants were consciously or unconsciously communicating effectively to their peers. A grounded theory methodology (Charmaz, 2006) allowed for youth messages and modes of communication to emerge naturally, without my interference or influence. As data were collected and analyzed, youth-produced videos and reflections suggested patterns and relationships that were grounded in the data. These findings were saturated as data analysis continued, and corroborated by the literature reviewed. This participant data driven methodology led organically to a theory of effective environmental education communication for youth.

Having worked extensively with youth over the past twenty years in formal and informal settings, I feel that video is an effective medium to influence attitudes and behaviour. This is written with a Western bias, about a society which devotes massive amounts of time and resources television and internet-streamed video. I feel this view is also applicable to other societies, regardless of language, culture, or material wealth. My research into PV in developing countries corroborates this opinion.

It is my belief that the environmental crises facing the world today are the most important issues for humanity to address, from resource depletion to climate change. It
will take a fundamental change in world view to achieve sustainability on our planet. Although my passion and confidence in environmental education was not overtly communicated to participants, my classroom and behaviour reflect my values and goals as an educator.

**Thesis Overview**

Chapter One has introduced the research context, rationale, theoretical foundations, and established the research questions and objectives, as well as the researcher’s perspective and study limitations and delimitations. Chapter Two reviews literature related to the study, exploring foundations and current research in educating for ecological literacy, fostering environmentalism, public persuasion, and video as an effective means for social change. Chapter Three describes the study methodology. It provides the rationale and theory of Participatory Video, Content Analysis, and Grounded Theory. Chapter Three also provides a detailed description of the study process including data collection, data analysis, and measures to guarantee validity and reliability of results. Chapter Four describes the seven participant videos produced during the study and the seven key findings that emerged from data collection and video analysis. Chapter Five explores the impact and applications of the study’s findings and makes recommendations for environmental education materials, programs for youth and future research. A grounded theory for effective video communication to develop ecoliteracy among youth is proposed. The final chapter concludes with reflections on the research as an ongoing journey.
Chapter Two: Literature Review

*If you are thinking a year ahead, sow a seed.*

*If you are thinking ten years ahead, plant a tree.*

*If you are thinking one hundred years ahead, educate the people.*

*(Anonymous Chinese Poet, 400 BCE)*

This study takes place at the confluence of three areas of research: environmental education, public persuasion, and media studies. This chapter reviews foundations and current research in Environmental Education, fostering environmentalism, public persuasion, and video as a medium for social change. Each section begins with historical or cultural background information and proceeds to discuss theories, models, and practice. As is consistent with a grounded theory methodology, the literature review was completed after the study to avoid influencing the findings.

*Educating for Ecological Literacy*

Educational literacy, or ecoliteracy, is “the knowledge necessary to comprehend [ecological] interrelatedness, and an attitude of care or stewardship” of the Earth and its systems (Orr, 1992a, p. 92).

It implies a broad understanding of how peoples and societies relate to each other and to natural systems, and how they might do so sustainably.

It presumes both an awareness of the interrelatedness of life and knowledge of how the world works as a physical system.

*(Orr, 1992a, p. 92)*
In the early 1990s, Fritjof Capra (1996) and David Orr (1992) coined this term to describe the role of education and the qualities required for sustainable human existence; Ecological literacy is the goal of environmental education.

Environmental education (EE) has existed throughout human history, but was first defined in 1969 by Dr. William Stapp and his colleagues, as:

Education aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution. (Stapp, Bennett, Bryan, Fulton, MacGregor, Nowak, Swan, Wall, & Havlick, p. 31)

Through the 1970s, the theory and practice of environmental education spread around the world, spurred on by the establishment of the North American Association for Environmental Education (NAAEE) in 1971 and the United Nations Environment Program (UNEP) in 1972, along with coordinated efforts by the United Nations Educational Scientific and Cultural Organization (UNESCO) (Meadows, 1989) and countless independent grassroots activities. More recently, Environmental Education has merged with other disciplines to focus on Education for Sustainable Development (Darner, 2009, Scott, 2007).

In his address to the 4th World Environmental Education Conference, Scott (2007) reviewed the progression of environmental education research over the past 30 years, noting that studies have continued to focus on programming and evaluation, educator training, attitudes and behaviours, and relationship with place. Recent developments include more international study, wider reporting of research, more inclusive research
that considers both traditional and non-traditional knowledge and that integrates many disciplines, such as psychology, communications, and geography. Recent research also uses “positivist, post-positivist, interpretivist, and critical paradigms, drawing on feminist, ethnic, cultural and other perspectives” (Scott, p. 3).

An ongoing question is what constitutes effective environmental education. The NAAEE (2004) published guidelines for excellence in non-formal environmental education programs (i.e. those delivered outside the formal education system). Their six key characteristics of excellence in programs are:

1. Needs assessment: Programs are designed to address identified environmental, educational, and community needs and to produce responsive responsible benefits that address those identified needs.

2. Organizational needs and capacities: Programs support and complement their parent organization’s mission, purpose, and goals.

3. Program scope and structure: Programs are designed with well-articulated goals and objectives that state how the program will contribute to the development of environmental literacy.

4. Program delivery resources: Programs require careful planning to ensure that well-trained staff, facilities, and support materials are available to accomplish program goals and objectives.

5. Program quality and appropriateness: Programs are built on a foundation of quality instructional materials and thorough planning.
6. Evaluation: Programs define and measure results in order to improve current programs, ensure accountability, and maximize the effects of future efforts. (NAAEE, 2004, p. 6)

While these guidelines were developed by EE practitioners and will allow for assessment and planning of programs for any organization, they are very general and do not define specific qualities or activities that are effective in fostering ecological literacy.

Connecting with local environments and wildlife, whether urban or rural, is important in stimulating environmental knowledge, awareness, and agency. Fisman (2005) explains that “the best way to understand children is to see them as individual organisms that are functioning in a complex [local] ecosystem” (p. 48) and a precondition to their learning and bonding with that local environment is a sense of security in that place. In their study of youth in Australia’s Murray Basin, Lane, Luca, Vanclay, Henry, and Coates (2005) suggest that “the local scale allows issues that may seem abstract and overwhelming to be understood in a concrete and workable context. Connecting with local environments also provides opportunities for linking teaching and learning experiences with action and the development of agency,” even beyond the local to the global (p. 361). This may involve community service and stewardship projects (Powers, 2004), education and conservation (Dimopoulos, Paraskevopoulos, & Pantis, 2008; Engels & Jacobson, 2007), and intergenerational learning (Vaughan, Gack, Solorozano, & Ray, 2003). In fostering a relationship between individuals and local natural systems, the value of both Western and traditional knowledge and pedagogy is increasingly recognized as essential for both aboriginal and non-aboriginal youth (Bartlett & Marshall, 2009; Swayze, 2007). It is no surprise that learning about and connecting with one’s
homeplace is a logical first step in building knowledge and environmentally positive behaviour, as Thomashow (1995) describes:

It is through the place where we live that we construct our personal identities, relate to the landscape, and determine what is important in our lives . . . To have a sense of place is to merge our personal geography with the ecological landscape, incorporate maps of memory with how we dwell in a bioregion. (p. 194)

Increasingly, information technology (IT) is being used as a vehicle to deliver EE with varying degrees of success. Mzarek (2007) observed that “in many situations the technology [is] being used as a presentation and research tool . . . The move to using the technology as a tool for synthesis and constructive thinking with the students [is] unfortunately still evolving” (p. 4). Some research has shown that IT does enhance student learning (Siegel, 2006; Aivazidis, Lazaridou, & Hellden, 2006). Aivazidis et al. assert that technology is effective in developing environmental knowledge and attitudes, and provides opportunities for students who are “often hinder[ed] from directly experiencing nature and environmental issues” due to time and financial constraints” (p. 50). Bateman (2007) uses computer software as a springboard to inspire and enrich experiences in nature in the Get to Know program. To the contrary, Wright (2008) found that in an 16 week environmental studies class, the “in-class group came away from the course with significantly greater knowledge and more environmentally friendly opinions compared with the Web-based group” (p. 41).

Environmental education out-of-school field trips are effective in producing both immediate and long-term positive results on environmental knowledge, attitudes, and
behaviour, although longer residential programs tend to have more lasting effect on behaviour and knowledge retention than shorter programs (Farmer, Knapp, & Benton, 2007; Hoody, 1995; Knapp & Benton, 2006). Stern, Powell, and Ardoin (2008), however, documented that students’ interest in learning and their connection with the natural world fades in the months following the program. Research that ascertains the effects of EE programs on connectedness to nature, attitude, and knowledge from pre- and post-fieldtrip classroom instruction is currently inconclusive (Smith-Sebasto & Cavern, 2006). Smith-Sebasto and Walker (2005) do propose that effective residential EE programming:

(a) ensures that students’ safety and social well-being needs are met before engaging them in scientific or even recreational sessions;

(b) is more efficacious when the program is presented based on a learner-centered model of content and skills selection and delivery and not an educator-driven, top-down approach; and

(c) recognizes that students are often receptive to learning more about an environmental issue or problem they find confusing or developing a skill they initially find challenging. (p. 40)

As well as residential programming, sustained in-class learning, such as in Hsu’s (2004) study of the effects of a 16 week college course in Taiwan, has also been shown to foster long-term effects on sustainable behaviour.

Active participation is necessary for learners to engage in environmental education, social justice issues, and community action. Wigginton (1986) states that to educate youth, one must let students guide their own learning. “The best way to teach and hone the skills we want our students to have. . . is by plunging them into real work that
requires those skills" (p. 94). Youth can assist with program planning, implementation, leadership or teaching roles, choice, or consultation, leading to ownership of the program and integration of the content (Camino & Zeldin, 2002; James & Bixler, 2008; Lane, Luca, Vanclay, Henry, & Coates, 2005; Libby, Rosen, & Sedonaen, 2005; Raynolds, 2006). At the Youth Leadership Institute (YLI) in San Francisco, they recognize that:

young people have been left out of the process and without true decision-making power around issues that directly and indirectly impact them . . .

[The YLI] attempted to create settings where both youth and adult voices can be heard on an equal level, with a reciprocal value to each participant’s contribution. (Libby, Sedonaen, & Bliss, 2006, p. 22)

Raynolds’ (2006) youth focus group at Alberta’s Pembina Institute identified that to be successful, youth should determine some of the content of the environmental education programs based on their interests and needs, and that programs should involve some peer instruction. Blanchet-Cohen’s (2008) work explored how children define themselves and develop personally and socially through direct involvement in environmental learning. Her study affirms that “early adolescents not only have the capacity to grapple with issues of rights, responsibilities, and feelings of belonging with the human and biotic community, but also grow through these interactions” (p. 14).

Traditional teacher-centered education perpetuates the status quo as current social organizations and structures are reproduced and reinforced with every lesson (Gibbons, 1990). Capra (1999) and Orr (1992b, 2004) suggest that to create ecoliteracy, there needs to be a transformation of the structure of education to integrate the environment into everything, from school design to curriculum and pedagogy. Environmental education
should be more than a fringe study, rather “all education should be environmental education” (Orr, 2004, para. 1).

**Fostering Environmentalism**

Environmental education has a goal of fostering ecological awareness and sustainable behaviour, but other factors are necessary for the practice of ecoliteracy. Chawla (1998) and Palmer, Suggate, Robottom, and Hart (1999) identified *Significant Life Experiences* that are primary factors in developing environmental attitudes; these are experiences of nature and the outdoors (particularly in childhood), people (family members, teachers, mentors), education (primary, secondary and tertiary) and work. Other influences frequently identified included media, organizations such as Scouts, youth groups and environmental NGOs, negative messages about the environment (e.g. ozone depletion, pollution) and travel. Orr (1992a) concurs that childhood experiences in nature, teachers or mentors and “books that explain, heighten, and say what we have felt deeply” all contribute to one’s ecoliteracy (p. 88). Arnold, Cohen, and Warner’s (2009) recent study verified that, similarly, for youth, the main self-identified factors that inspire environmental action are time outdoors, friends, role models, teachers, youth groups, and conferences; books and media were only cited as influences for 25% of their participants.

One of the most fundamental factors in fostering pro-environmental attitudes and behaviours is time spent in nature, especially in childhood. Louv (2006) writes, “the protection of nature depends . . . on the relationship between the young and nature – on how, or if, the young attach to nature” (p. 154). He believes the failure to make citizens
more knowledgeable and sustainable in their choices stems from *Nature Deficit Disorder*, the separation of children from the natural world:

Informal educational environments provide important opportunities for the promotion of environmentally sustainable attitudes and behaviours that are rarely possible in more formal contexts. They allow learners to engage *with* and *in* the environment, to observe the evidence and effects of environmental mismanagement, and to explore and construct their environmental knowledge, skills, attitudes, beliefs and behaviours in personally relevant and meaningful ways.

(Ballantyne & Packer, 2005, p. 290)

Changing behaviour requires more than a linear progression of acquiring knowledge, developing pro-environmental attitudes, and acting more sustainably, and is more complex than having a significant life experience that leads to green lifestyle choices (Darner, 2009). Hines, Hungerford, and Tomera (1986) developed a model of factors that lead to environmentally positive behaviour that includes attitude, locus of control, personal responsibility, skills for action, knowledge of action strategies, knowledge of issues, and intent to act. Hwang, Kim, and Jeng (2000) concluded that “if environmental educators want to improve or change their subjects’ intention to act, it would be [most] effective to use programs and materials that can stimulate internal locus of control” (p. 24), more so than other factors. This research builds on Bandura’s work (2001a) on Social Cognitive Theory and self-efficacy (locus of control), a person’s “beliefs in their capability to exercise some measure of control over their own functioning and over environmental events” (p. 10).
In contrast, Stern (2000) proposes that people will act for the environment for its intrinsic worth or because of the extrinsic benefits for humanity, because they understand and take ownership of the issues, and because they feel they can make a difference. Gotch and Hall (2004) propose that it is most effective to work on changing attitudes, and behaviour change will follow. This contradicts Festinger and Carlsmith’s (1959) research on Cognitive Dissonance as their theory explains how attitudes can be shaped by behaviour in order to reduce the tension between an action and a subject’s beliefs.

Meinhold and Malkus (2005) findings demonstrate that among adolescents, there is a link between environmental attitudes, knowledge, and their behaviour. The correlation between their participants’ attitudes and behaviour was strengthened when participants exhibited greater knowledge of issues and self-efficacy. Chawla and Flanders Cushing (2007) argue public political action is necessary to combat the catastrophic impact of multinational corporations and governments, and will be more effective than personal acts such as recycling and using public transit. They suggest that schools and environmental educators build agency and self-efficacy to “prepare students for political action . . . To do this effectively, environmental educators [must] promote a child’s basic sense of competence and sense of competence in working for common goals with a group” (p.448). Darner (2009) points out that all research up to this point in Environmental Education has only examined desired pro-environmental behaviour, and what needs to be investigated is motivation. She links Environmental Education to Self-Determination Theory, which proposes that “humans are active, growth-oriented organisms who are naturally inclined toward integration of their psychic elements into a unified sense of self, and integration of themselves into larger social structures” (Deci &
Ryan, 2000, p. 229). Darner (2009) suggests that “pro-environmental behaviours correlate most highly with self-determined motivation” (p. 45), and proposes applications for classroom education and further research.

There are deterrents to behaving more environmentally responsibly, both external, such as multinationals, governments, and social norms that encourage consumerism and the status quo, and internal factors such as inertia, selfishness, fear, helplessness, and a belief that technology will save us (Oskamp, 2002). Sobel (2007) writes about ecophobia, the condition in which:

too much knowledge about environmental tragedies actually discourages environmental behavior… If global warming is a done deal, why should I bother to do anything about it? If this is true for adults, who have well-developed capacities to shield themselves from information overload, think how this must be affecting children. (p. 17)

Public Persuasion

There have been efforts to influence public opinion dating back thousands of years (Jowett, 1986). Ancient Greek city-states undertook systematic campaigns of persuasion and propaganda and Plato and Aristotle codified rhetoric in the 5th Century BCE. In his Rhetorics, Aristotle (N.D.) described the need to observe "in any given case what are the available means of persuasion” (Book 1, Part 2) and identifies the character of the speaker, the nature of the receiver, and the message itself as the three aspects of persuasion to consider (Shelby, 1986). Confucius’ Analects, also discuss the use of rhetoric to influence citizens (Jowett, 1986). The term “propaganda” was first coined to
describe the college and congregation established by Pope Urban VIII in 1627 for the education of missionary priests, the “sacra congregatio christiano nomini propaganda” (Benigni, 1911). From that time, the term propaganda has been used as “any institution or scheme for propagating a doctrine or system . . . in its true sense propaganda is a perfectly legitimate form of human activity” (Bernays, 1928, p. 22). Edward Bernays, and Walter Lippmann were among the early proponents of the use of mass media and psychology for political and corporate persuasion (Ewen, 1996). Bernays justified the use of the media in manipulating public opinion as organizing the chaos of information and choices available to the public. He writes, “the instruments by which public opinion is organized and focused may be misused. But such organization and focus are necessary to orderly life” (Bernays, p.12). More recently, Herman and Chomsky (1988) are more critical of the media’s role in North America:

The media [serves a] ‘societal purpose,’ but not that of enabling the public to assert meaningful control over the political process by providing them with the information needed for the intelligent discharge of political responsibilities. On the contrary, a propaganda model [of media] suggests the “societal purpose” of the media is to inculcate and defend the economic, social, and political agenda of privileged groups that dominate the domestic society and the state. (p. 298)

Herman and Chomsky (1988) also recognized the growing power of grassroots and public interest media outlets, long before the internet was a dominant medium. Local radio and cable television are touted as an alternative layer of media which can freely communicate subaltern perspectives. Gore (2007) brings the argument into the 21st
Century. He proposes using the internet extensively for an inclusive “democratization of knowledge” and public discourse that will decentralize power and reinvigorate society (p. 270).

The American Academy of Pediatrics’ Committee on Communication (2006) determined that children in the United States are exposed to over 3000 television advertisements per day on television, on the Internet, in magazines, and on billboards. “Increasingly, advertisers are targeting younger and younger children” (p. 2563), spending over $12 billion USD on advertising to youth annually (Palmer & Carpenter, 2009). There is a constant effort to shape public opinion through marketing, education, public relations, and propaganda (Shelby, 1986).

*Cultivation Theory*

In 1969, Gerbner first proposed Cultivation Theory, the concept that “television exerts a gradual, long term influence on the viewing public’s beliefs about the real world” (p. 138). He argues that, with continual or repeated exposure to media, both individual and public consciousness, attitudes, and behaviour will be transformed. Research confirms that “heavy [television] viewers see the world in a manner that is more similar to the way reality is presented in popular television programming more often than light viewers do” (Hetsroni, 2008, p. 208).

Numerous studies over the past 30 years have provided evidence of a *cultivation effect* of long-term exposure to television programming, and examined aspects of cultivation such as content, frequency of topic representation, and the psychology of cultivation (Harmon, 2001; Hetsroni, 2008; Morton, Wilson, & Laing, 1999; Pechmann & Goldberg, 1999; Morgan & Shanahan, 1997; Shrum & Darmanin, 1999; Van den

One significant refinement to Cultivation Theory is the concept of *mainstreaming,* the idea that the cultivation effect is non-linear and dependent “the angle and direction of the ‘pull’ . . . towards the centre of gravity, the ‘mainstream’ of the world of television” (Morgan & Shanahan, 1997, p. 17). The *pull* is affected by the location and lifestyle of groups of viewers. Recent research investigates the psychological nature of cultivation, whether the effect is a result of *active learning and construction* of meaning and attitudes, or a *passive available heuristic,* the difference being the level of cognition involved (Schroeder, 2005). The former describes an individual’s conscious consideration and rationalization of messages to construct meaning. The latter relates cultivation of attitudes to the ease of access to prior knowledge in the interpretation of messages. Schroeder reports that active processing of persuasive messages may be more conducive to a cultivation effect, though evidence exists that passive processing may also lead to a cultivation of attitudes.

Cultivation theory is not without its criticism. Some studies show little correlation between viewing and attitude change (Harmon, 2001, Schroeder, 2005) or frequency of
viewing and degree of cultivation (Potter, 2004). Potter returns to Gerber’s original proposition that cultivation occurs at a macro-societal level, and questions the body of research that focuses on individual beliefs. In response, he proposes the Media Gravitation Theory, which attempts to explain how media and other factors affects culture and why certain beliefs are widespread among groups of people within a society. “It does not try to predict what any individual will believe. Instead it keeps the focus on the macro level by looking at what the mean public beliefs are” (p. 11). Morgan and Shanahan (1997) suggest that much of the Cultivation Theory’s criticism is “as much a political phenomenon as anything else. Cultivation theorists were attacking the political basis of mainstream American media sociology” (p. 9).

Social Cognitive Theory

Bandura (2001a) rejects the notion that human behaviour is exclusively shaped by either environmental influences (response to stimuli) or internal motivations (wants, needs and dispositions), and proposes Social Cognitive theory to explain why people behave in a certain way. He believes that behaviour is a result of the interplay of “personal factors in the form of cognitive, affective, and biological events, behavioural patterns, and environmental [and social] events . . . people are producers as well as products of social systems” (Bandura, 2001b, p. 266). Media, for Bandura, can teach new forms of behaviour (by modeling), provide motivation for behaviour change (for example, by presenting alternative social norms), or reflect and spread existing personal or cultural behaviours.

The course of diffusion [of ideas and behaviours] is best understood by considering the interactions among psychosocial determinants of adoptive
behavior, the properties of innovations that facilitate or impede adoption, and the network structures that provide the social pathways of influence.

(p. 292-293)

Elaboration likelihood model

Cacioppo and Petty (1984) propose the Elaboration Likelihood Model (ELM) to explain the level of cognition in response to persuasive messages. Relevance, prior knowledge, message quality, confidence in the messenger, message, and one’s personal agency all affect the “likelihood one engages in issue-relevant thinking with the aim of determining the merits of the arguments for a position” (p. 674). When elaboration likelihood is on the higher end of the continuum:

people are likely to:

(a) attend to the appeal;

(b) attempt to access relevant associations, images, and experiences from memory;

(c) scrutinize and elaborate upon the externally provided message arguments in light of the associations available from memory:

(d) draw inferences about the merits of the arguments for a recommendation based upon their analyses of the data extracted from the appeal and accessed from memory; and

(e) consequently derive an overall evaluation of, or attitude toward, the recommendation. (p. 673)
This will result in an enduring change in attitude, they argue, that will predict behaviour change. Where elaboration likelihood is high, consideration of the message occurs along the “central route to persuasion, involves effortful cognitive activity whereby a person draws upon prior experience and knowledge in order to scrutinize carefully all of the information relevant to determining the central merits of the position advocated” (Petty & Briñiol, 2002, p.178).

When the elaboration likelihood is on the lower end of the continuum, people will not devote attention to the message or consider its benefits. Messages will be processed via a peripheral route, where attitudes are influenced by simple cues in the persuasive message, such as the music, spokesperson, or setting. Peripherally processed persuasion tends to be less accessible, less enduring, and more susceptible to contradiction by other messages (Petty & Briñiol, 2002).

In the ELM, one message variable can serve different roles in different contexts and for different people (Petty & Briñiol, 2002). One aspect of a message can serve as a strong argument (central route, high elaboration likelihood) for one individual but only serve as a secondary cue for someone else (peripheral route, low elaboration likelihood).

The ELM is used extensively to design persuasion strategies and assess the effectiveness of education and marketing campaigns. Igartua, Cheng, and Lopes (2003) showed AIDS films with a strong and weak message to undergraduate students and discovered that the same attitude shift resulted from both central and peripheral processing. Films with a high level of engagement directly communicated that the viewers were at high risk of contracting HIV/AIDS, whereas the “weaker” message implied that the viewers were at low risk. Nan (2007) discovered that those more highly
engaged with health issues respond more strongly to a negative outcome message because they wish to avoid further declines in their health. Less engaged individuals respond better to positive outcome messages because they wished to prevent illness. Schroeder (2005) links cultivation theory’s active learning and construction mode, described above, with the central route in ELM, and the passive availability heuristic model (Shrum, 2001) with the peripheral route.

ELM has, however been criticized because at times it states the obvious and it is difficult to measure or ascertain the cognitive processes at play (Cook, Moore, & Steel 2004). Further, it is impossible to distinguish if variables in a message are part of the central argument or peripheral cues. Despite these objections, Elaboration Likelihood is a useful model to explain effective persuasion and has been successfully applied in consumer marketing and health promotion campaigns.

Persuasion Theories, Youth, and the Environment

Researchers have applied persuasion theories and models to children, youth, and environmental issues with mixed results. Brucks, Wallendorf, and Preeman (1999) demonstrated a cultivation effect on young children from billboard and print advertisements for alcohol and cigarettes. Metzler, Weiskotten, and Morgen (2000) apply ELM to students who attended presentations on AIDS. They found that students engaged and elaborated more when either the speaker was more credible or if the arguments presented were more convincing. In Pechmann and Goldberg’s (1999) study of effective anti-smoking advertisements, stronger messages were those which contained family or peer-related social norms, discussed negative impacts of smoking on family members, or showed non-smokers as having a positive social image. Werner, Stoll, Birch, and White
(2002) confirmed that the central route of cognition in ELM was more effective in changing on-campus recycling behaviour, particularly if coupled with a validation message that recycling may require effort. “Validation appeared to have the desired impact of increasing message scrutiny. . . We imagine a mini-battle played out in students’ heads, . . . stimulated by a sign that acknowledged their complaint but encouraged them to think about it” (p. 200). Te’eni-Harari, Lampert, and Lehman-Wilzig (2007) found that children and youth, aged 4-15, did not use central and peripheral routes in responding to messages. They concluded, that there are “no significant differences . . . in advertising effectiveness between high and low involvement” (p. 331), however the individual’s age and the style of message were factors in the degree of elaboration and intent to purchase. Livingstone and Helsper (2006) also found that the effectiveness of advertising is not linked to age, but rather to a child’s media literacy. These findings must be taken into account in the current study.

Baror and Cialdini (2000) apply ELM to pro-environmental public service announcements (PSA). They recommend designing PSAs for central rather than peripheral processing, so that viewers will consider the message more deeply and the effects will be more enduring. They suggest that it is advantageous to assess the target audience and provide vivid, concrete and practical messages in order to stimulate a higher likelihood of elaboration. They also suggest including peripheral cues which viewers will recall as they go about their daily lives, showing desired behaviours favourably, and encouraging the audience to commit to an action in the PSA. Rucker and Petty (2006) suggest similar practices for health promotion PSAs.
Video as an Effective Medium for Social Change

Television and on-line video is a part of contemporary culture. Visual media has been criticized as being detrimental to society, fostering negative behaviours and consumerism. At the same time, visual media are also outlets for creativity and vehicles of social change.

Youth today are plugged in to modern media and technology more than any other generation (Shade, Porter, & Sanchez, 2005). Goodman (2003) reports that American children aged eight and over spend almost seven hours per day on average in front of a screen of some kind. The trend is not limited to children and youth. Statistics show the incredible recent growth of on-line video sites:

- The number of American users frequenting online video destinations has climbed 339 percent since 2003.
- Time spent on video sites has shot up almost 2,000 percent over the same period.

In the last year alone, unique viewers of online video grew 10 percent, the number of streams grew 41 percent, the streams per user grew 27 percent and the total minutes engaged with online video grew 71 percent. (Nielsen Company, April 22, 2009)

Zaradic and Pergams (2007) call this phenomenon “videophilia, the new human tendency to focus on sedentary activities involving electronic media” (p.141), with a host of negative consequences, including:

- reduced time available for outdoor physical activities and nature experiences. Conversely, outdoor play and nature experience have proven beneficial for cognitive functioning, reduction in symptoms of ADD,
- increase in self discipline, and emotional well being at all developmental
stages. Other detrimental effects of videophilia seem to be more related to its potential for isolation and much faster pace than real time. High levels of children’s electronic media consumption are correlated with attentional problems and increases in loneliness and depression. (p. 141)

This is what Louv (2005) calls *Nature Deficit Disorder*.

Screen time is not all bad. Experience of nature through television or the internet does “provide unprecedented access for children to natural areas, delivering some of the relaxing and educational aspects of nature vicariously” (Zaradic & Pergams, p. 141-142). This may lead to stronger environmental attitudes and sustainable behaviour, though it may also present the image that accessible natural areas are less interesting and as dangerous as the nature presented on screen.

Niesyto, Buckingham, and Fisherkeller (2003) suggest that there is a media gap between youth and adults, “because the media that are now most popular with young people are inaccessible, thematically and aesthetically, to the majority of adults” (p. 462). They believe that the preferred discourse of youth, “presentational forms of symbolization (such as body language, images, and music)” may now be fundamentally different than the “logico-centric verbal and written modes” of previous generations (p. 462). International video projects such as Appalshop in Kentucky (Moored, 2008), VideoCulture in the United States and Europe, Taking it Global in South Africa, Canada, and over 200 countries (Larkin, Lombardo, Walker, Bahreini, Tharao, Mitchell, & Dubazane, 2007), and the Educational Video Center in New York City (Goodman, 2003), all document the ability of youth video and other visual media to transcend culture, language, and nationality. One Appalshop participant who was part of a multinational
video project states, “anybody, Americans, Indonesians, whoever can watch the video and understand what we’re trying to say” (Moored, p. 19). For youth, media has moved beyond being entertainment or dissemination of information; the global media culture comprises “social networks that are crucial to human development,” (Asthana, 2006, p. 44) and young people are active participants and creators rather than passive consumers in this milieu.

In his *Video Critical* study, Gauntlett (1988) documents children’s high level of media literacy and capacity for using video cameras to communicate environmental messages. Young people demonstrated:

- familiarity with the constructedness of the media, [the] ability to conceive of the final text even as they recorded elements of it out of sequence, and
- [the sheer] speed with which they picked up how to operate the equipment and began creative activity. . . Making a video came naturally to them.

(p. 7)

Asthana (2007), Goldman-Segall (1998), and Goodman (2003). describe youth’s facility to create effective videos, with adult guidance. “The experience of the production workshops clearly shows that it is possible for young people . . . to produce meaningful montage or collage-like video films within a few days” (Niesyto, Buckingham, & Fisher Keller, 2003, p.477). Not only can youth create films, through the process they develop media literacy:

They can begin to understand through their own experience the multiple layers of data that make up the television and videos they watch and the
magazines they read. . . how the media acts as a frame and a filter to the world, while appearing to be a clear window.” (Goodman, p. 6)

Youth media projects create identity and foster a sense of agency. Creating films empowers youth, “giving young people a way of expressing themselves which is generally found to be novel, exciting and unusual” (Gauntlett, 1988, p. 6). It can give “voice to cultures, experiences, aspirations and questions virtually denied expression,” be they immigrants in inner-city London (Downing, 2001, p. 198), Palestinian and Israeli youth at a camp in Canada (Peace it Together Society, 2009), or young people in Nigeria and Kyrgyzstan (Asthana, 2007). It “provide[s] a sense of accomplishment and ownership, both individual and collective” (Asthana, p. 54). A similar Photovoice project in South Africa “chang[ed] people’s perspectives and mindsets [and had] a far more lasting effect than simply transferring knowledge and skills” (Olivier, Wood, & De Lange, 2007, p. 25). Projects such as these develop youth agency by exposing and acknowledging injustices, systematically developing skills and social networks, and introducing opportunities for youth to make a difference (Soep, 2006).

Video can empower youth, to create social change (Teasley, 2004). Goodman (2003) has created a teacher’s guide to changing the world through video production. His Educational Video Center in New York City runs programs in which youth identify issues, create and share films, and spark community and civic action. He explains how youth from all backgrounds can “understand how media is made to convey particular messages and how they can use electronic and print technologies themselves to document and publicly voice their ideas and concerns regarding the most important issues in their lives” (p. 3). QuantumShift.tv (2007) encourages “shift[ing] this culture from 'me' to 'we'
through ... shar[ing] the stories of those who positively impact social and environmental change on our planet” (para. 2). Van Mele, Zakaria, and Bentley (2007) document a PV project in Bangladesh in which rice farmers shared effective seed sorting and storage strategies which were adopted by over 85% of villagers. TV Maxabomba, in a depressed quarter of Rio de Janeiro, focused attention and energized the community about the town hall’s total neglect of the neighbourhood “by photographing confrontations with the mayor and screening local protests & public discussions” (Downing, 2001, p.197-198).

UNESCO has recognized the excellence of other local media projects in addressing community social justice issues, for example Camara! Ahi Nos Vemo in Mexico City, Action Health Participatory Video Project in Nigeria, the Children’s Media Center in Kyrgyzstan, Trendsetters in Zambia, and the Child Rights and Participatory Media in Civil Society, which has projects in Haiti, Honduras, Nicaragua, El Salvador, and the Dominican Republic (Asthana, 2007). Through planning and creating videos, particularly through a Participatory Video model, “notions like civic engagement, participatory democracy and development acquire[d] a concrete immediacy in the hands of young people”; kids under[stand] these ideas and help[ed] adults see how media could be used for child & youth development” (Asthana, 2007, p. 54). Filmmakers and viewers engage in the videos and become activists.

There are a plethora of opportunities for youth to create environmental videos, including YouthCore’s Green Screens Project, BC Hydro’s Off the Grid contest, Planet in Focus’ Youth Camera Action! camps, and the U.S. National Council for Science and the Environment’s youth video contest, but is video an effective medium to foster changes in environmental thinking and behaviour? Shanahan and McComas (1999) found that that
mainstream media gets viewers to think about the natural environment, but due to its materialist meta-narrative, network television does not cultivate environmentalism. They suggest that “if those committed to social action on environmental issues want to make progress toward a truer and more realistic environmental narrative, they may well wish to consider fundamentally disconnecting themselves from mainstream media institutions” (p.178). Many independent filmmakers are doing just that, presenting their works on-line or at “green” film festivals such as the Banff Festival of Mountain Films and Planet in Focus (Chopra & Elliot, 2007). Canadian nature artist Robert Bateman (2007) recognizes the power of using electronic media to nurture environmentalism. He developed the Get to Know Interactive CD Program, involving computer games and videos to encourage children to “get outside” (Welcome Video). If viewers of these films have a high likelihood of elaboration, as described above, environmental videos may be effective.

Research has uncovered strategies that will enhance engagement in persuasive videos. It is important to note that youth are receptive to using new technologies such as cell phones and streaming video to educate or persuade. Shepherd (2003) found that undergraduate students showed significant enthusiasm for the use of streaming video for instruction in many departments. Nigeria’s Action Health Participatory Video project reported success in communicating information about AIDS because the videos were entertaining and well-received (Asthana, 2007).

Echoing research in environmental education, the effectiveness of involving youth in video production and filming in local settings has been demonstrated. Youth connect with the content of PV AIDS videos in Nigeria because “the videos are ‘of the teens, by the teens, and for the teens’ – viewers feel encouraged to discuss issues important to their
well being” (Asthana, 2007, p. 42). Niesyto, Buckingham, and Fisherkeller (2003) also found an affinity among young people for videos produced by youth for youth. “An argument was made by New York participants that these VideoCulture productions, especially those about drugs, would be more influential and meaningful in educational contexts since they were made by adolescents, not adults” (p. 474). Young audiences especially valued that videos reflected and depicted “teens being themselves or doing whatever they wanted” (p. 476). Shepherd (2003) suggests that university students learn more from educational videos if they tell stories, convey emotions, and provide real life examples with which students can identify. In research for a British teen pregnancy education strategy, youth felt strongly that information coming from other youth was most effective on sexual health issues (Centre for Social Action, 2007). In their rice education PV project, Van Mele, Zakaria, and Bentley (2007) describe how memorable it was for villagers to see their peers demonstrating effective techniques. Familiar faces and local settings allow for viewers to more easily identify with issues presented in videos (Downing, 2001).

Studies have shown that shocking and humorous videos attract viewers. NHS Leicester City’s (2009) Kicks video, with over a million YouTube hits in just a few months, is a result of this research. The video is rough and grainy and depicts what appears to be a crowd watching a schoolyard fight, but is revealed to be a teenage girl in labour. The health authority’s chief executive explains, “We spent a lot of time talking to young people about what would grab their attention. And they said, ‘Make it funny or make it shocking,’ so we’ve done exactly what the target audience asked us to do” (in Nelson, 2009, p. A14). This is reinforced by the Nielsen (2009, June 15) ratings of the
most watched television shows in the United States, of which the top six programs are all crime shows or comedies. Shanahan and McComas (1999) also assert that “television may produce greater environmental concern through an ‘alarmist’ mechanism” (p. 143). Males in particular are attracted to action and violence in videos (Niesyto, Buckingham, & Fisher Keller, 2003).

Access of viewing and ease of technology are also important factors in engaging audiences. In one media study, university students were frustrated with technical difficulties while trying to watch educational streaming video, but they ultimately managed to overcome any problems encountered (Shepherd, 2003). Downing (2001) suggests that the internet has overcome distribution issues, with “videos and interactive media . . . [being] uploaded, transmitted, circulated, and posted on-line daily” (p. 203).

Goodman (2003) and Lunch and Lunch (2006) describe processes of video production to empower and communicate within communities. They explain different methodologies, Doc Workshop and Participatory Video, for participants to develop and produce videos for social change, including improving the messaging and technical quality of films. The literature reviewed did not uncover studies relating the technical merits of videos to their effectiveness in changing attitudes and behaviour among viewers.

Summary

There has been much research that investigates effective environmental education, public persuasion, and the role of media in fostering social change. Methodologies and models such as the Elaboration Likelihood Model and Participatory Video have been
studied extensively, however no research was uncovered that explores youth-produced video designed to engage their peers in environmentalism. The current study investigates this gap in research.
Chapter Three: Research Methodology

In the modern world, with our globalised, inter-linked economies and cultures, it has become all the more important for ordinary people to be heard above the cacophony of over-manipulated dominant-culture media messages.

(Lunch & Lunch, 2006, p. 6)

Research Design and Rationale

This research project is a qualitative study that analyses the pro-environmentalism videos produced by seventeen 11 to 14 year olds at Central Middle School in Victoria, B.C., and makes recommendations for content and methods of communication needed to engage youth in environmental thinking and behaviour. It investigates the following research questions:

1. What content do youth communicate through video to engage their peers in environmentalism?

2. What visual messaging do youth use to communicate that content to their peers?

Research (discussed in Chapter Two) does suggest possible answers to these questions, but I felt my findings would be more authentic and valid if the participants told me what they felt would influence their peers.

The study follows a Participatory Video (PV) methodology (Lunch & Lunch, 2006; White, 2003), coupled with a content analysis (Holsti, 1969; Krippendorff, 2004)
of student-produced films. The content analysis of participant videos and reflections led to a grounded theory (Charmaz, 2006; Strauss & Corbin, 1990) that proposes answers to the research questions. This process allowed for maximum participant freedom in video development and an open-ended method to develop recommendations and conclusions.

Data Collection

The sources of data for this study were participant questionnaires, videos, and written reflections. My field notes and reflections were reviewed and compared with participant data. A survey of related literature corroborated and provided context for data collected. The data collection process is detailed below.

Participants

Seventeen students from Central Middle School in Victoria, B.C. participated in the study. The group consisted of seventeen students, eight male and nine female, who selected the Videos to Change the World activity for their Term Two Enrichment (see Appendix A for description). The course was one of approximately twenty offerings ranging from Badminton to Crafts, Italian for Beginners to Circus Arts. The course descriptions made no mention of environmental issues or which teacher was offering the activity, although many older students are aware that I use video production in my classroom and coordinate the school “Green Team.”

The Vice-Principal collated student selection forms and assigned specific students to the program. Eleven students were in grade 6 (11/12 years old), two in grade 7 (12/13 years old), and four in grade 8 (13/14 years old). Approximately half of the participants were in the school’s French Immersion program and half in the English
stream. Of the group, two were visual minorities, three were from immigrant families with English as a second language, and one is Francophone, from Quebec. The group was representative of the school population, and reflected the diverse cultural make-up of Canadian society.

The participant group met in early January, 2009, for the first of nine Enrichment blocks. These took place on Wednesday mornings (10:47-12:08) from January through early March, 2009. Due to illness, school or family activities, not all participants were present at all sessions. Grade 6 students in Band were obliged to attend practice halfway through each session. Every effort was made to engage them fully in the time they were present, for example, by giving them priority use of video cameras and allowing them to use the camera outside of Enrichment time.

As the School District 61 and the Royal Roads University ethical review process was not complete until late January, the first three sessions focused on video production skills, videography games, and team building activities.

**Ethical Considerations**

Working with minors in a school setting to produce publically accessible videos implies numerous ethical considerations and provisions to safeguard participants and attain consent. We did not begin until a detailed Invitation to Participate and Letter of Consent was signed by participants and their parents (see Appendix B).

As a teacher at the school where this study took place, and the current or future classroom teacher of students participating in the study, it was imperative to inform students and their parents that all work produced and opinions stated in the study would
not be evaluated and were unrelated to academic activities at Central Middle School. The video activities had no bearing on classroom assignments, report cards, or participation in any activities at school. Taking part in the study was entirely voluntary and students had the right to withdraw at any time (i.e. exclusion of their videos from the study or changing their Enrichment activity). As many of the participants knew me as a teacher at their school or as a parent of one of their peers, it was necessary to stress that I am studying their personal perceptions and opinions, and that participants should not create videos to please me. To this end, I acted as a facilitator, providing technical assistance, rather than suggestions for content, techniques, or examples of other youth or environmental video.

To protect the participants’ right to privacy and control of their images and work, permission was attained from the youth and their parents before videos were shown, either to the study group or to a wider audience. Participants are not identified by name in videos or in this document although some chose to identify themselves in film credits and many are identifiable by their appearance in the videos. Participants had the opportunity to view and provide input or veto all of their own films before public screening. Non-public videos and other data are stored and will continue to be kept secure on the researchers’s personal password protected computer.

*Participatory video.*

Participatory Video (PV) is a branch of Participatory Action Research (PAR) (Reason & Bradbury, 2006). PAR is “a collaborative approach to research that provides people with the means to take systematic action in an effort to solve specific problems” affecting them or their community (Berg, 2007, p. 224). It is fundamentally consensual,
democratic, and participatory (Berg, 2007). Often, PAR “challenges deep-rooted power inequities” or “issues of power and knowledge within organizations [or] between individuals.” (Gaventa & Cornwall, 2006, p. 71). PV developed from Snowdon’s 1967 study of issues among community members on Newfoundland’s Fogo Islands. He asked fishers to film their perceived problems, share their movies, and discuss how they could collectively address their common concerns. The technique is now used extensively around the world in health promotion, development work, and other fields (Ghose, 2007; Lunch & Lunch, 2006; Van Mele, P., Zakaria, A. K. M., Nasrin, R., Chakroborty, B., Haque, M., & Rodgers, J., 2007).

Succinctly, PV is “a set of techniques to involve a group or community in shaping and creating their own film” that will educate or foster social change within the community (p. 10). Lunch and Lunch (2006), proponents of PV, propose that:

making a video is easy and accessible, and is a great way to of bringing people together to explore issues, voice concerns or simply be creative and tell stories. This process can be very empowering, enabling a group or community to take action to solve their own problems and also to communicate their needs and ideas to decision makers and/or other groups and communities. (p. 10)

PV gives the research tools to those being studied. In my study, youth were given digital video cameras and encouraged to document their personal or collective perspectives on fostering environmentalism. As with Goodman’s PV projects in New York City, my study participants “construct[ed] a powerful collection of words, music, and images that represented their own framing of reality” (Goodman, 2003, p. 43).
The PV process planned for this study involved the elements listed below:

1. Identifying participants and introducing the area of study.
2. Administering a questionnaire to participants on what issues are important to them as well as why and how they feel video can change the world.
3. Developing of camera skills through exercises and games.
4. Identifying issues and stories among the participants and their community through mind-mapping, prioritizing, and discussing.
5. Producing a series of short videos that included documentaries, public service announcements, and interviews.
6. Screening and discussing student videos in small or large groups.
7. Reflecting and writing by participants about video content and the production process in the middle of the study.
8. Discussing and sharing within the school community.
9. Analyzing the content of participants' videos.
10. Editing and compiling video footage that was shown to the entire school population at an assembly on Earth Day, 2009.
11. Administering a questionnaire to student audience of Earth Day presentation.
12. Distributing the film to school district and community decision-makers.

(Adapted from Ghose, 2007; Lunch & Lunch, 2006).

Each of these steps will be discussed in detail below.

PV is an effective tool to address the question of what content and visual messaging youth communicate through video to engage their peers in environmentalism
because it accurately documents youth perspectives, validates their experiences and opinions, and actively involves them in creating solutions to global and community environmental issues; further, PV uses a medium that is engaging for participants, accessible to youth in North America, and readily shared (Berg, 2006; Lunch & Lunch, 2006). Goodman (2003) has facilitated numerous youth video projects in inner city New York on such issues as gang violence, substance abuse, and racism; these films have stimulated community discussion, affected public policy, and changed how some youth think and act. As a tool to stimulate social change, a good peer-produced video "gets its ideas into the heads of some community members, who will experiment with [the ideas]" (Van Mele, Zakaria, & Bentley, 2005, p.11-12).

Participatory video games.

Insight (Lunch & Lunch, 2006), a PV development organization, has developed a series of games and activities to teach participants how to use a video camera and build positive group dynamics and communication skills. Over the first three weeks of the Enrichment program, students participated in the Name Game, the Disappearing Game, Storyboard Technique, Video Comic Book, Interviews, and Community Mapping (Lunch & Lunch, 2006). Games are described in Appendix C.

Insight generated this progression of games to work with disenfranchised citizens in developing nations. As youth, the participants in this study are similarly removed from positions of power in our society and most had limited experience in video production. They were from different neighbourhoods, classes, and programs at school. The games allowed participants to get to know one another better and have fun while developing their videography skills. As they were creating their environmental videos, participants
were using the both the terminology and the techniques learned in the PV games. The videos produced during the PV games were not analyzed for the research study, but they were viewed and critiqued by participants for their entertainment and technical merits.

*Introduction to the research project.*

When the group met at the end of January, I provided background information and consent forms to students. They were informed of the nature of my research, their choice to participate or not in the research aspect of the Enrichment, their right to withdraw, and potential uses of their films, including presentation at a school assembly, on websites, and at film festivals. They were informed of their anonymity in the research and opportunities for them or their parents to provide input, or veto, written and video data. I informed students of my role as facilitator and that they were free to identify subjects and create videos without any bearing on academic marks, report cards, or participation in school activities.

*Questionnaire*

Before participants began creating their videos, the students completed a short questionnaire (see Appendix D) asking:

In your opinion, what are three issues that are important to you?

Why are these issues important to you? What has influenced your ideas?

How can video change the world?

The purpose of the questionnaire was to stimulate personal reflection and group discussion. After the questionnaire was collected, the group brainstormed ideas for videos. They talked about what local, national, and global issues they were most
concerned about. Discussion also focused on videos that made an impact in their lives as entertainment, education, and inspiration. This activity was a springboard to later mind-mapping and storyboarding exercises.

*Identifying the story.*

During the third session, participants created a large collective mind-map (see photos in Appendix E). This allowed participants to explore issues that were of personal or common concern.

In pairs, participants filmed interviews in which two questions were asked.

(a) What will your film be about?

(b) How will you communicate your message?

They then divided into groups, each with a particular self-identified message and strategy for their videos. This led to discussions, planning, and storyboarding.

*Lights, camera.*

Production sessions in February and March were spent developing storyboards and scripts, filming, and editing. During this process, I endeavored to be neutral on video content and technique, even if the message strayed from an environmental theme. I tried to limit my interference to asking three questions:

What is your message?

How are you going to communicate your message?

How effective is your video in getting your message across?
By not imposing my personal or professional opinion or influence on participants, the videos produced were a reflection of youth attitudes, values, knowledge, and beliefs. They filmed and tried to communicate what they believed was important, resulting in a collection of videos that is diverse in both content and messaging. The specific videos and techniques employed are discussed in Chapter Four.

Participants were free to work individually or in groups. Three chose to work on their own, while the others formed groups of two to five students. Groups were fluid over the program, with members joining and leaving. Most of the groups were age-based.

Participants were encouraged to reflect or discuss the message of their video and decide how best to communicate it to their peers. They were asked to create storyboards and/or scripts to guide their production, detailing not only content, but video techniques, sound, and other effects that would be used. Once the planning stage was complete, participants took one of the school’s three digital video cameras and a tripod, if available, and went to film on or near school property. I travelled between film sites and the classroom providing technical feedback (e.g. How is the light affecting your shot? How is the sound here?) At the end of their filming, students returned to the classroom to view their footage on their video camera display or a television, or to download it to an iBook computer for editing. Storyboarding and filming were piloted during the PV games to ensure that participants were familiar with the video cameras and the planning.

Towards the end of the nine weeks, several participants asked if they could continue to work on their unfinished videos in the next enrichment term, although none of them did for several reasons. For many students, each Enrichment course is a complete unit, and students felt they were finished at the end of the nine weeks. Some were content
with the state of their movie. Many of the participants are involved in extracurricular activities such as Band and Track and Field, as well as out of school lessons and sports. They had no time to work on an “extra” project that had no bearing on their marks. Two of the participants did not finish because they were absent for extended periods of time. Also in my experience, middle school students find it difficult to maintain focus or interest in a project over several months. They are not at the developmental stage to see a project of this nature through without formal structure. Finally, it may be that some participants just did not care enough about their video projects to put in the extra effort to create a final edited version. All work completed by the end of the winter term was considered data for this study.

_Film critics._

Following the PV methodology, participants viewed and discussed the content and technical merits of rough video footage whenever possible. At times this occurred among a small group of students watching playback on the video camera or while downloading to a computer. Viewing and discussing videos also took place with larger groups of participants on the television mounted in the classroom.

Feedback was informal. Participants made comments as the videos played, as well as after. I facilitated discussion by asking the two guiding questions from the planning sessions. What is the message? Is it communicated effectively? I also asked participants what they felt did or did not work with the videos, and what they did or did not like. I made an effort to ask each student in turn, “what do you think?” to ensure that everyone’s voice was heard. Feedback was open, honest, and respectful. There was often humour. Individuals and groups accepted the peer input and frequently integrated it into retakes of
scenes or subsequent videos. Even more informally, participants spoke to their friends, classmates, and families about their film-making experiences and videos. These discussions may have influenced participants’ ideas and goals, or comments shared in group discussions during the following week.

At the end of February students were given fifteen minutes to write personal reflections about the content and the production process of their “videos to change the world.” Specifically, they were asked to respond to the question, “What are your thoughts on our Enrichment?” I had hoped to collect written reflections and view videos as a group at the end of each session, as suggested in PV guides. This was not possible with the limited number of video cameras, computers, and contact time each week, so discussion of footage took place predominantly in smaller groups and only one set of written reflections were produced.

**Data Analysis**

Content analysis.

A content analysis (Krippendorff, 2004) of video footage and written reflections identified the messages communicated by participants to environmentally motivate their peers. Content analysis “takes texts and analyses, reduces and interrogates them into summary form through the use of both pre-existing and emergent themes to generate or test a theory” (Cohen, Manion, & Morrison, 2007, p. 476). The process is systematic, that is, it follows consistently applied rules (Holsti, 1969); it should be objective - coding must follow clear and precise criteria, to eliminate as much as possible the researcher’s bias; finally it must have generality - findings must be linked to other data and theories to have meaning (Holsti, p. 5).
This study’s content units and the codebook for analysis considered visual elements, as well as spoken and written language. Analysis covered all video footage, written reflections, and researcher field notes from the six weeks of production. Where applicable, edited films were analyzed rather than rough footage as the editing process was used by participants to fine tune their message and messaging. While the technology exists for undertaking low level analysis to automatically code camera shots, sequences, and technical attributes such as panning and zooming (Chong-Wah & Ting-Chuen, 2001; Hanjalic, Lagendijk, & Biemond, 2001), these aspects of the videos were manually identified using coding software.

Goldman-Segall (1998) notes the importance of non-linear analysis of video to extract meaning. She describes breaking video footage into distinctive informational chunks, which she refers to as stars. Hanjalic, Lagendijk, and Biemond (2001) describe these as semantic segments.

The linking of one set of stars to another is dependent on where one is located at a given moment. The fact that we draw conclusions from what we are able to see and grasp from these different perspectives makes stars and constellations not only a good metaphor, but also a helpful model for designing ethnographic tools where different users can explore a range of ideas from many points of viewing. (Goldman-Segall, 1998, p. 124)

The data collected for this study can be reinterpreted by the researcher or others with different points of viewing, leading to different conclusions. The validity of this process is discussed below.
Analysis tools.

I used Atlas.ti software to analyze the texts and videos for this study. Before beginning, I experimented with Qualrus and NVivo. All three applications have advanced coding and theory generating features, tutorials, and clear graphics. All were considered as they facilitate analysis of multimedia files as well as text files. Atlas.ti was chosen as I found it easiest to learn and use and provided all of the analytical functions I required. I completed a pilot analysis of the early participant partner interviews to help me choose which software package to use, and to familiarize myself with the programs and their capabilities.

Defining the data.

This study undertook a content analysis of seven videos produced by participants over the six weeks of production. Videos ranged from one to seventeen minutes in length. Videos were all transcribed, and the text and visual/audio versions were coded separately. While I initially considered analyzing all rough footage produced by participants, it became apparent over the six weeks of production that videos were being refined, re-filmed, and edited to better communicate participants’ messages. I, therefore, decided to only analyze the most complete versions of videos.

A total of twelve written reflections of the process were analyzed. My research notes were also transcribed and analyzed using Atlas.ti. Transcriptions are included in Appendix F.

Formative codes.

Initial codes were suggested from three sources. In the pilot stage, analysis of participant interview videos indicated messages and techniques students would employ in
creating their “videos to change the world.” Codes were entered into Atlas.ti and described and qualified in the “code manager” window. My field notes recorded themes and techniques observed during participants’ planning, filming, and discussions during the production process. Other open codes became apparent from reviewing, downloading, and transcribing participant reflections.

Coding process.

The coding process involved tagging texts and videos imported into Atlas.ti as primary documents with formative and other emergent codes. This began as open coding, in which data is broken down into distinct units and assigned conceptual labels (Charmaz, 2006; Corbin & Strauss, 1990; Krippendorff, 2004). Glaser (2004) advises “running the data open,” while “coding for as many categories as fit successive, different incidents, [and] coding into as many categories as possible. New categories emerge and new incidents fit into existing categories” (p. 9).

Texts and transcripts were coded with “semantic” codes, which denoted the content or message of the texts. Videos were viewed and coded first with the semantic codes to delineate the content or message of the video. This included images, settings, visual text and titles, and activities presented. Videos were then coded a second time to delineate the technical aspects such as camera placement, editing techniques, and lighting. A final coding described the form or genre of the video: interview, documentary, drama, comedy, public service announcement, or other style. In this stage and throughout the coding process, it was essential to ask what was not present in the data and why.

In the second stage of analysis, axial coding, “categories are related to their subcategories, and the relationships tested against data” (Corbin & Strauss, 1990, p. 13).
Quotes and video clips clarified and refined categories. Similar categories were merged. This process was facilitated by the visual network tools in Atlas.ti (Muhr, 2004).

Selective coding, the final stage of analysis, grouped categories around “core categories” (Corbin & Strauss, p. 14) and suggested findings and theory to respond to the research questions. Again, the content analysis software automatically created a visual representation, or network of the core categories, and their corroborating data (Muhr, 2004).

Grounded theory.

Through the systematic coding of data, responses to the research questions and a grounded theory emerged. Charmaz (2006) describes the grounded theory process as:

systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories "grounded" in the data themselves. . . Thus data forms the foundation of our theory and our analysis of these data generates the concepts we construct. Grounded theorists collect data to develop theoretical analyses from the beginning of a project…We study how [participants] explain their statements and actions, and ask what analytic sense we can make of them. (p. 4)

It is an inductive process which integrates data. The data, rather than the researcher, defines the patterns (Cohen, 2007).

From the outset, this study simultaneously collected and analyzed data: video footage, participant reflections, and researcher observations and notes. As the process evolved, preliminary hunches and data-generated patterns were refined and corroborated,
culminating in the statement of a theory of effective environmental education communication for youth. The literature review provided a context for the research and reinforced findings (Charmaz, 2006).

A grounded theory methodology gave voice to the youth involved in the current study. Although advertisers and educators use video extensively to influence youth (Jernigan, Ostroff, & Ross, 2005; Krisberg, 2006; Shephard, 2003), there has been little research into the use of video to positively influence environmental thinking and behaviour among youth. As discussed in Chapter Two, adult-based persuasion and cultivation theories can be applied to youth and environmentalism (Harmon, 2001; Livingstone & Helsper, 2006). Research shows that the cultivation effect is evident among youth and that older youth do exhibit central and peripheral processing as described in the Elaboration Likelihood Model. ELM has also been applied to pro-environmental PSAs. I felt, however, that rather than studying the processing and effects of mainstream media among youth it was important to hear from participants as to what they felt would influence their peers. Participants were given free rein in their video production, resulting in a variety of styles, techniques, and messages, including one video that did not relate to the environment. This offered a wide-open field in which to begin to seek patterns among data. My role as researcher was to observe the stories and experience of participants in their own voices and to communicate the patterns exhibited.

**Generating theory**

A theory of effective environmental communication for youth was generated through memo-writing, theoretical sampling, and saturation and sorting of coded data (Charmaz, 2006). As videos and transcripts were analyzed, similar codes began to define
broader categories. Networks were identified, based on relations such as “is part of” or “is the cause of” (Muhr, 2004, p. 214), and then further refined with the addition of each new source. Core variables (core categories/families) emerged that were, central, relating to as many other categories and their properties as possible and accounting for a large portion of the variation in a pattern of behavior [exhibited in the videos or texts]... [Core variables had] clear and grabbing implications for formal theory. (Glaser, 2004, p. 11)

I wrote memos using Atlas.ti to explain and develop categories and emerging properties of the data. Some memos reflected on patterns in the data and began theorizing about possible implications. For example, the memo “Peer Talk” discussed common characteristics of all of the videos and postulated one possible answer to the research questions (see Chapter Four). Other memos were comments on a particular technical aspect of the videos, for example the numerous instances of shaky cameras, background noise, and walking and talking while filming.

As categories became better defined and theoretical ideas emerged, I continued to sift through the videos and transcripts, as well as viewing illustrations of other youth videos on-line to validate my proposed categories and their properties. The BC Hydro Green Games site (Science World B.C., 2008) provided many examples. Charmaz (2006) describes this theoretical sampling to “saturate your categories with data and subsequently sort and diagram them to integrate into your emerging theory” (p. 96-97). Glaser and Holton (2004) refer to this as a constant comparative method of developing a grounded theory. Seven key themes emerged repeatedly in transcripts and both the on-line and study videos. These themes form the basis of my theory of effective
environmental education communication for youth and are explained in Chapter Four. A subsequent review of research literature refined the theory.

I have only taken the first steps in the grounded theory process. Theoretical assertions reflect primarily the seven videos that the participants produced. Although there are many youth videos on-line that reinforce my findings, there are others which do not. The *Kicks* teen pregnancy education videos (NHS Leicester City, 2009) and Green Games contributions I consulted both include films produced by youth or for youth. In viewing them, some theoretical categories were reinforced while others were not. Further theoretical sampling as well as collaboration with others in coding and analyzing videos would create a stronger more grounded theory of effective environmental education communication for youth.

*Action*

On Earth Day, April 22, 2009, a compilation of the four, most complete, participant videos, selected and edited by me, was shown at a whole school assembly. Members of the school’s Green Team, none of whom were participants, introduced the videos, facilitated an environmental game show, and updated the school on our environmental achievements and activities in the past year.

Two weeks after the screening, I distributed a semi-structured questionnaire (see Appendix G) to the school population to assess the effectiveness of the videos in stimulating environmental thinking and action among students and staff. Specifically, the questionnaire asked if the students enjoyed the videos, what they learned, which video was their favourite, and if the videos and games affected their attitudes and behavior. I
placed the questionnaire in staff mailboxes and requested that teachers administer them to their classes. Two teachers chose to complete one summative class questionnaire in discussion with their students which were excluded from this study. I did receive 170 completed individual responses. Grade 6 and 7 students each completed more than a third of the questionnaires, whereas less than one sixth were from grade 8s. This group generally has more absences and more academic obligations, which may explain the reduced response rate. Teachers also tend to have too much to do in too little time, and may have chosen not to administer the survey. The questionnaire data is presented in Appendix G and is discussed in Chapter Four.

At the outset of the study, I proposed that participants compile a DVD of student videos and supporting documentation to distribute to Greater Victoria School District Trustees, our Superintendent, our school administrators, as well as to Victoria’s Mayor and city officials. We also discussed submitting the video compilation to local film festivals or posting videos on YouTube. None of these actions occurred due to the limited time available to work on the videos and the unedited state of many of the videos. Communication with authorities and decision-makers is a critical aspect of PV. Several of the participants expressed an interest in continuing the process, to complete and share films, and to affect change in the school and community. I will endeavour to facilitate the process in upcoming academic years.
Validity and Reliability

Golafshani (2003) and Chiovitti and Piran (2003) discuss how trustworthiness can be ensured in grounded theory research by pursuing credibility, auditability and fittingness.

To ensure credibility I followed the following recommendations:

“Let participants guide the inquiry process,” (Chiovitti & Piran, p. 430) by responding freely to questions and encouraging them to develop their ideas fully in videos and reflections. A significant amount of time (a full six weeks of production) allowed participants to develop and clarify their ideas.

Check my theory against the actual data collected in the videos and reflections of all participants. The use of Atlas.ti to link quotes, video clips, and code facilitated this process.

Confirm coding and theory with participants (Sewell, 2004). After the end of the school year I met with a participant and asked her to code the transcript of her own video and review my findings. We also discussed the process and her satisfaction with her film.

“Use participants’ actual words in the theory” (Chiovitti & Piran, p. 431).

Explore and describe my personal bias, context and background, to “ensure that [the] findings of a study [were] shaped by the respondents and not researcher bias, motivation, or interest” (Robert Wood Johnson Foundation, p.1).

One participant in the study reviewed my codebook and completed an analysis of a video. She also highlighted a printed transcript of videos and indicated dominant messages in the text. I completed the same exercise using my Atlas.ti coding and placed
the notes and transcripts side by side. For each semantic unit, I assigned a point for each concurrence of codes. The percentage of agreement between the participant analysis and my own was 86.7%, suggesting that my coding is an accurate assessment of the data and is reproducible (Krippendorff, 2004). Potter and Levine-Donnerstein (1999) recommend that the level of agreement should be calculated into a coefficient to minimize the effects of chance codings. I chose not to calculate a coefficient of agreements as the inter-coder reliability was very high. Reviewing my own coding intermittently verified the stability of my coding over time (Krippendorff, 2004).

Auditability is the “ability of another researcher to follow the methods and conclusions of the original researcher” (Chiovitti & Piran, 2003, p. 432). This was achieved by excluding myself from participant selection, creating and describing the research process as fully and openly as possible, including revealing all raw data, details of my methodology, analyses, findings, and conclusions with my supervisor, colleagues, and, in some cases, with participants (Chiovitti & Piran, 2003). A DVD of participant videos was submitted with this document for review.

Chiovitti and Piran (2003) discuss achieving “fittingness” of a theory by “delineat[ing] the scope of the research in terms of the sample, setting, and the level of the theory generated” (p. 433). To this end, I have described study participants and their background, as well as proposing a substantive theory that requires further investigation. Fittingness is also achieved by “describ[ing] how the literature relates to each category which emerged in the theory” (p. 433). A review of literature relating to youth, media, and changing thinking and behavior, as well as analysis data from seventeen student videographers, allowed me to “triangulate” (Golafshani, 2003, p. 603) my data and theory
with other research in the field that confirmed my findings. My findings were qualified or corroborated through comparison with similar or different studies and data (Robert Wood Johnson Foundation, 2008).

Digital video data is “notoriously messy, slippery, and elusive” (Goldman-Segall, 1998, p. 25). As with all content analysis, the researcher must analyze the *manifest content*, “that which is on surface and easily observable, such as the appearance of a particular word in a written text, the gender of a character in a film, or certain behaviours (blinking eyes, scratching head)” (Potter and Levine-Donnerstein, 1999, p. 2), as well as the *latent content*, the meaning lying under the evident aspects of the data, which may denote patterns or be projections of the coder’s mental state. This process is complicated in video. One can relatively easily code and annotate a text transcript of an audio or video interview as the coder is only examining one mode of communication. Adding the additional layers of facial and body expression, gesture, tone of voice, visual images, chosen setting, and video techniques, both simplifies and adds ambiguity. The process is simplified because context and multiple sources of data allow for triangulation to check meaning. However, having so many things happening simultaneously on film means meaning may be ambiguous (Goldman-Segall). The *thick description* (Geertz, 1973; Goldman-Segall, 1989) involved in the coding process ultimately allowed me to gain a deeper and more valid understanding of the data.

Goldman-Segall (1998) describes how video data is open for reinterpretation from different *points of viewing*, leading to alternate conclusions and theories. Although this may seem to undermine validity and reliability, subjectivity is an inherent part of content analysis (Krippendorff, 2004), and a variety of techniques were used to verify data and
conclusions. These techniques included thoroughly describing research methods, analyzing many videos from different participants, confirming coding and conclusions with participants, and using third parties to undertake test analyses of videos for comparison. Through these processes, I have endeavoured to reduce threats to validity and reliability in this study.
Chapter Four: Study Findings

If we really try to get through to people then I think video will somehow change the world.

(PT, Grade 8 Study Participant, 2009)

Participants in this study produced seven videos which were analyzed to answer the research questions, what content do youth communicate through video to engage their peers in environmentalism, and what visual messaging do youth use to communicate that content to their peers? Additional data was obtained from a questionnaire administered to participants, participant and researcher written reflections, and a survey completed by students who watched a compilation of participant videos at an Earth Day school assembly. The major themes that emerged from the data are below:

Participants are optimistic about the welfare of the planet in spite of their recognition of current environmental crises.

Many environmental problems are caused by humans’ ignorance of ecology or the impact of their actions.

Grassroots individual and community actions will “save the world.”

Effective genres of film are documentaries, interviews with youth, personal appeals to viewers, and public service announcements.

Technical aspects of videos (camera shots, placements, transitions, video quality) are less important than the content for participant videographers.
“Peer talk” is the dominant form of messaging in participant videos. Peer talk is characterized by:

- youth language and diction;
- youth speaking directly to the youth audience;
- youth talking to youth on screen; and
- content that is relevant to youth.

Videos can have a positive impact on environmental attitudes and behaviours, but did not affect the thinking or behaviour of the majority of viewers.

**The Videos**

Over the six weeks of production, from the beginning of February to the middle of March, 2009, individuals and groups of participants produced eight videos, seven of which addressed environmental issues and one addressed homelessness. The videos ranged from approximately one minute to seventeen minutes, averaging 7.4 minutes in length. Four of the videos were produced by individuals, while the others were produced by groups of two to four participants. One group of four participants did not produce a coherent video that could be analyzed. Two groups edited their movies. The Waaalk! group began the process, and only *Environment 101* was edited into a completed movie. A DVD of the seven videos as well as the Earth Day compilation is included with this document. The videos are described (from shortest to longest) below.
Waaalk!

This video, 56 seconds in length, was produced by one grade 7 female (LA), two grade 8 females (HE and PT), and one grade male (DA). It begins as a music video (music: Sesame Street Theme), followed by a short interview with a teacher, and ends with two demonstrations of positive environmental actions. LA acts as the on-screen narrator. The video was partially edited, with “on the street” interviews about transportation not being included in the edited version, due to time constraints and participant absences.

Environment Movie

This video, 3 minutes 9 seconds in length, was produced by a grade 6 male (SR). It is unedited and is a compilation of footage of a parking lot, traffic, a clock, a map of China, one exterior shot, and one interview with a student. Many of the shots are filmed from inside the classroom looking out, and there is a great deal of background noise. Title credits were created but the film was never edited together and the planned narration was never added.

What are you really looking forward to change in this world? [sic]

This video, 3 minutes 47 seconds in length, was produced by two grade six females (FE and GC). It consists of the two participants interviewing each other about their personal environmental actions and what they intend to do in the future. It is filmed entirely with one camera placement on the playground outside the school and sound is partially muffled by wind.
Enviromedia Transpotation [sic]

This video, 4 minute 45 seconds in length, was produced by a grade 6 female (MC). It opens with a shot of a leaf accompanied by participant-composed piano music, followed by footage of cars, a parking lot, traffic and a car wash. The middle section is a mock talk show (although only the interviewer’s questions are included; MC intended to add the answers afterwards). It closes with a shot of full bicycle racks and an appeal by voiceover and title to be part of the solution by cycling.

Environment 101

This video, 8 minutes and 45 seconds in length, was produced by three grade 6 males (CA, FM, and TC). It consists of a guided tour of the interior and exterior of the school, demonstrating positive and negative environmental actions, an interview with a teacher, and a closing personal message from the participants. It is edited and cohesive as a video, including titles, transitions, and a consistent style

You Can’t Change Your Past

This video, 11 minutes, 42 seconds in length, was produced by a grade 6 female (MV). It consists of a voiceover narration and personal appeal for environmental action while the camera focuses on a poster with the words, “you can’t change your past, but you can change your future.” The video also features footage and narration (both voiceover and on-screen) of trees, traffic, and urban buildings, and explanations of positive environmental behaviours such as using less water, turning off lights, walking, biking, and busing, and using environmentally friendly cleaning products.
Nature is Beautiful

This video, 17 minutes and 34 seconds in length, was produced by a grade 6 female (PC). It consists of personal narration by the participant relating to environmental issues, solutions, and appeals for actions. Footage shows parking lots, traffic, fields, garbage, a tap running, birds, interior and exterior shots of the school, and interviews with students and school staff, asking why the environment is important to them. There are several artistic shots and special effects, although the film is often shaky has no logical story line.

Homelessness

One group of three grade 6 males (BE, WO, and HM) and one grade 8 female (RK) worked on a video about homelessness in Victoria, BC. This film was not completed and was not included in the study.

Optimism

Without exception, study participants communicated optimism about the Earth’s future and the videos they were making. This was demonstrated by an overall positive attitude when talking about the environment, an unwavering belief that any action taken by humans will make a difference, and a confidence in the effectiveness of their videos to effect change. The group arrived every week excited and motivated. Fatigue and pessimism sometimes plague environmental activists (Kovan & Dirxx, 2003; Thomashow, 1995), but this was never the case among the participant group. On the contrary, participants repeatedly expressed conviction that the work they were doing was valuable, and despite the unfinished state of many of the videos, they were proud of the
work they had done. In her mid-program personal reflections, MC states, “I feel like I can do something to help a problem that is important to me,” and SR writes, “…the message of the movies might be strong enough to inspire people to care about the environment.” WO asserts, “I think that our movie is trying to address a few problems at the same time and is possibly going to be effective.” In my journal notes, I observed how the Environment 101 participants produced a video that is “very rough, homemade, but it’s also so honest and optimistic - celebrating every little positive action - lights off, recycling, etc.”

Saving the world is very do-able and simple for the study participants. They assume that anything is possible. “Tell me,” GC asks her colleague in her video, “what are you really looking forward to change in this world?” It is a given, rather than a hope, that she will change the world. She replies that she wants to stop our society from “hurting the environment . . . like cutting down trees, getting rid of animals, putting animals in zoos or hunting.” In her video, MV repeats, “you can’t change your past, but you can change your future.” She tells us “a good friend of mine told me that helping the environment, or something like that, it could take a small group of people to change something huge around the world” Confidence that the Earth will continue to thrive and that the videos which participants are making will help is a strong theme throughout the study.

Study participants were not, however, ignorant or naïve about the harm humans are inflicting on the planet. MV asks the viewer in You can’t change the past:

How do you think we feel, knowing that our planet is being destroyed, how do you think we feel? . . . We’re practically destroying our planet, I
mean, it’s not only our planet, of course we have loads of animals sharing
the space, so think about them too. You’re killing their homes or if, if you
cut down trees you’re killing squirrels, birds, insects, and your tree type of
animals, you’re killing their homes. Or let’s say, garbage in the water, a
lot of people are throwing garbage in the streets, and some go down drains
and go in the ocean killing fish, sharks, whales, octopuses, all those
animals. We have, there are animals that are becoming extinct because of
us. We gotta stop it.

She, along with the other participants, communicate the message loudly and
clearly that humans are harming the planet, both consciously and unconsciously. Most of
the videos discussed greenhouse gas emissions, climate change, and global warming. In
Nature is beautiful, PC shows “rows and rows of big cars, small cars, all types of cars
that are causing pollution to our earth” She explains that “nature is here [trees] and right
next door is what is causing it to disappear [cars].” The future is at times described as
desperate. In Environment 101, the narrator (CA) states, “if they have buildings it will
produce greenhouse gases and stuff like that . . . so if we didn’t have any plants, like
these, then we’d probably die, in a matter of time.”

Despite the recognition of the threatened state of the environment, the message is
not overwhelming, as in films like An Inconvenient Truth. The videos present a message
of hope and possibility. FE tells the viewers, “I think that we should stop hurting the
environment . . . We need to treat it with more respect.” They tell viewers what to do, and
let them know that societal change is already under way. Viewers can “be part of the
solution” (MC). Environment 101 finishes with a close-up of the two participant
videographers, smiling, joking, and telling us in the most optimistic way, “we think that being green is great for the environment and so far what we’ve seen, people are starting to change their attitudes.” The participant youth feel hopeful and present an optimistic perspective on the environment in their videos.

_Human ignorance_

Participants’ videos communicate the message that many environmental problems are caused by humans’ ignorance of ecology or impacts of their actions. When asked about what he might include in his film pre-production, FM states “lots of people don’t even know they’re doing stuff wrong, so if there is some way to let them know.” PC sets out to show “how many people care and how many don’t even understand” the effects of their actions.

MV echoes these sentiments in *You can’t change the past*, telling the viewer, “people are . . . making a lot of pollution and they don’t even know it.” She asks “how can people forget that we’re practically destroying our planet? Just wake up in the morning and say, oh, yeah, well, nothing’s going on? But, really, a lot of things are going on that you don’t know about.” She tackles this ignorance with direct teaching and recommendations in her video. She explains to those who are unaware, “I would think you should start turning off your taps when you’re brushing your teeth, or washing dishes. . . Turn it off. It’d be a big help,” and, “there’s really no point [in keeping lights on unnecessarily]. You’re just saving, wasting electricity and it’s not good for the environment at all. So I would suggest turning off the lights when you’re not using them.” *You can’t change the past* and other videos present the idea that humans,
specifically adults, do not realize the negative environmental effects of factory pollution, driving alone or in big SUVs, and leaving on lights and electrical appliances. They speak with incredulity about adults’ behaviours.

In *Environment 101*, the narrators are shocked to see, “most of the big SUVs . . . usually have only one or two people in. Sometimes they even drive to places they can just walk to!” PC views this ignorance with dismay. It makes her sad to think that:

people sit back in their cars or on their sofas watching TV, using all their electricity up, or using their electricity up to, to, for fans, leaving the lights on in your room, but you’re not even in anymore. Leaving your lights on on [sic] a car, keeping stuff on that you are not even using. And that’s what wastes electricity. That’s what makes greenhouse gases, that’s what is killing out environment.

Humans are also unaware of how they are destroying habitats and threatening wildlife. PC explains:

If you cut down trees you’re killing squirrels, birds, insects, and your tree type of animals, you’re killing their homes. Or let’s say, garbage in the water, a lot of people are throwing garbage in the streets, and some go down drains and go in the ocean killing fish, sharks, whales, octopuses, all those animals.

Some participants react with anger or disdain for human’s ignorance and destruction. MV tells the viewer, “That is insane! Why do people even do that? Or just using [cars] for driving, I mean, it’s so unhealthy.” She muses about the solution: “adults don’t exactly listen to other adults when they try to tell them what’s going on around the
world, but will adults listen to kids?” Participants suggest that human ignorance of how to sustain the planet may be addressed by youth teaching their peers and their elders.

**Individual and Community Action**

Every video produced by the participants communicates the message that grassroots individual and community actions will “save the world.” In my journal I noted that there are “lots of [participant] movies about simple tasks that kids can do. No big picture world view changing epics, but recognition of problems and talking about solutions.” Actions are suggested, demonstrated, or shown by participants, those interviewed, and in and around the school community. The actions fall into several categories: transportation, recycling and waste management, energy use, pollution, and development. Participants explain measures individuals and communities are currently pursuing, as well as those to enact in the future.

The format of the videos directly addresses the need for personal or group actions. *Environment 101* explains that the narrators will be “going around the school asking people what they do for the environment: walk or bike or drive to school, or work, and we’re going to check if they save water or lights, like, energy, and electricity and water.” *What are you really looking forward to changing in this world* features the two participants talking about their current and future behaviour, and giving advice to the viewer. GC suggests, “I really think we should use, like, less water, and turn off, turn the taps and things when you don’t need it, and don’t use too much heat to try and use less energy, and also recycle, and please don’t pollute.” *Enviromedia Transpotation [sic]* focuses on one issue, transportation, whereas *You can’t change the past, Environment*
Movie, and Nature is Beautiful address many issues. This was a result of participants’ particular interests and concerns, and the message(s) that they felt were most important to communicate.

Transportation

The most common category of positive action presented is transportation, with 22 references among the video transcripts. The action is represented in video titles, Waaaaalk; Be eco-friendly and Enviromedia Transpotation (sic). Participants interview other students or people on the street about how they get around:

TC: Do you walk, bike, ride a bus or take the car.

Student 1: I walk, or bike.

Student 2: I usually take the bus. (Environment Movie)

Several of the videos show footage of cars and trucks passing the school, with voiceover narration. MV observes, “Car! That person should be maybe biking to wherever she needs to go right now” In Environment 101, the participants comment and count each car that goes by and notes the number of passengers:

FM: OK. Now that we’re here filming cars, as you can see, they aren’t many people in their cars. One or two per one.

CA: Yeah. Sometimes they even drive huge SUVs.

FM: Take a look at this car. Only one person. Pass the video!

CA: See, just watch. See that one right there? One person only. One person only. . .

FM: This is getting a bit disappointing. Why don’t we go look for buses.
Participants suggest greener modes of transportation: buses, walking, and cycling. MV tells viewers, “start walking instead of driving. You can walk, bus, bike, bunches of stuff.” For youth, she highly recommends cycling. “Bikes. Great thing to do. Bike to school. Bike to work. Much more better for the environment, and for yourself - keeping yourself healthy.” The final text on-screen in Enviromedia Transpotation (sic) is “A solution: Ride your bike.” Participants clearly communicate the problems with cars and tell viewers how they personally can take action to help the Earth.

**Waste Reduction**

Recycling and reducing waste is another accessible action presented frequently in the videos. In an interview with a participant, one teacher shares how he reduces waste. “I try to make sure the kids up in the library don’t print too many pages, so we can save some of our trees. I compost everything that I can at home and put that into my garden.”

Another teacher tells the participant interviewer, “I’m religious about recycling, reusing and reducing things that I do use every day.” Students are also asked how to reduce waste. GC says, “Well, I’m starting to recycle and I don’t pollute. My wrappers and snacks I always throw away.” Another student says, “don’t use too much paper, yeah, yeah. Use the other side of the paper before you destroy it,” and a third asks, “See this [juice box]? I’m going to recycle this after.” In Environment 101 the participants show a recycling bin and explain how to use it and the benefits of recycling:

You can put pop cans, plastic bottles, a lot of stuff in there. And most of this stuff, well I think all of it, goes to recycling, and did you know that some of those lanyards that you wear around your neck that hold keys and key chains and stuff? They used to be a pop bottle.
Recycling and reducing waste is repeatedly demonstrated in the videos as an action that is positive and practical for youth.

Energy

A third positive action in the videos is reducing energy use, specifically turning off lights and other electrical appliances. MV observes:

Now loads, and I mean loads of people around the world keep their lights on when they could be turned off, or just keep them on when they are not even being used. There’s really no point. You’re just . . . wasting electricity and it’s not good for the environment at all. So I would suggest turning off the lights when you’re not using them.

CA and FM walk around the school showing which classrooms have lights turned off and turning them off when necessary. “They should be turning off the lights because there is no one in here. . . Why don’t we give them a hand?” They explain that windows are equally effective for light and heat, “because, um, if you just turn up the heater it’ll produce greenhouse gases. . . And right now without the heater on I’m boiling.” They also discuss the benefits of shutting down computers. “If you turn off the whole thing including the monitor and the hard drive thing, um, then it would take all of the energy, um, and store it for next time you use it.” As with other actions, school personnel are interviewed about how they reduce their energy use.

Pollution

Participants tell their peers not to pollute in their videos. In Nature is Beautiful, PC explains why in tangible terms that her peers can understand.
There is litter. Disgusting filth. I mean, the seagull is over there. One of them could think, ooh, I wonder what that is, and eat it and maybe choke on it and die. That has plastics that has, like, chemicals. This one little wrapper is what can kill an animal.

As well as garbage, viewers learn that water is also easily polluted. MV explains what products are harmful to ecosystems.

Take a look at that [dish soap]. It’s apple scented and probably has loads of bad chemicals . . . that go into the ocean down the drain. Another big thing is cleaning products. Those are horrible, going down the toilet, drains, or even when you are washing cars. You have soap that goes down the side of the road to a drain that obviously leads to the ocean. So that’s one way, but you can, when you’re looking, you can get environmentally friendly dish soap, so it won’t be as bad for the environment.

According to the participants’ videos, not polluting is an action that is do-able by youth and helpful for the environment.

Development

The videos went beyond personal actions to larger community values. Several of the films communicated resistance to development. Still, the message was always conveyed is a way to which youth viewers could relate. Most simply and graphically, in Waaalk!, PT has her arms wrapped around a tree with the on-screen subtitle, “Tree huggers are cool : )” CA advocates for natural spaces. “Look at this big field. It’s a good thing people haven’t torn it down and made a bunch of, like, basketball courts and everything.” PC laments that “in a couple of years maybe this [field] could be a parking
lot, or a big business building, anything.” Youth, the participants say in their videos, should act to maintain natural environments.

*Future Actions*

Many of the actions promoted in participants’ videos are tangible and possible for youth right now. Others are suggested for the future. MV talks about new technologies that may be employed. “Maybe in the future they will invent something [a vehicle] where they don’t use gas at all.” SR talks about using solar power. PC suggests learning more before taking action. “Go rent a video about the environment, go to the museum, read a book about it, but try to make a difference in this world.”

MV sums up the message presented in all of the videos that youth need to take action for the environment. “These are all things you can do to make the world a cleaner, greener place.” CA adds the incentive, “Being green is fun!”

*Genres*

The most common genres of videos produced by the participants were documentaries, interviews with youth, public service announcements, and personal appeals to viewers. As most of the films were not completed over the six weeks of the study, each of the videos would likely have been refined and edited to present a more consistent style, however all videos showed aspects of several genres (See Table 1).

The dominant style was documentary, featuring a compilation of long shots, with or without narration, interviews, demonstrations, and explanations of issues. Interviews with peers or fellow participants were common, appearing in four of seven videos. Table 1 presents the video styles used by participants. The genre categories are those discussed
by participants in planning sessions, rehearsed and/or filmed but not included in videos, or those included in the videos at the end of the Enrichment. A “segment” refers to each part of a video that has a coherent style. For example, *Waaalk!* begins as a music video, switches to an interview, continues with two PSA messages, and ends as a music video.

Frequently, video segments took the form of a public service announcement (PSA). In these segments, participants outlined an issue and proposed a solution. For example, in *Nature is Beautiful*, PC shows water running down the drain, explains why this is bad for the environment, and demonstrates a solution, by shutting off the water.

Also very common within the videos was a personal appeal for action, much like on-line or television advertisements in which celebrities advocate for actions. MV asks the viewer, “I mean, what can you do to help [reduce greenhouse gas emissions]? Start walking instead of driving.”
<table>
<thead>
<tr>
<th>Video Title/Genre</th>
<th>Documentary</th>
<th>Drama</th>
<th>Comedy</th>
<th>Talk Show</th>
<th>Music Video</th>
<th>Public Service Announcement</th>
<th>Interview with authority</th>
<th>Interview with Youth</th>
<th>Artistic</th>
<th>Personal Appeal</th>
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<tr>
<td>Waaalk!</td>
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<td>You can’t change the past</td>
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</table>
One genre that was not present among the videos was drama. Despite some pre-production planning among the groups to film a dramatic scene, simulation, or reenactment of a situation, there were no examples of these. I would suggest that these dramatic scenes were not included because participants were not content with either the effectiveness or the quality of the acting to warrant inclusion. During rehearsals and filming sessions, participants often broke out into laughter or did something that was not planned, requiring the scene to be redone. This may have been too frustrating for the group to persevere to capture a polished scene on video.

Participants’ videos were predominantly serious. CA injected some humour into *Environment 101*, including slapstick segments such as jumping out from behind a wall, speaking in German, and cowering from the bright sun. Many of the videos were entertaining, featuring enjoyable and recognizable music like the theme from *Sesame Street* or students fooling around in front of the camera, however the overall tone of most videos was staid.

In summary, participants created documentaries that were focused, serious, and featured interviews, public service announcements, and personal appeals for reflection and action.

**Technical Aspects**

Technical aspects of videos, such as camera shots, camera placements, transitions, sound and video quality, were less important to participants than their video content. Although they voiced interest in producing professional looking films, through lack of skill, lack of equipment, lack of concern, or lack of time, most of the videos were
unedited and very rough in their presentation (See Table 2). In contrast, messages were
clearly communicated. The distinction between the intention and the ability to create
professionally looking films will be discussed in Chapter Five.

Tables 2 and 3 summarize production and postproduction technical aspects
evident in participant videos. For the following tables, each segment or unit, that is each
technically distinct section of the video, is counted separately. Some segments have
several technical qualities assigned to them. For example, one part of *Environment 101*
was identified as being an “interior shot,” “walking while filming,” and also a “searching
camera.”

Table 2. Camera Shots and Movements

<table>
<thead>
<tr>
<th>Camera Shot or Movement</th>
<th>Number of Segments Employing the Shot/Technique</th>
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<tbody>
<tr>
<td>Interior Shot</td>
<td>30</td>
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<tr>
<td>Exterior Shot</td>
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<tr>
<td>Exterior Shot filmed from Indoors</td>
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<tr>
<td>Close-ups</td>
<td>13</td>
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<tr>
<td>Medium Shots</td>
<td>27</td>
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<tr>
<td>Long Shots</td>
<td>25</td>
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<tr>
<td>Zoom In</td>
<td>12</td>
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<tr>
<td>Zoom Out</td>
<td>8</td>
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<tr>
<td>Random Zooming</td>
<td>12</td>
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</tbody>
</table>
Part of the video planning process was storyboarding, the process of sketching out the different camera shots, angles, effects, and content before filming. Though students were guided through this process, when it came down to filming, participants did not always have a storyboard or follow the one they had produced. This resulted in some random camera movement—panning left to right and tilting up and down, frantic or slow searching with the camera for content, and zooming in and out unnecessarily. There are relatively equal numbers of interior and exterior shots, a few close-ups, and more medium and long shots (See Table 2). It was apparent that, in general, participants did not intentionally use camera shots for specific purpose or consciously try to use an angle or shot for a specific semantic purpose. Participants’ inexperience and seemingly spontaneous methodology meant that they did not employ cinematographic techniques as effectively as they might have, resulting in messages being communicated less effectively.

Common characteristics of many of the videos were a shaky camera and seemingly random zooming, panning and searching. This was due partly to the lack of tripods. At one point, the participants only had use of one tripod among the three groups filming, resulting in a lot of shaky shots. This was a criticism of the videos picked up by participants, members of the audience at the Earth Day assembly, as well as in casual discussions with students and staff after the assembly. The shaking was not intentional, but it was an aspect of many of the videos that was observed and commented on. One viewer wrote, “next time you should use a tripod.”
Walking while filming was used a total of ten times in *Environment* 101 and *Nature is Beautiful*. This allowed participants to explore the school and fields, and give viewers the feeling of being there in the film, although it also caused some unsteadiness with the camera.

All of the videos included some filming from a static point of view with the camera mounted on a tripod. This allowed participants to work alone or have the entire group in the shot.

Participants showed little concern for the background noise and other distractions included in their videos. The video footage frequently contained unintentional sounds from other students, crowds, traffic (unavoidable with the school located between two major downtown streets), and wind. There was little attempt to minimize or exclude these background noises. A few students chose to film traffic and include the sounds of cars and trucks as juxtaposition to the nature on the school grounds. PC says, “nature is here [indicating trees] and right next door is what is causing it to disappear [cars].”

Although the participant videos demonstrate a range of techniques and camera shots, there is no dominant style of videography present in their films. For a majority of the study’s groups in the film production process, the visual and audio content is more important to participants than the technical aspects of the videos.
Table 3. Technical Aspects of Participants’ Videos

<table>
<thead>
<tr>
<th>Video Title/Genre</th>
<th>Visual Artistic Elements</th>
<th>Music</th>
<th>Special Effects</th>
<th>Voiceover</th>
<th>Titles and Credits</th>
<th>Still Camera</th>
<th>Walking while filming</th>
<th>Controlled Camera Pan</th>
<th>Shaky Camera</th>
<th>Searching Camera/Frantic Movement</th>
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</thead>
<tbody>
<tr>
<td>Waaalk!</td>
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<td>15</td>
<td>7</td>
<td>4</td>
<td>7</td>
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<tr>
<td>Total</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>28</td>
<td>5</td>
<td>23</td>
<td>10</td>
<td>18</td>
<td>31</td>
<td>21</td>
</tr>
</tbody>
</table>
Although the participant videos demonstrate a range of techniques and camera shots, there is no dominant style of videography present in their films. For a majority of the study’s groups in the film production process, the visual and audio content is more important to participants than the technical aspects of the videos.

*Peer Talk*

*Peer talk* is the dominant form of messaging in the participants’ videos. My definition of *peer talk* is characterized by four qualities:

(a) youth language and diction;

(b) youth talking to youth viewers;

(c) youth talking to youth on screen; and

(d) content that is relevant to youth.

Peer talk can mean using the language and expressions used by the peer group, without concern for using formal or proper diction. While interviewing a teacher, one student participant, LA, confirms an answer, "Cool, right." When FE is interviewing a fellow participant, she says, "All right, fine, sorry. Jeez! So, um, . . ." This is no formal scripted film. This is youth talking to youth. In rehearsals for their videos, some participants did alter their voices and accents to play a role, but ultimately these artificial ways of speaking did not appear in any of the films. It was not apparent that participants consciously and actively considered and dismissed other styles of discourse.

The second aspect of peer talk is participants speaking directly to their peers. They demonstrate, tell, and request of their fellow students to be more environmentally
aware and active. MV frequently speaks directly to her peer group. "What does that mean to you? I mean, what can you do to help that? . . . You can walk, bus, bike, bunches of stuff." She and others let youth viewers know they are actively involved in solving environmental crises. "You can't change your past, but you can change your future." By addressing her peers, MV is drawing them into action.

A third aspect of peer talk is talking to fellow students, either showing the filmmaker and subject, or just the subject. "Tell me, F," says GC, "what are you really looking forward to change in the world?" CA tells his partner asks, "Well, F, we are right now doing something that we like to call "Environment 101."

Finally, peer talk means talking to peers about actions and attitudes that are within the realm of understanding and possibility among youth. Participants do not tell their peers to stop extracting oil from tar sands projects or to transform the economic system. Many youth have no idea what those are, do not have much purchasing power, and would not know how to affect major social change. Participants do, however, advocate walking or riding a bike, turning off lights, turning off water, and recycling.

These are all examples of peer talk being engaged as a method to encourage fellow students to take environmental action.

Effectiveness of Videos

Participants’ videos can have a positive impact on environmental attitudes and behaviours, but did not affect the thinking or behaviour of the majority of viewers. The majority of the student population at Central Middle School self-identifies itself as being environmentally engaged, with 73.2% stating they make an effort to be green and 71.8%
stating that they are concerned about environmental issues (See Tables 4 and 5).

Proportionally, Grade 6 and 7 students indicated more environmentally positive thinking and behaviour than Grade 8s. Questionnaire responses indicate that there was a marginal change in the thinking and behaviour of student respondents from watching the videos at the Earth Day Assembly. The reasons for the change or maintenance of thinking and behaviour are discussed in Chapter Five.

Table 4. Student Effort to be Green

<table>
<thead>
<tr>
<th>I usually make an effort to be green</th>
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</thead>
<tbody>
<tr>
<td>Number of Students</td>
</tr>
<tr>
<td>Strongly Agree</td>
</tr>
<tr>
<td>8 French</td>
</tr>
</tbody>
</table>

From the outset of the research, participants believed that their videos would be effective in engaging their peers in environmental thinking and actions. LA wrote in her reflections (see Appendix F) that “people will see [her video] and it will make them think about their actions and maybe change them.” It was assumed that LA’s video would have an effect. Whether it did or not was moot at the time of writing, as LA had not yet begun to plan her video. MC echoes these sentiments, stating that her video “can get people to think about these issues and do something.” Participants felt that a video “can make people feel bad and do [something positive for the environment]” or that even though
“adults don’t pay much attention to videos that grown-ups make, they might listen to kids.” The early participant reflections touch on the theme of ignorance that is evident in the participants’ videos. BE notes that the videos will be effective if they “show [viewers] right from wrong.”

Table 5. Student Concern with Environmental Issues

On Earth Day 2009, Central’s Green Team showed a compilation of four of the videos: *Waaalk!, Environment 101, You Can’t Change the Past*, and *Nature is Beautiful*. Two weeks later, 170 of the 450 students at the middle school completed a questionnaire about the assembly and the videos (see Appendix G).
Table 6. Enjoyment of Videos at Earth Day Assembly

More students were positive about the assembly and videos than were negative about them. 38.2% answered that they enjoyed the Earth Day Assembly, and 26.6% stated they liked the videos (See Table 6). Grade 6 and 7 students were more positive about the videos than grade 8s, who are often more resistant to school-wide assemblies and activities. The greatest proportion of students were neutral, which may indicate either that the respondents had no opinion of the videos, did not see or remember them, or were not engaged in the videos. Why they may have been engaged, or not, will be discussed in Chapter Five.

The favourite video, preferred by over one third of respondents, was *Waaalk!* Almost a quarter of students each, 28.8%, named *You Can’t Change the Past* or *Nature is Beautiful*, as their favourite video. Only 16.1%, predominantly Grade 6 students, chose *Environment 101* as their preferred video. (See Table 7).
Table 7. Favourite videos presented at Earth Day Assembly

Table 8. Effect of Videos on Students

A significant percentage of students, 19.5%, responded that they agree or strongly agree that the videos changed their thinking and/or actions. Almost half, 43.3% felt the
videos had a neutral effect on attitude and behaviour, and 37.1% disagreed or strongly disagreed that the videos changed their thinking and/or behaviour (See Table 8).

In retrospect, it is evident that the question was ambiguous. The meaning of a neutral response (the respondent is neutral to the statement that the videos changed his/her thinking and behaviour) is not clear. Does a neutral response mean that the videos did not change a respondent’s thinking and behaviour? If so, the videos were not effective for almost 80% of the student population. Further investigation of the population who were changed and their previous and current attitudes and actions is necessary, as well as an inquiry into why the videos were not effective. Is it because over 70% of the population surveyed already had pro-environmental attitudes and behaviours, or because the videos did not inspire change among population who do not self-identify as being pro-environmental? This question is discussed further in Chapter Five.

Students had a range of responses as to what stood out about the videos. Many students enjoyed the videos or engaged in them because their peers produced the movies right at Central. Comments include:

- They were interesting and cool because they were made by students.
- It was cool kids our age did them.
- My friend made it.
- The students filmed inside Central so they were personalized.
Respondents noted that the videos had a good balance of humour, information, and seriousness. They presented many points of view. Comments include:

- It was funny yet interesting.
- For interviews, I liked the ideas and what the people said.
- How serious and true it was.
- They were fun and cool.
- It was funny.
- It was inspiring.
- That they were all about making the environment a more important concern in the world.
- It (Environment 101) showed more things you could do instead of just interviewing people.
- They strongly spreaded [sic] the message that we need to be greener to everyone.
- I liked how they were up front on what they supported and it’s true.

Participants’ openness, honesty, and humour were effective in engaging their peers.

Comments were not all positive. Several students wrote on the questionnaire that they did not like any of the videos. Some did not remember them two weeks after the screening. A number of students, predominantly in the older grades, commented on the poor sound or video quality.

- I could see their efforts but some parts were too simple.
- I liked how they were up front on what they supported and it’s true.
- I can’t remember the videos.
• You couldn’t hear a thing they said in the videos, and next time you should use a tripod.
• That they were incredibly hard to hear the people talking, thus making it hard to understand what was happening. You could not see the image very well. It was dark.
• I didn’t [like the videos].
• I don’t remember it.

Overall, the videos were well received, engaged the many of the participants’ peer group, and had a positive effect on the pro-environment thinking and behaviour of a significant portion of the school population. The participants began the Enrichment optimistic that their videos would be effective in engaging their peers in environmentalism and data from student questionnaires demonstrate that the videos did have a positive effect on many students.

Summary of Findings

This study set out to explore the message and messaging communicated through videos that youth believe will engage their peers in environmental thinking and behaviour. Through the process of creating and analyzing seven short films, themes of content and technique emerged. The message of the youth videos is that youth can make a difference to the welfare of the planet, that they have reason to be optimistic, that environmental problems are predominantly the result of human ignorance of the effects of their actions, and that positive local actions such as biking, recycling, limiting development, and reducing waste and pollution will save the planet. Effective messaging
is conveyed through *peer talk*, that is using youth language and diction, youth talking to youth, both in the audience and onscreen, and presenting content that is relevant to youth. Technical aspects of the videos, such as audio and image quality and special effects, appear to be less important to the most of the participant videographers than the content. It was also discovered through a school-wide questionnaire that the videos had a limited degree of success in affecting a change in attitude and behaviour among students who watched the videos. Still, as one student observed on their questionnaire, “we knew the people [who made the videos] and so could relate to what they were talking about.”
Chapter Five: Discussion and Conclusions

_Their videos showed “the way things are,” and did so with a simple truthfulness._

_(Goodman, 2003, p. 47)_

This final chapter presents a summary and discussion of the research project. Responses to the research questions are presented based on study findings and the literature. A grounded theory of effective environmental education for youth through video is proposed and recommendations for environmental education media for youth and future research are suggested. The chapter concludes with personal reflections on the research as an ongoing journey.

Summary of the Study

This study investigated strategies identified in youth-produced videos to develop ecological literacy among their peers. Following a Participatory Video methodology, seventeen middle school student participants, aged 11 to 14, created seven videos, a compilation of which were shown at a school assembly. A questionnaire of attitudes and responses to the assembly was administered. A content analysis of participant reflections, surveys, and videos suggested the following answers the research questions, what content and what visual messaging do youth communicate through video to engage their peers in environmentalism?
1. Participants are optimistic about the welfare of the planet in spite of their recognition of current environmental crises.

2. Many environmental problems are caused by humans’ ignorance of ecology or the impact of their actions.

3. Grassroots individual and community actions will “save the world.”

4. Effective genres of film are documentaries, interviews with youth, personal appeals to viewers, and public service announcements.

5. Technical aspects of videos are less important than the content for participant videographers.

6. “Peer talk” is the dominant form of messaging in participant videos.

Further, the viewer questionnaire revealed that the self-identified level of environmental thinking and behaviour was high at the study school (over 70% of respondents), and that participants’ videos had a positive impact on environmental attitudes and behaviours among 19.5% of the respondents, but did not affect the thinking or behaviour of the majority of viewers, as evidenced by their questionnaire responses.

A survey of the literature relating to environmental education, fostering environmentalism, public persuasion, and video as a medium for social change provided context for the study and reinforced some of the findings. The literature review revealed that environmental education, persuasive messages, and media for youth can be most effective in affecting attitudes, behaviour, and social change, and create greater likelihood of elaboration if the following suggestions are used:
1. Representatives of a target audience participate actively in planning, producing, and presenting of message dissemination, in their common form of discourse (higher elaboration likelihood, peer learning).

2. Messages communicate about local, community, and familiar places and people, in order to stimulate personal connection, identity, security, agency, and sense of place (higher elaboration likelihood, sense of place).

3. Messages and media are accessible and use new information and communication technologies (higher elaboration likelihood).

4. Messages are communicated repeatedly or over longer term (cultivation effect).

5. Messages do not create hopelessness or apathy (ecophobia), but may be shocking or humorous.

6. Media is recognized as one factor that affects behaviour, in interaction with personal and environmental influences (Cultivation and Social Cognitive Theories)

**Discussion**

My research has led to several conclusions and many questions about youth and environmental media.
Youth and Media

One of the greatest surprises of the current study is that there is a dearth of research that relates environmental communication and youth-produced media. There are many studies that investigate engaging youth in the environmentalism or how media influences youth and children. Perhaps because it is only within the past five years that YouTube has become a major influence (Nielsen Company, 2009a) the social and cultural ramifications of on-line video have not been thoroughly explored. Video production and editing technology have also only relatively recently become accessible to the majority of North American youth. Most cellular telephones and digital cameras now have the capacity to capture video, and all new computers include editing software such as Windows MovieMaker or iMovie. Digital video is a growing medium and five minutes spent viewing YouTube segments will confirm that youth have adopted this medium as a mode of public discourse.

I was also surprised and impressed with the videos produced by the participants. Seven of the eight groups knew from the outset of the project what their videos would look like and how they planned to communicate their message. The students had no hesitation to take up a camera and begin filming. It is a part of how they communicate.

Video Content

Seven of the eight groups produced videos about environmental issues, which I did not expect. The participants were free to create films on any local or global issue that they felt was important. Their questionnaires from the first day of the Enrichment program listed environmental issues, violence and crime, poverty, war, homelessness, and national security as issues of concerns. Interestingly, every participant listed an
environmental issue as being important to them as well. This focus could be the result of my personal influence. As I am recognized as the “environmentalist teacher” at the school, participants may have felt their video should reflect my values as the coordinator of the program, although I repeatedly made it clear that the subject was entirely up to participants. The environmental focus may have resulted from the barrage of messages in the media and around the school about environmental issues. Harmon (2001) noted a cultivation effect of environmental concern, which may have affected this “plugged-in” group of youth. The B.C. middle school science and social studies curricula place emphasis on environmental issues. Every Monday in our school, the Green Team makes an announcement. Sierra Club B.C. delivers environmental programs to many classes. The environmental message is part of the participants’ cultural milieu.

At one point, several of the groups considered creating videos about homelessness, an issue that is very pertinent in Victoria. It is likely that participants pass homeless people in the streets on their way to and from our downtown school. Perhaps only one group addressed this problem because it was more difficult for an adolescent to take tangible action to resolve it. A teenager can act to mitigate climate change by taking a bus or walking, but what can s/he do to reduce homelessness? EF and CG changed their video plan and subject three times before interviewing each other about how they will save the environment. They may have seen their earlier attempts to change the world by making a video about homelessness as having less of an effect on their peers or the homeless than a video about the environment. It may also be that they were not as familiar with the issue or strategies to help.
In his *Video Critical* study, Gauntlett (1998) had younger children (aged 7 to 11) create environmental videos. As in the current study, Gauntlett’s participants:

- demonstrated a reasonably high level of concern about environmental issues, particularly pollution and the need for green, open spaces . . . the children were very adept at producing slogans of the ‘save the planet – it’s up to you’ variety, as well as some more heartfelt pleas – such as ‘why are they doing this to our world?’ (p. 7).

As with the messages in participants’ videos, in the *Video Critical* study environmental problems are ascribed to adult ignorance and the suggested activities to address environmental crises are “small-scale, and so readily appear cosmetic and meaningless when the problems are put in a global context. Major environmental revolution, at the same time, is so profoundly unlikely that it is not even discussed” (Gauntlett, 1998, p.8).

The massive paradigm shift, suggested by Chawla and Flanders Cushing (2007), that requires political agency and action, is not proposed by either Gauntlett’s work or the current participants videos. Gauntlett (1998), Oskamp (2002) and Sobel (1996) believe young people’s inability to act is a result of the overwhelming nature of many environmental problems, such as climate change, pollution, and loss of wilderness, and because the “media gives children a powerful potential role as planetary saviours on the one hand, . . . whilst children are still disenfranchised in much of the rest of social life and even, it could be said, within that patronizing discourse itself” (Gauntlett, 1998, p. 8).

The current study participants talked about recycling, turning off lights, and biking to school because those are the actions they feel are achievable by their peers and
themselves, and that in doing so they may build agency to tackle more formidable challenges later in life. This strategy may be ultimately effective in changing the dominant environmentally-destructive paradigm. To change a paradigm, Meadows (1999) advises to:

> keep pointing at the anomalies and failures of the old paradigm, keep speaking louder and with assurance from the new one, insert people with the new paradigm in places of public visibility and power. Don’t waste time with reactionaries; rather [you] work with the active change agents and with the vast middle ground of people who are open-minded. (p. 18)

Consciously or not, this is what the study participants have done in their videos.

*Improving Elaboration Likelihood*

One can apply the Elaboration Likelihood Model (Cacioppo & Petty, 1984) to the current study. I would argue that certain videos were enjoyed and there was a change in thinking and/or behaviour among those viewers who had a higher likelihood of elaboration. I suggest that those who did not enjoy or learn from the videos only processed these films peripherally. Over one third of respondents stated that their preferred video was *Waaalk!* There were many aspects that made this video stand out. The music, *Sesame Street*, was immediately recognizable to all viewers and may have created an instant emotional response. The film presented familiar faces and settings. It was humorous as well as informative. It was produced by and featured grade 7s and 8s, along with a very popular teacher. These individuals are recognized leaders in the school community and therefore more likely to affect public opinion (Rogers, 2003). The video
presented actions that were accessible and achievable for all viewers: walking, running, hugging trees, and recycling.

Other participants’ videos demonstrated some of the same qualities: familiar people and places, humour, music, social leaders, and realistic tangible actions. *You Can’t Change the Past* also featured a very calm and comforting voice-over and recognizable settings, which may have increased viewers’ sense of security and thus learning (Smith-Sebasto & Walker, 2005). The ELM would suggest that, for many viewers, these videos were processed centrally (high elaboration likelihood) and thus were enjoyed and were effective in communicating the participants’ messages. Questionnaire comments, such as “we knew the people and so could relate to what they were talking about,” reinforce this conclusion (See Appendix G).

Questionnaire results also suggest that younger students (grade 6s and 7s) engaged more with the videos than older students (grade 8s). Further inquiry into past personal experiences, classroom activities, and responses to the videos among the different grade levels and English and French Immersion respondents is necessary to explain variations in responses among these groups.

The videos did not engage all of the viewers at the Earth Day assembly. The ELM would suggest that students who had a lower likelihood of elaboration processed the content peripherally, with less impact on personal thinking and behaviour. The visual cues did not resonate with these viewers, however Igartua, Cheng, and Lopes (2003) note that videos can be effective regardless of which processing pathway, central or peripheral, is stimulated. Their study noted that two videos that promoted safe sex were effective in communicating their message even though they had different video formats.
and viewer involvement in the issue presented. If I had asked non-engaged viewers about the videos, perhaps they may have still been able to identify the messages in spite of poor film quality, sound, recognition of study participants, or their interest in the videos.

It must also be noted that Te’eni-Harari, Lampert, and Lehman-Wilzig (2007) conclude that the ELM does not apply to youth as they found that children’s attitudes did not vary with higher or lower involvement with the message subject and, along with Livingstone and Helsper (2006), claim that the effectiveness of persuasive messages is not linked to age, but rather to a child’s media literacy and the style of the message. Further research is necessary to confirm or deny these hypotheses in relation to the current study.

Video Production

There may be a discrepancy between the study participants’ intentions and their ability to create professionally looking films. One can speculate if the unpolished and abrupt aspects of the videos, such as poor sound quality, shaky camera shots, and seemingly random zooming in and out, would be edited out or re-filmed in a final version of the participants’ videos. In pre-production Participatory Video activities, videos were screened and critiqued in every session. Participants learned about using a tripod, moving the camera slowly, different camera angles, and close-up, medium, and long shots. From their practice, however, it appears that camera movement was not a critical consideration for many participants. It was noted and discussed in viewer comments, such as “they were incredibly hard to hear the people talking [sic], thus making it hard to understand what was happening. You could not see the image very well.” If there was more time for filming, reviewing and editing, one can speculate that the clips with poor sound and
image quality would be re-filmed away from the extraneous noises. It is noteworthy that there was never any request, despite the option being presented and always available, to go to another site close by (a park, the grounds of Government House) to film in a relatively quieter location.

The lack of concern for these technical aspects of the videos may be a result of the popularity of rough YouTube and cell-phone videos, and the popularity of feature films like The Blair Witch Project (Eick & Foxe, 1999), in which the quality of the video footage is either secondary to the content, or is intentionally poor. A recent video by the NHS Leicester City (2009) to educate youth on the risks of teen pregnancy intentionally resembles a rough homemade film, rather than a slick PSA. "The grainy footage appears to be a cell-phone video of a schoolyard fight" (Nelson, 2009, p. A14). NHS Leicester City intentionally created a poor quality video to engage youth, and has received over a million hits on YouTube. The current study participants likely produced videos of technically inferior quality unintentionally, but with the same effects. Given more equipment and technical assistance, participants’ videos would probably have been different. All of the groups would have benefited from more time for planning, scripting, storyboarding, filming, viewing and receiving feedback, editing, redoing shots if necessary, and having continuous access to cameras, tripods, computers, and data cables. If this was the case the study findings would undoubtedly change.

In a post-program interview with a participant, MV stated that if she had more time, she would edit her video to create a more focused and fluid film. As it was, however, she was content with the video and felt it conveyed her intended messages and would be effective in engaging her peers. It is interesting to note that Igartua, Cheng, and
Lopes (2003) found in their study that “the [video] format of less quality is the one that stimulated a greater number of positive cognitive responses” (p. 524). Poor technical quality, it seems, cannot always discount the effectiveness of a video.

It is unclear whether or not participation in the research project had any effects on the behaviour or attitudes of participants. This question was considered as a goal for the study, but I felt it was less relevant than the messaging of youth videos in stimulating wider change in thinking and behaviour among peers. The participant group demonstrated a high level of concern for the environment in discussions, pre-production activities, and in their videos. I did not measure potential transformation among participants, although this may be possible by administering an assessment tool such as the New Ecological Paradigm Scale (Manoli, Johnson, & Dunlap, 2007).

**Methodology**

In this study I followed a Participatory Video process, as described by Lunch and Lunch (2006) and Goodman (2003). The first weeks of video training and pre-production mirrored the suggested PV procedure. The PV process accurately captured participants’ perspectives. I feel that the videos authentically represented the messages they wished to convey. While the presentation was not of professional quality, most participants felt that their videos would still be effective in engaging their peers. It has also been suggested that in producing videos, participant media literacy has increased (Goodman, 2003). They will understand better how media is crafted to communicate a message and may be more critical of the media they consume.

The power of PV is in changing how a community functions, and to do that the public and those in power have to interact with the media. Participants were proud to
show their videos at the Earth Day Assembly. The messages were well received and began a dialogue among students and staff at the school. It is too early to assess the long-term effects of the videos. Several of the younger study participants and I have expressed interest in following the PV process to its conclusion by sharing videos with Greater Victoria School District and City of Victoria administrators and personnel, as well as submitting the video compilation to local film festivals or posting videos to YouTube.

Providing more time to complete videos may overcome participants’ reticence to distribute their films beyond the school or and their perception that the videos were unfinished for that purpose.

I was pleased with the content analysis component of the current study. I felt like I had adequate data in the videos, transcripts, journal entries, and participant reflections and questionnaires. Atlas.ti software was very effective and efficient in coding and organizing the data, and facilitated revealing my findings. I feel that my coding was accurate and authentically represented the content and messaging of the videos. The study could be improved by continuing the coding process with youth-produced videos from other sources, such as the B.C. Green Games and QuantumShift.tv to validate my findings with the participant videos.

Although I propose a grounded theory below, the process of developing and refining theory is ongoing. I base my theory on the seven environmental videos that my participants produced and the literature review of related research. I feel grounded theory was an appropriate method as it allowed conclusions to emerge from the participant videos. At the outset of the study I had no preconceived notions or hypotheses as to what I might find. As students developed their films, patterns became apparent, some of which
I had not previously considered. Coding of videos, reflections, and my notes led to saturation of categories. My conclusions were then refined through the review of current research. Further theoretical sampling, collaboration with others in coding and analyzing a range of youth-produced videos, and confirmation by other researchers would create a stronger more grounded theory of effective environmental education communication for youth.

*A Grounded Theory of Effective Environmental Education for Youth through Video*

There are commonalities between the current study and recent related research. Although more research is necessary, I propose a theory of effective environmental education for youth through video that is grounded in my analysis and the literature:

Effective environmental education for youth through video:

a) communicates using the discourse and media employed by the target population;

b) actively involves youth in the production of the videos;

c) focuses on possible actions and positive outcomes in the local community and around the world.

To engage youth, it is essential to communicate using their voice, their pattern of speech, vocabulary and diction. The message must be communicated through the media they are connected to, be that an iPod, YouTube, Facebook, or the next wave of communication technology.

Youth engage in media when they are involved in the production. To increase their likelihood of elaboration, youth need to see and hear their peers and others to whom
they can relate. When youth plan, create, and present media, the messages are authentic, meaningful, and influential.

Youth need hope. They live for opportunity. To engage youth, media must focus on actions that are within the youths’ realm of possibility, both locally and globally. Each success will lead to a greater sense of agency. Present the negative, and youth may drown in distress and apathy.

**Recommendations for Application**

The proposed theory of Effective Environmental Education for Youth through Video can be applied to media messages communicated by governments, environmental groups and other non-governmental organizations, corporations, and by youth groups. Not only may applying these principles be effective in changing attitudes and behaviours, applying the proposed theory may be more cost effective and begin an authentic dialogue among youth and other stakeholder in environmental issues.

The current study may also be applied to other issues that affect youth. The principles can be applied to education, health promotion, career development, as well as the antithesis of the research goals, marketing commercial products. If media messages with these goals reflect the proposed theory, they are more likely to be effective.

My grounded theory was developed based on a study of youth video, however the principles may be effectively transferred to the development of websites, television programming, radio, print media, and educational resources across the curriculum.
**Recommendations for Future Research**

The current study has investigated the interface of environmental education, persuasion, and media studies. It confirms research and theories in environmental education, cultivation, the Elaboration Likelihood model, and Participatory Video.

Further research is necessary to confirm and corroborate the proposed theory of Effective Environmental Education for Youth through Video. Research could explore if other populations develop environmental videos with similar characteristics and patterns. Studies might investigate if different age, gender, and cultural groups produce comparable videos, and propose modifications to the theory based on their findings.

Further studies should explore the effects of allowing more time and resources to produce environmental videos, including providing expertise. In the current study, participants had limited time, 82 minutes per week over nine weeks. Participants began working on their videos in week four. There was never enough equipment for all groups or time at the end of each block to screen the day’s footage as a class community as recommended in PV literature. All participants would have benefited from more feedback from the group. Results would have more accurately reflected a collective sense of what is effective to inspire environmentalism among the participants’ peers. In retrospect, the time frame for video production was not realistic. Future studies could create videos over two Enrichment terms (19 weeks), running a week-long full time program over a school break to provide adequate time for participants to realize their message more effectively, or creating videos in other milieus. These recommendations apply to further research as well as to educators wishing to undertake similar environmental media projects.
Future research may investigate the reception of videos by viewers and their effects. In the current study the sound and image quality of the videos in the Earth Day assembly were inferior. The acoustics of school gymnasium where films were screened are notoriously poor and the quality of the videos themselves was not ideal. In future research, it would be advantageous to show videos in a venue that would have less distortion and provide a better environment for viewing and listening.

Perhaps the most pressing research is evaluating the application of the above theory to environmental media for youth. Studies can investigate if videos produced by applying the theory principles are effective in the changing attitudes and behaviours of youth who view the films, as well as those who produce them. Studies can investigate who is affected by the current participants’ videos, as well as other environmental films. Research can explore why some populations may be engaged by videos created using the theory while others are not likely to elaborate. Further, the effectiveness of non-environmental videos designed using the principles of the theory need to be studied.

*Personal Reflections*

I began this Master’s program and this research project wanting to facilitate a youth-driven film that would change the world. I still want that, but now I see that it is a longer process. It is about education. It is about identifying the themes, messages, and production techniques that resonate with youth and with society in general. Perhaps this is the beginning of a longer journey. Perhaps I could facilitate the creation of the film, now that I have a better sense of the message and how to communicate. And why is it
necessary? Because I am a parent. I am an educator. I am an environmentalist. It is what I am obliged to do for my children, for my students, for my community, and for my planet.

I do get discouraged. My daughter went to a birthday party at a local movie multiplex. The waste created by that group of half a dozen ten year olds in an hour was more than what we produce in my home in a month. I saw mindless consumption all around me. I saw a parking lot full of gas-guzzling cars and trucks. It is far too easy to feel hopeless, to fall into ecophobia (Sobel, 1996). But what good does that do? I feel obliged, inspired to do something. And I did!

I began planning to create the youth version of An Inconvenient Truth (Bender & Burns, 2006). Al Gore’s film did inspire a paradigm shift among Americans and around the world. Climate change is no longer a fringe concept, but an issue about which every level of government and every corporation has to take action. And they are. Detroit automakers are working on new lines of hybrid, hydrogen, and electric vehicles (Jones, 2009). Canada and the US are developing cap and trade policies for CO2 emissions (Cowan, 2009). Schools are starting anti-idling campaigns (Pass for Action, 2008). Change is in the air, and much of it led by adults.

Now it is time to change the way youth are thinking, to shift their consumerist attitudes to a more sustainable paradigm, to one that sees the entire planet, all life and ecosystems as connected. Will the videos produced by my study participants have this effect? No, they likely will not inspire the paradigm shift from a consumerist culture to one that sees itself as an integral and integrated part in ecological systems, with the sustainability of the systems being the driving force for behaviour. My findings suggest that the participants’ films did have a positive effect environmental attitudes and
behaviour among some youth. Key elements of their videos have been identified that may engage other youth in environmentalism. It is a start. Now it is time to begin work on the sequel. Lights, camera, environmental action.
References


Nielsen Company (2009a, April 22). Online engagement deepens as social media and video sites reshape the internet. Retrieved July 5, 2009 from http://www.nielsenmedia.com/nc/portal/site/Public/menuitem.55dc65b4a7d5adff3f65936147a062a0/?vgnextoid=ad40823635a31210VgnVCM100000ac0a260aRCRD


the International Communication Association. Retrieved July 2, 2009 from
http://www.allacademic.com/meta/p12543_index.html


Cambridge, MA: MIT Press.

http://www.quantumshift.tv/about.php

Raynolds, N.B. (2006). Catalyzing change: Focus group on education that enables youth
to create ecojustice (Master’s thesis, Royal Roads University, 2006). Ottawa:
Library and Archives Canada.

of action research* (pp. 1-14). London: Sage Publications.


Press.


*Global environmental change. 18*(3), 397-411.


Appendix A:

Enrichment Description

VIDEOS TO CHANGE THE WORLD

In this enrichment, you will create movies to change how people think and how they act. Discuss what issues are important and what messages will motivate others to change. Learn how to use a camera, filming techniques, and editing.
Appendix B:
Invitation to Participate and Letter of Consent

INVITATION TO PARTICIPATE AND RESEARCH CONSENT FORM:
Lights, Camera, Environmental Action

Principal Investigator: M. Alan Barwin
Supervisor: Dr. Rick Kool,
Address: Central Middle School, Victoria
Address: Royal Roads University,
Telephone: 250.386.3591
Victoria BC
Email: abarwin@sd61.bc.ca
Telephone: 250.391.2523
Email: rick.kool@royalroads.ca

This document constitutes an agreement to participate in a research project, the objective of which is to investigate the messages that youth communicate to engage their peers in environmental thinking and behavior. In their Term Two Enrichment, participants will create a series of videos which will be analyzed for their content and production techniques.

This research will provide data for the completion of M. Barwin’s Master’s of Environmental Education and Communication thesis, for Royal Roads University. M. Barwin teaches Grade 8 French Immersion and French at Central. The details of this study and M. Barwin’s credentials can be established by telephoning or emailing Dr. Rick Kool at 250.391.2523, or rick.kool@royalroads.ca, or Mr. Colin Roberts, Principal, Central Middle School at 250.386.3591, or croberts@sd61.bc.ca.

The research will consist of weekly production of short films, screening and discussion of videos, and written reflections of the week’s work. No identifying information will be collected through the research project, and no attempt will be made to link particular messages or comments with a participant’s identity. At no time will any specific comments be attributed to any individual in the data analysis or written thesis unless specific agreement has been obtained beforehand.

As this is a video project, images or voices of students may be identifiable in their films. The films will be shown to the participant group, as well as at Central. A compilation or excerpts of the videos may be shown in the greater community, at film festivals and conferences, and shared on-line (e.g. on YouTube or other sites). Participants and their parents/guardians will have opportunity to view and provide input on videos before public screenings, sharing in the community or on-line. Videos may be modified as required, including editing or deletion of footage.

All documentation and data (videos, field notes, reflections) will be kept strictly confidential for the exclusive use of M. Barwin for his Master’s thesis and his other studies or publications.
All data and videos will be stored in secure facilities and password-protected computer files. Participants and parents/guardians have the right to deny recording, transcribing or use of data obtained from participation.

Findings from this study may be published in national and international print and on-line education and environment journals. Conclusions will be presented to participants for their input. Draft and final reports can be made available to participants and parents/guardians upon request (please indicate below). A copy of the final report will be housed at Royal Roads University and be publicly accessible.

Prospective research subjects are not compelled to take part in this research project. If an individual does elect to take part, she or he is free to withdraw at any time with no prejudice. Whether they choose to participate or not will have no effect upon their grades, standing, or participation in current or future activities at Central. Video footage and written reflections for withdrawn participants will be destroyed, unless the participant and their parent/guardian allows inclusion in the study. If students elect not to take part in this research project, this information will also be maintained in confidence.

By signing this letter, you give free and informed consent to participate in this project. Parents or legal guardians of minors are required to sign to indicate their permission for the minor’s participation. You should ensure that you sign two copies, keeping one for your own records.

Please contact me if you have any questions or concerns. Thank you.

M. Alan Barwin

Signature:______________________________ Date: _________________________

☐ I am aware that I am free to decline participation and have the right to withdraw at any time without consequence

☐ I have read, understand, and consent to all articles of this document.

Student Name: (Please Print): __________________________________________
Signed: _____________________________________________________________
Date: __________________________________________________________________

Parent/Legal Guardian (Please print):______________________________________
Signed: ____
Date: _______________________________________________________________

Phone number: ________________________________________________________
E-mail: _______________________________________________________________

☐ Please send me a copy of the draft report for input.
☐ Please send me a copy of the final report.
Appendix C:
Participatory Video Games

The following descriptions of Participatory Video games in this appendix are taken directly from *Insights into Participatory Video: A Handbook for the Field* (Lunch & Lunch, 2006):

*NAME GAME*

*Stages*

1. Everyone sits in a circle; all present should take part in the exercise. The facilitator also takes part.
2. Hand over camera in its bag and let the group unpack it. Facilitator must not take camera back until it comes around for their turn to film.
3. Instruct Person A (whoever is sitting next to you) how to: hold the camera; switch camera on/off; where the record/pause button is. It is important they do this themselves. Keep looking around the group to make sure everyone is attentive.
4. Explain to the group that sound is captured as well as the picture. Ask Person B to plug in microphone (mic) and demonstrate how to hold it level with the stomach and pointing to mouth.
5. Ask Person A to open the screen at the side and to take off the lens cap. Show (mime) how to hold the camera with the left hand flat under the camera body and the left elbow tucked into the chest for stability. Let the first participant demonstrate it with the camera. Even if the participants are shy, they will pick up on your enthusiasm and belief in them that they can do it.
6. Tell the group that the most delicate parts of a camera are the lens and the screen - explain that they are like the human eye and can be damaged by fingers and dirt. So the lens cap must be put back on and screen closed when the camera is not in use. Please note that this instruction is the only “don’t” instruction you should give. At this early stage the facilitator must show complete trust in the group. Let them handle the camera without hovering nervously around them!

7. Ask Person A to try zooming in and out - ask them to frame just the head and shoulders of the person sitting opposite them. Then, making eye contact, they should ask the person opposite if they are ready. Note that giving instructions should not take long – get quickly to the filming part, the action!

8. Person A films the person opposite. They hold the mic, say their name and a sentence or two about themselves, e.g. something they are passionate about, or something humorous or banal like what she ate for breakfast…

9. After filming, Person A hands the camera to the person sitting next to her or him (e.g. in a clockwise direction) and the person talking also hands the mic to the person next to her - the process is repeated until everyone in the circle has had a chance to both film and talk, including the facilitator.

10. When handing over the camera the participant (rather than the facilitator) explains how to use it.

11. When everyone has filmed (including the facilitator) ask Participant C to rewind the tape and to plug wires into the monitor and then play back footage immediately to the group. Now the learning begins!
Important points to remember

• Keep instructions simple and brief - nothing too technical. Get straight to the action.

• Gauge group dynamics and let that determine the pace of the activity, e.g. if nervous, move quickly into using camera to "break the ice".

• Keep filmed messages very short.

• Spend time discussing the footage with the group after the first viewing. It is important to acknowledge that people react differently to seeing themselves on the screen for the first time. It can be strange, embarrassing, funny, even wonderful for different people.

• As you watch the footage keep a mental note on what technical learning can be drawn from the experience. In the discussion try to draw out the learning from the participants.

What is learned?

• How to use a camera; on/off; record/pause; how to hold; how to frame a shot; recording sound; confidence with the camera.

• Camera person holds all the power and responsibility! She or he must ensure that it is quiet and ready for filming, and make sure that the person speaking is ready.

• Learning by experience: e.g. we all get to feel what it's like to be in front of the camera, so we all become more sensitive.

• It's an ice breaker - we learn about each other as a group. All are focussed on a shared task and experience similar emotions as the game progresses.

• Relationship between the facilitator and group is equalised; also group dynamics are equalised in terms of power.

• All important technical skills are learned by the group members themselves.
• It is remarkable how much can be learned and achieved with this simple game, in terms of both technical learning and in building group dynamics.

**DISAPPEARING GAME**

*Stages*

1. The whole group of participants stands in a group as if posing for a photograph.

2. Person A is filming and should ask the others to stand like statues and to be silent. Try to be humorous (e.g. stand in funny poses).

3. Person A pushes the button and counts to three (records for three seconds). If the camera or tripod is moved, even slightly, the trick will be spoiled. Learn to squeeze the record button gently, rather than push it in.

4. Person A asks someone to leave the group - remember the others must not move.

5. Those removed can push record. The person who filmed before them can instruct them.

6. When the last person is removed, film the empty space for five seconds.

7. Now watch it immediately. Play it, rewind it, forward wind it (while playing) and make the group laugh. It will look as if people appear and disappear as if by magic.

*Important points to remember*

“The dangers are that it should not take too long or people will lose interest; the tripod must not move; and if it is a very big group remove a few people each time and select one to push the record button.”
What is learned?

“The advantages of the disappearing game: it’s good fun, it teaches record and pause, it ensures everyone is able to perform this fundamental skill. It shows the magic of video and its ability to manipulate time and play with reality.”

STORYBOARD TECHNIQUE

Stages
1. Talk to participants - find out what story they would like to tell. You can use creative activities to stimulate ideas if necessary/if time allows. Ask them "What would you like to make a short film about?" Build their confidence, encourage and praise their ideas.
2. Draw 4-6 boxes.
3. Ask "how would you introduce your story?" Draw a sketch in the first box. Draw a simple image (stick figures, quick sketch, no detail needed).
4. Continue quite rapidly with outline story; try to get participants to draw in the boxes themselves. Make sure everyone is involved.
5. At the end go back and get details (per box):
   "Who is talking here?"
   "Who is filming this shot?"
   "Where will you film it?"
6. Congratulate them.
7. The group now goes to film the shots in the order laid out in the storyboard. Explain that every shot counts so the person operating the camera only starts recording when everyone is ready.
Important points to remember: planning the storyboard

• Give lots of encouragement.

• Listen more, talk less.

• Stress that everyone has a story to tell and a right to be listened to.

• Agree on main theme/story before starting the storyboard.

• The facilitator may draw the storyboard if participants are not confident, but ensure that participants lead this activity.

• Be inclusive and sensitive so that everyone has chance to get involved.

• Avoid technical jargon.

• Let them keep the storyboard while filming as a point of reference. It's also very useful to go back to when the process is interrupted. Be careful that they don't use the storyboard as a script, looking at it constantly when filming. Encourage them to be flexible!

• Get on with the filming and the action quickly. They can always redo some bits after the first screening.

• Keep the exercise simple.

• Let the group own the story; don't instruct or suggest. Encourage participants to think about what exactly they want to communicate in each scene and encourage them to be concise.

• It works well to get them to explain their storyboard to others and get their reactions or get them involved.
Important points to remember: filming the storyboard

- Remind the group that everyone must have a go filming a shot and to take turns and share roles.

- The person filming the shot is in charge, and called the Director of that shot. She or he is responsible for capturing the essence or meaning of the box in the storyboard assigned to this particular Director. Watch out for over-enthusiastic dominators who may want to take over the process of filming the whole storyboard.

- It may be worth the facilitator giving a limit to the length of each shot or total length of film (e.g. 1 minute per box in the storyboard)

What is learned?

- Helps you bring together different ideas, viewpoints, methods, experiences in one story around a common theme. Can help to build consensus.

- Helps people communicate ideas and feelings in a visually interesting way, with different locations and presenters.

- Helps to understand how to tell a story as a visual piece (with a beginning, middle and end).

- Helps you think about including everyone.

SHOT TYPE CHALLENGE

Teach five different shot types from Extreme Close Ups to Extreme Long Shot.

Challenge the group to use all five shot types at least once in their storyboard. Include camera angles here.

Looking up at someone tends to increase their power or dominance, looking down has the
opposite effect. For a neutral effect hold the camera horizontal, at eye-level with the subject.

**VIDEO COMIC STRIP**

Draw as a storyboard but film without sound or movement in the shots. Each shot to last three seconds only. Each participant draws, directs and films one shot. For example, give the group a banana skin and ask them to create a comedy sketch of someone slipping on the discarded skin. The shot-type challenge works well with this activity.

**SHOW & TELL EXERCISE**

Ask the group to choose a significant object (e.g. something of value to them to present in a 2 minute film). The aim is to put them straight in at the deep end. Do not give any further instructions or guidance. They will probably zoom too much (rather than move themselves closer), pan too much, walk with the camera while filming, and forget to push the pause button. When you watch the footage together, mistakes will usually be self-evident, so ask them what they think and what can be improved before you mention any technical points that you notice. Remember to be generous with praise and encouragement, don't make them feel bad and stay away from "school-teacher-type" teaching!

Let them try again (with someone else filming) and watch again: the improvements are sometimes startling and progress is made remarkably quickly.
**CHATTING**

This means two or more people discussing an issue or event in front of the camera. It should be very informal, helping people to be very relaxed, with issues arising as the chat goes on. This puts participants in control.

**INTERVIEW OR "JOURNALIST" METHOD**

Participants ask questions among community members on topical issues. What? How? What are the local ideas, perceptions and solutions? You can try to work with representatives of the different target groups; this is useful for including harder-to-reach or socially marginalised groups.

No need for too much instruction at first, let them go out into the community without a facilitator and conduct a trial interview. This gives the facilitator time to plan the next phase, or to work with another group, or simply to take a short break! Then watch the footage together and discuss the results. Were the questions open questions? Did the interviewer maintain eye contact with the interviewee? Was the framing well done? Was the sound okay? Was the light in front of the subject? Let them analyse the footage first and if necessary give some tips.
COMMUNITY MAPPING

Working with the group to draw a map of the community before the group members go filming. Use large sheets of paper (back of unused wallpaper or flip chart stuck together) or draw on the earth and use local objects to represent places. This exercise is a brilliant way to get ideas flowing between people before you get the camera out. Sometimes this process is filmed too as it can be useful to capture the conversations. It is also useful to ask some people in the group to present the map to camera when the map is drawn. It can be marked with "a place I love and a place I want to change," and specific people in the community can be marked for interviews. With several routes drawn across the map, different teams can go out to film. A slight feeling of competition between groups can add to the excitement! Sometimes drawing the map can take all day and involve painting and collage - it may even be kept as a souvenir for many years.

Note: the map does not show the actual layout of a village or town, but is a representation of how the participants see their immediate environment. Do not allow anyone to dominate or criticise the accuracy of the map. Try to involve such a person in the group activity by all benefiting from their knowledge, but explain that there is no need to make a precise map at this stage. PV can also be used with 3-D models. PRA techniques such as Social Mapping can be used too, and then use PV to create a video map.
LIMITATIONS:

These are exercises and just part of the training process. It's worth listing some possible limitations:

1. There will be a language barrier if interviewer and subjects don't speak the same language.

2. Classified information may not be revealed. Trust takes time to build up. However people tend to be much more relaxed and open when they are interviewed by someone they know.

3. It is quite common for any new process to receive a poor reception, especially when working in a community which has already "participated" in workshops or consultations (or as one experienced practitioner has put it, "been PRA'd"). Usually the fact that cameras are handed over makes quite an impact but it may take time to build up trust with the community. Key factors are: who brings you there; who you have chosen to work with; and your own attitude and behaviour

4. In these exercises only a section of the population is represented, usually friends and relatives of the interviewers. But the trick is to invite a wide range of people to become participants. Or work with several different groups. Try to become aware of the social geography in the community. Make sure you work in all the different areas, with people of different wealth, vocation, gender and age groups.
Appendix D:
Baseline Questionnaire and New Ecological Paradigm Scale

VIDEOS TO CHANGE THE WORLD QUESTIONNAIRE:
Name: ___________________________ Grade: __________________

In your opinion, what are 3 issues that are important to you?

Why are these issues important to you? What has influenced your ideas (people, books, movies, experiences, school, television, websites, etc.)

How can video change the world?

Circle the answer that best reflects what you think:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>We are getting close to having too many people on earth.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>2.</td>
<td>Humans have the right to change the natural environment to fit their needs.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>3.</td>
<td>When humans disturb nature it often produces terrible results.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>4.</td>
<td>Human cleverness and skill will make sure that we do NOT ruin the earth.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>5.</td>
<td>Humans are greatly mistreating the environment.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>6.</td>
<td>The earth has plenty of natural resources if we just learn how to use them.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>7.</td>
<td>Plants and animals have as much right as humans to live.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>8.</td>
<td>Nature is strong enough to handle the bad effects of modern developed countries.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>9.</td>
<td>Even with our special abilities humans must still obey the laws of nature.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>10.</td>
<td>The so-called “environmental crisis” facing humans has been blown out of proportion (exaggerated).</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>11.</td>
<td>The earth is like a spaceship with very little room and resources.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>12.</td>
<td>Humans were meant to rule over the rest of nature.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>13.</td>
<td>Nature is very delicate and easily harmed.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>14.</td>
<td>Humans will someday learn enough about how nature work to control it.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
<tr>
<td>15.</td>
<td>If things continue as they are going, we will soon experience a major environmental disaster.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Not Sure</td>
<td>Disagree</td>
</tr>
</tbody>
</table>
Appendix E:

Mindmap
February 25, 2009

It takes a really long time to make a movie (FA)

I like this enrichment because I love working with camera and acting. I also like to change the world and save the environment (FA)

I think that our movie is trying to address a few problems at the same time and is possibly going to be effective (WO)

I think this enrichment is really fun because it gives us a chance to open up and talk about environmental issues. My group video is coming along well and I think we are having a great time. (PT) Think pink and stand up for bullying!

It’s really fun! I feel like I can do something to help a problem that is important to me. I like being in a group with others doing similar things. It is very open-ended which lets us be creative. I think it is a great opportunity and I would like to do more. (MC)

I like this enrichment because I enjoy making videos and this allows me to do that while also being able to help others. (BE)

When I joined this enrichment I was under the interpretation that this was all about debating and about how we can save the environment. Do not get me wrong it was fun making videos but it wasn’t what I was expecting. (FE)

I think that most of my videos will be about the environment. (GC)
I like this enrichment because, I think participating and communicating with individuals is an important experience for everyone. It is a great chance for students to connect with their peers and hopefully connect with the world, and help make a difference. (HE)

I think this enrichment is a little too quiet. The message of the movies might be strong enough to inspire people to care about the environment. (SR)

I think our movie is about several things . . . homeless, affect environment

I like this enrichment a lot because you can make videos about anything you want. I think the video me and C and T are making is going very well, and I’m having lots of fun! (FM)
Appendix G:
School-wide Questionnaire and Results

**EARTH DAY ASSEMBLY SURVEY:** Please circle your answers

<table>
<thead>
<tr>
<th>Grade:</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>English</th>
<th>French Immersion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Agree</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Neutral</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

- **I enjoyed the Earth Day Assembly**
- **I learned how to live more sustainably**
- **I liked the videos**
- **The videos I liked best were**
  - Waaalk!
  - Environment 101
  - You can’t change the past
  - Interviews
- **What stood out about the videos was:**
  - The videos changed my thinking and/or actions
  - The games changed my thinking and/or actions.
  - I usually make an effort to be green.
  - I am concerned about environmental issues like climate change and endangered species.

Any other thoughts?
Number of survey respondents: 170

Respondents in Grade 6 English: 50
Respondents in Grade 6 French Immersion: 21
Respondents in Grade 7 English: 18
Respondents in Grade 7 French Immersion: 46
Respondents in Grade 8 English: 12
Respondents in Grade 8 French Immersion: 23

On the graphs below, 6, 7 or 8 denotes the grade level of the respondent. English denotes the student is in the English track at the school. French denotes the student is in the French Immersion program.
I learned how to live more sustainably

I liked the videos
The videos I liked best

The videos changed my thinking and/or actions
The games changed my thinking and/or actions

I usually make an effort to be green
Survey Comments in response to the question, “What stood out about the videos?”

Grade 8 English Track

- You see other people’s opinion.
- It showed us more about being environmental.
- The people.
- I liked to see people’s opinions.
- The poster (You can’t change the past but you can change the future).
- It was pretty funny. Most of the walks are energetic.
- I could see their efforts but some parts were too simple.
- I liked how they were up front on what they supported and it’s true.
- Walking. I like walking.
- I can’t remember the videos.
Grade 8 French Track

- The sound was hard to hear.
- Thugging a tree.
- The video (Environment 101) had the most energy and got points across the best and it was the most fun to watch.
- You couldn’t hear a thing they said in the videos, and next time you should use a tripod.
- That they were incredibly hard to hear the people talking, thus making it hard to understand what was happening. You could not see the image very well. It was dark.
- Thugging the tree, well done, fluid (in Waaalk!)
- That they were made by kids.
- Made by kids our age.

Grade 7 English Track

- How many other people walk in our school instead of riding in the car.
- We do a lot of recycling in the school. But what about the animals around us?
- The students filmed inside Central so they were personalized.
- I didn’t [like the videos].
- How much we can do to help the Earth.
- The people needed to speak louder.
- They strongly spreaded [sic] the message that we need to be greener to everyone.
Grade 7 French Track

- It (Environment 101) showed more things you could do instead of just interviewing people.
- The fact that we couldn’t understand what everyone in the videos was saying.
- It was really fun!
- That we knew the people and so could relate to what they were talking about.
- The video called *You can’t change the past*.
- The video *You can’t change the past*.
- People should be concerned about global warming and animals being extinked [sic] and endangered.
- They were about saving the environment.
- The weirdness.
- That they were all about making the environment a more important concern in the world.
- Entertaining.
- Good ideas.
- The humour.
- It was funny.
- It was inspiring.
- It was fun.
- Well, me and other people created it.
Grade 6 English Track

- My friend made it.
- We could see others’ points of view.
- About the walk.
- I don’t remember it.
- The environment and nature.
- How serious and true it was.
- They were fun and cool.
- How to treat the environment better.
- I don’t remember.
- The tree hugging.

Grade 6 French Track

- It was funny yet interesting.
- For interviews, I liked the ideas and what the people said.
- It was cool.
- They were interesting and cool because they were made by students.
- They it was cool kids our age did them.
- When they asked people what they think about the Earth.