Effects of Video Making on Motivation and Self Determination in School Health Education

by

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BSc, Simon Fraser University, 1982
MA, University of Victoria, 2005

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in the Department of Curriculum and Instruction

Supervisory Committee

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Abstract

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This dissertation posed the questions (a) What effects do creating videos on a topic of interest to grade 10/11 health education students have on motivation, self determination, and relatedness in health education class? and (b) Are some phases of video making more intrinsically motivating than others? Mixed methods were used to evaluate the impact of a video making intervention using Self Determination Theory (SDT) in four health education classes at publicly funded high schools in western Canada.

In answer to research question (a), Multivariate Analysis of Variance (MANOVA) tests indicated that overall, intrinsic motivation, extrinsic motivation, self determination, and relatedness were not changed over the timeframe of the intervention. Amotivation increased. Exploratory analyses indicated that student autonomy and first language had moderating effects. Thematic analyses expanded findings by identifying environmental and social factors influencing student video processes.

In answer to question (b), Multivariate Analysis of Variance (MANOVA) tests indicated that overall, there were no differences in intrinsic, extrinsic, amotivation, or self determination across three phases of the video making process. Exploratory analyses indicated that the classroom students were in as well as their gender and first language had moderating effects.

Study findings add to what we know about effective and successful school health education, which verifies the needs of adolescents being served; establishes linkages among program goals, objectives, and outcomes; monitors program implementation; and measures program effects on target population (Farmer et al., 1998). Contributions to Self Determination Theory literature include: (a) highlighting the role that student autonomy may play in positively influencing intrinsic motivation, identified regulation of motivation, and amotivation in health education class; (b) adapting and applying SDT measurement tools to a school health education setting to operationalize types of motivation and self determination, thus contributing to the development of a common understanding; and (c) using less ambiguous definitions of motivation within school health education contexts.

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Thanks to all of my committee members for staying the course.

Thanks to my family for encouraging and loving, and for making the space in our lives for this work.

Thanks to my friends for listening and encouraging.

Thanks to school administrators and teachers for welcoming and supporting my work with them in their schools and classrooms.

Thanks to students in six classes I worked with for engaging in this research.

CHAPTER 1: INTRODUCTION

Contemporary video production has catapulted the average North American teenager into the director's chair, the editor's suite and the producer's studio. No longer the exclusive realm of the elite, video making is a form of self-expression that has become quite commonplace. Young people can design and produce their own representations of knowledge and communication, thus opening up many possibilities for educators and education. Video use in schools and communities can go beyond regular schooling and has the potential to catch the interest and imagination of young people in ways that enable them to actively engage in creative processes of expression. Video making has the capability of enhancing learning across the curriculum (Reid, Burn, & Parker, 2002). Currently, few teachers use video production as a teaching technique, and there has been little systematic exploration of its motivational, learning, developmental, or curricular aspects. We need to understand which characteristics of making videos are essential to real learning. We need to know if we are observing lasting change or transient novelty effects. We need to distinguish between motivational and curricula merits. Without these understandings, video making will produce inconsistent success in the classroom.

This research study took a video-making curriculum developed in the Traditional Pathways to Health (TPTH) project (Riecken, Scott, & Tanaka, 2006) into high school health education classes. The researcher worked as part of a TPTH project team that engaged indigenous youth in discovery and critical thinking about personally relevant health and wellness issues through video production of documentary styled videos. As part of their First Nations leadership classes, students made videos on health related

issues such as drug use and addictions, diabetes, healthy lifestyles, participation in sports, racism and discrimination, healing circles, traditional foods and medicines, and the protective effects of culture. In this study in the context of high school health education, specifically the Planning 10/11 course, students also chose health related topics that interested them.

The researcher came to the TPTH project from a teaching background, having been a British Columbia certified teacher for 25 years in the public school system, three of which were spent in northern British Columbia where she carried out Master's research. Her MA thesis, Culturally Based Education: Student Technology Projects in a First Nations Community, found that indigenous community members valued the cultural relevance that was possible with multimedia technologies because they were able to make connections between personal issues, such as health and learning, with their own experience and culture. The research centered on a qualitative case study that explored community members' observations and perceptions of student produced multimedia technology projects. The student work was community-based and embedded in the First Nations culture of a remote northwestern British Columbian village. Participants in the study expressed strong support for Culturally Based Education (CBE) programming, specifically those that used technology in innovative ways to support culturally relevant community-based educational initiatives as well as to create resource materials. They also made connections between the research, production and presentation of student technology projects and overall health (Scott, 2006).

One of the critical social factors found to affect health is that of control (Kirmayer, Brass, & Tait, 2000; NAHO, 2003; Tsey, Whiteside, Deemal, & Gibson,

2003). This refers to the amount of control people have over their own lives as well as to the network of supportive relationships they have which protect them from isolation and disconnection. Video making provided opportunities for students to choose, take, and have control over the research direction that their work would take and ultimately any changes they might make in their health behavior as a result of their research. Control or locus of causality, volition, and choice are key components of autonomy, which is one of three main elements of self-determination along with competence and relatedness. Self-determination theory is a way to think about how people get motivated to both change old and start new health-related behaviors and maintain them over time (Ryan, Patrick, Deci, & Williams, 2008).

Social behaviors are developed over lifetime, with a strong emphasis on childhood and adolescence. Health enhancing behaviors are influenced, modified, and often set during this time. Jenkins (2003) outlined risk factors and health issues throughout the lifecycle based on cognitive and developmental characteristics of infants and young children, adolescents and young adults from 15 to 24, prime of life from 25 to 64, and the older years from 65 to 100. He also identified ten social behavioral factors relating to the primary causes of death, all of which are preventable, thus providing a focus for school health education interventions. They are:

- Tobacco use
- Inadequate aerobic exercise
- Lack of immunization against microbial agents
- Firearms
- Motor vehicle trauma
- Excessive alcohol consumption
- Exposure to poisons and toxins

- Inadequate or excessive nutrition (dietary habits)
- Risky sexual behaviors
- Use of illicit drugs

Jenkins (2003) attributed the positive effects of increased schooling on health to more experience in thinking through problems completely, exposure to a wider range of possible solutions to problems and more helpful resources, the ability to include a future dimension when considering outcomes of today's actions, development of a sense of responsibility and self-efficacy, supervised practice in interpersonal skills such as cooperative work, anger control, negotiating skills, winning and losing, as well as opportunities for all day interaction with a peer group in an adult-led environment where there is reasonably adequate control of the transmission of values, content, objectives, and reinforcement of these. Imagine what might occur if the focus in schools were to be on health!

This is not a new idea. The development of our understandings related to health education and health related behavior for individuals and society has, however, put us in a position in which schools and communities have incredible potential to modify and make changes to social behaviors that will prevent unnecessary deaths and sustain healthier lives.

Planning 10/11 and the health education component of it, is a required course for graduation in British Columbia high schools. There is no provincial exam nor is the course required for college or university entrance. Curriculum content includes career planning, budgeting and finance, and health education. Within the health education component, four key elements of health are addressed including healthy living, health information, healthy relationships, and health decisions. Nine learning outcomes are

outlined along with the expectation that at least five specific health issues and topics will be addressed. Thirty-six hours of instructional time are recommended for the health education component of the course (Mimick & Thompson, 2007).

Three weeks were allocated for the video intervention, which worked out to between eighteen and twenty hours, depending on the school. All of the following nine prescribed learning outcomes could potentially have been met during this time: (a) analyse factors that influence health; (b) analyse health information for validity and personal relevance; (c) demonstrate an understanding of skills needed to build and maintain healthy relationships; (d) analyse factors contributing to a safe and caring school; (e) evaluate the potential effects of an individual's health-related decisions on self, family, and community; (f) analyse practices that promote healthy sexual decision making; (g) analyse practices associated with the prevention of HIV/AIDS; (h) analyse strategies for preventing substance misuse; and (i) analyse individual and societal practices associated with road-related risk reduction and injury prevention (Mimick & Thompson, 2007). Using video production in health education class was intended by the researcher to motivate and engage students in ways that could influence their learning and potential changes they might make regarding important life decisions (e.g., academic, health, family).

Video production may be particularly motivating because it has personal meaning for students (Stipek, 1996) and encourage a sense of autonomy and self-determination (Ryan & Deci 2000, 2002). From a learning perspective, video production makes visually explicit the metacognitive processes of organizing information and developing arguments (Flavell, Miller, & Miller, 1993). From a development perspective, video production

provides opportunities for identity exploration that are an important part of adolescent development (Arnett, 2007; Dweck & Master, 2009; Steinberg, 2005). From a curriculum perspective, video production develops both technical skills and topic knowledge (Goodman, 2003; Loveland & Harrison, 2006). Finally, these strengths may combine to create a particularly powerful method of teaching health behaviour. It influences and may change attitudes, intentions and perception of control over students' health behaviours (Conner & Sparks, 2005) as well as meeting needs for autonomy, competence, and relatedness in self-determination (Ryan *et al*., 2008).

This study examined video production as a teaching technique and specifically looked at its effect on motivation, self-determination, and relatedness in the health education classroom. Research literature pertaining to video production, self-determination theory, and school health education is reviewed in the next chapter, thus providing a framework and rationale for the study.

CHAPTER 2: LITERATURE REVIEW

In this research, the theory of self-determination theory (Deci, 1995; Ryan & Deci, 2000; 2002) was used. The research focused on what happened in terms of motivation and self-determination when young people made videos and whether that might lead to changes in their own lives and behaviors. The research took place in the context of school health education, allowing for an exploration of health related understanding and behaviour.

Self-Determination Theory

Overview

Self-determination theory (SDT) is a way of thinking about, organizing and explaining how people come to do the things they do (Deci, 1995). It is based on an assumption that human beings have psychological (as well as biological and/or physiological) needs that are considered universal. They are needs that people tend towards, but are not automatic (similarly to physiological growth—if the body is starved, it will not grow or develop in an optimal way). SDT identifies three psychological needs: competence, relatedness, and autonomy (Ryan & Deci, 2000). Competence refers to a sense of confidence in one's own abilities and interactions with the environment (Ryan & Deci, 2002). Relatedness is about feeling connected to others and having a sense of belonging (Ryan & Deci). Autonomy is the sense that one's actions and behaviors are under one's own control, and that they derive from personal interest or have personal meaning (Ryan & Deci). These needs can be used to identify and categorize supportive or non-supportive environments and conditions for optimal human development in terms of motivation, performance, and well-being.

SDT focuses on the interaction between the tendency towards the attainment of these needs and the social and environmental contexts. It is comprised of four mini-theories that have been developed to add to our understanding of the effects of social contexts on intrinsic motivation (cognitive evaluation theory), the concept of internalization with respect to extrinsic motivation (organismic integration theory), individual differences in self-determining behavior as related to orientation towards supportive environments (causality orientations theory), and how the concept of basic needs relates to life goals and daily behaviors (basic needs theory) (Ryan & Deci, 2002).

Cognitive evaluation theory has to do with the effects of social context on motivation, behavior, and experience (Ryan & Deci, 2002). It was developed to explain variability in intrinsic motivation, where one is personally interested in and acts out of an inherent satisfaction that activities have (e.g., novelty, challenge, and aesthetic value). The theory concentrates on the needs for competence and autonomy, indicating that there are social and environmental factors (e.g., feedback, communications, rewards) that influence and can promote feelings of competence during an activity, which in turn can increase and enhance intrinsic motivation for that activity (Ryan & Deci, 2000). For this to happen, a sense of autonomy or self-determination needs to be present (Ryan & Deci). A secure relational base is also thought to positively influence intrinsic motivation albeit in a more distal sense (Ryan & Deci). Social environments, then, influence intrinsic motivation both positively and negatively, and do so by supporting or not supporting psychological needs for autonomy, competence, and relatedness (Ryan & Deci). While cognitive evaluation theory details socio-environmental contexts relating to intrinsic

motivation, other forms of motivation are explicated by organismic integration theory, another mini or sub theory within self-determination theory.

Organismic integration theory assumes an inherent tendency to integrate and internalize ongoing experiences. Rather than a dichotomy of external versus internal or extrinsic versus intrinsic, organismic integration theory posits a motivation continuum from intrinsic motivation (purpose of doing something is for its own sake) to amotivation (lack of purpose or intention to act or do anything) (Ryan & Deci, 2000, 2002). Extrinsic motivation lies between the two and is described as having four different types with distinct regulating styles and processes for their integration or absorption (external, introjected, identified, integrated) (Reeve, Ryan, Deci, & Jang, 2008; Ryan & Deci, 2000, 2002). External regulated behavior is generally carried out in response to an external demand or reward or to avoid punishment (Ryan & Deci, 2000, 2002). Introjected regulation is behavior that is taken in but not really accepted as one's own; it is often performed as a result of guilt or anxiety (Ryan & Deci, 2000; 2002). Identified regulation refers to behavior that has been accepted as personally important, but may not be a part of one's beliefs and values (Ryan & Deci, 2000, 2002). Integrated regulation goes one step further where behavior is taken completely in, to form part of one's beliefs and values, even though it did not originate from within (Ryan & Deci, 2000, 2002). SDT also posits that people's inherent tendencies to integrate and internalize ongoing experiences results in the development of personal orientations towards autonomy and self-determination (Ryan & Deci).

Causality orientations theory assumes a relationship between personality, social context, and behavior as well as motivation for that behavior (Ryan & Deci, 2002). It was

developed to differentiate aspects of personality related to a person's inner resources acquired over time through previous experience in various contexts in order to facilitate the prediction of behavior. It pays particular attention to one's relatively stable orientation towards social environments and tendencies to orient in ways that support autonomy, control behavior, or lack of motivation (Ryan & Deci). Three orientations have been identified that are distinguished by the degree of representation of self-determination: autonomous, controlled, and impersonal (Ryan & Deci). Autonomous orientation refers to behavior regulation characterized by personal interests originating from or strongly endorsed by the self and is positioned towards intrinsic and integrated motivation for that behavior (Ryan & Deci). Controlled orientation is behavior regulation typified by directives about how one should behave as well as associated elicitations of guilt and anxiety. It is related to external and introjected forms of extrinsic motivation (Ryan & Deci). Impersonal orientation refers to behavior regulation characterized by a distinct lack of interest along with no apparent intention to act or behave in any particular way, nor with any motivation—an orientation or positionality towards amotivated regulation (Ryan & Deci). Each of these three orientations is assumed to be present to some degree in all people and has been used to predict performance and well-being (Ryan & Deci).

Basic needs theory was developed to clarify and elaborate the meaning of the concept of basic psychological needs, a core assumption of SDT, and to explain relationships of motivation and regulatory styles to health and well-being across time, gender, situations, and culture (Ryan & Deci, 2002). It considers connections between inherent universal needs to autonomous self-regulation in order to examine how and to

what degree satisfying those needs assists learning, development, and well-being (Reeve, et al., 2008). Basic need satisfaction has been linked to intrinsic motivation, autonomous self-regulation, and psychological well-being across cultures and across the life span (Ryan & Deci, 2002; Reeve et al.). It has also been associated with positive classroom functioning and enhanced conceptual learning (Reeve, 2002; Reeve et al.).

Educational Contexts

Positive classroom outcomes (e.g., higher academic achievement, higher perceived competence, more positive emotionality, higher self-worth, preference for and pleasure from optimal challenge, stronger perceptions of control, greater creativity, and higher rates of retention) are experienced in educational settings with autonomously motivated students and where teachers support student autonomy (Reeve, 2002). In his chapter on applying SDT to educational settings, Reeve reviewed and synthesized work in this area in order to clarify what educators were doing and might consider doing to support student autonomy in the classroom.

Reeve's (2002) synthesis found that autonomy supportive teachers acted in specific ways that controlling teachers did not. Specifically, they listened to their students and were responsive, they praised the quality of student work performance and were supportive, they gave students time to work in their own ways and were flexible, and they supported intrinsic motivation by motivating students through interest (Reeve). Controlling teachers, on the other hand, held the instructional materials and took charge, gave solutions and led students to the correct answers, gave critical evaluations of student work performance (versus information about quality) and were perceived to be demanding or controlling in their efforts to motivate using pressure (Reeve).

There are many elements in school and aspects of education that are not necessarily intrinsically motivating to learners. Understanding how people regulate and integrate an idea or behavior in terms of motivation can help direct how learning environments and conditions are set up to enhance its motivation. These understandings may help in the promotion of self-regulation of behaviors so they will persist over the long term (Ryan & Deci, 2002). They may also helps explain how students do well as a result of having teachers who behave in autonomy supportive ways.

Greater feelings of autonomy and enhanced intrinsic motivation were found when teachers offered choice, acknowledged feelings and provided opportunities for self-direction (Ryan & Deci, 2000). These are ways that teachers facilitate the incorporation or assimilation of extrinsic forms of motivation (e.g., identified) to integrated motivation. In addition to autonomy support, teachers create contextual elements that support the need for competence in terms of both classroom and activity or task design (e.g., scaffolding tasks, small group activities, directed self-reflection) (Reeve, 2002). A teacher's interpersonal involvement with students supports the need for relatedness (Reeve).

Self-determination theory provides a theoretical and practical rationale for the intervention design, where grade 10 and 11 students produced videos on topics of their choice in health education class. The following section reviews school health education, the setting and context in which the study took place.

School Health Education

Traditional views of the educational system's role see it as one of socializing children and adolescents, where teachers convey knowledge and values considered

important by society (Bremberg, 1991). A similar viewpoint exists for school health education and while there is no argument against improving student knowledge and skills, it is contended that doing so does not go far enough if we are to affect change (Jenkins, 2003; Nutbeam, 2000; Young, 2005). Directing our attention to the processes by which we engage in increasing student knowledge and skills may provide information and ways to bridge this apparent gap. The next part of the literature review describes philosophical positions underlying school health education programming, outlines ongoing barriers to school health education, delineates factors that demonstrate successful school health education programs using examples, and introduces the use of media in health prevention and promotion programs.

Philosophical Positions in School Health Education

Governali, Hodges, and Videto (2005) reviewed the purposes and functions of school health education programs. They identified four underlying philosophical positions, all of which are encompassed by self-determination theory. The positions included cognitive-based, decision-making, behavior change, and social change.

Cognitive-based philosophy maintains that providing students with information, increasing their knowledge base and understanding of ideas will enable them to make positive decisions relating to their own personal health behaviors (Governali *et al*., 2005). It aims to fulfill the need for competence. The health educator's role is to disseminate information. For example, the health educator might deliver a lecture on healthy eating benefits with the idea that providing students with this information will help them to choose to eat more healthily. The increased knowledge about what kinds of foods to eat and how that will benefit them would, ideally, lead to competence gains in terms of

understanding and knowledge of healthy eating and benefits as well as give rise to positive changes in eating behaviour.

Decision-making and skills development philosophies are similar in their focus on the degree to which a student can perform a skill in the classroom (Governali *et al*., 2005). They also aim to fulfill the need for competence and potentially autonomy. The health educator provides information, skills, and strategies with which to perform skills and make decisions related to personal health behaviors. Taking the previous healthy eating example, the health educator could also incorporate activities where students might analyze a popular restaurant menu for healthy balanced meal options. Students could compare nutritional information and pricing to develop decision-making skills related to identifying the ingredients and choosing healthy meal options when they go out to eat. The knowledge gained in addition to the skills practiced and learned would, ideally, lead to improved decision-making and healthy eating behaviour and competence. What it looks and feels like would be added to the information about what it is, with the potential added benefit of increased autonomy (choice, desire and control over what to do).

A behavioral philosophy aims to influence health related behavior, largely by focusing on individual lifestyle modification (Governali, et al., 2005; Jenkins, 2003; Nutbeam & Harris, 2004). Again, the focus is on fulfilling needs of competence and autonomy. The health educator provides information and facilitates individual identification of both current and target behavioral goals. Using the healthy eating example again, the health educator could have students create individualized meal plans or menus and accompanying grocery lists. They could track their own eating habits and develop plans to create healthy nutrition plans and strategies to carry them out.

Social change philosophy focuses on societal, environmental, and social factors that influence health and health behavior (Governali *et al*., 2005). It has potential to meet all three psychological needs (competence, autonomy, and relatedness). As a result of harsh living and working conditions during the industrial revolution, public heath action focused on social and environmental determinants of health (Nutbeam, 2000). The 20th century saw a shift to behavior modification for individuals and now, in the 21st century, another shift indicates that while health status is influenced by individual lifestyles, social, economic and environmental factors continue to be significant. Health educator roles, interventions, evaluation, and the scope of school health education are less clear with this philosophy. Work in the area suggests that collaborative, multi-faceted approaches may be more useful in effecting change than any of the other cognitive-based, decision-making, or behavioural change philosophy based ones in isolation (Governali *et al*.; Jenkins, 2003; Nutbeam).

Individual behavior has been and continues to be a major focus of health education, particularly in schools (Governali, et al., 2005; Jenkins, 2003; Nutbeam, 2000; Tones & Tilford, 1994). Governali *et al*. believe that the lack of consensus characterizing school health education philosophical discussion relates to school health educators' denial of their important role in influencing youth behavior, ignoring the needs of students, and failing to address the expectations of parents and communities. Benham-Deal and Hudson (2006) take the position that the role of the school health educator is to provide students with the health knowledge and health skills that are prerequisites for becoming health literate and that the purpose of school health education is to increase student knowledge and skills. They adopt a standards-based philosophy that they claim

provides the foundation for achieving public health goals. While they agree that broader goals are a good idea for overall school health and promotion, the authors do not believe that those goals should be the responsibility of school health educators.

The focus on individual behavior change has met with varying degrees of success, largely related to the resources available as well as challenges for educators inherent in targeting behavioral change. Knowledge based and skills based approaches have been utilized, both of which tend to emphasize the individual devoid of social context. As well, cultural differences in terms of both views of healthy living, and what role schools should play in health education require consideration. Shared understandings of what is meant by healthy living are critical to reaching consensus regarding the roles of schools and health educators in school health education.

There are many criticisms of school health education, quite likely resulting from increased attention and concern about adolescent health. The following example represents issues that have been identified in the North American context.

Ongoing Barriers to Effective School Health Education

An American study conducted in 2000 examined state and district level requirements and policies, standards and guidelines, evaluation, collaboration, as well as staffing and professional preparation (Kann, Brener, & Allensworth, 2001). The authors found evidence of both positive health outcomes and what they viewed to be barriers to effective health education nationwide. The following summarizes the barriers and consequences cited from their analysis of the results.

- Schools miss many opportunities to reinforce what is taught in elementary schools and to introduce new, age-appropriate topics in middle/junior and senior high schools.
- States need to help parents, school board members, teachers, school administrators, and other community members understand the value of health education and the importance of implementing the most effective policies and programs.
- Classroom instruction on specific health topics does not consistently reflect the National Health Education Standards. Health education teachers need more effective education curricula, other effective teaching materials, and appropriate staff development to provide instruction that more closely reflects the Standards.
- States and districts that provide professional preparation for health education teachers should strive to maximize the desirability, accessibility, and effectiveness of these training programs.
- For health education to have a positive impact on both health and academic outcomes, middle/junior and senior high schools need to teach required health topics in courses devoted primarily to health education or in combined health and physical education courses, whenever possible.
- Educators and public health officials should work together to enable schools to use these resources to implement effective health education policies and programs and remove barriers that impede school health education's potential to improve the health and well-being of youth (Kann *et al*.).

The last item is a recurring one in the literature (Bremberg, 1991; Garrand, 1991; Governali, et al., 2005; Jenkins, 2003; Nutbeam, 2000; St Leger, 2005; Valois & Hoyle, 2005; Young, 2005). It speaks to perceptions of both roles and purposes of education and health education as well as that of health educators and school health educators. Jenkins writes,

> …the role of behavioral change in reducing every one of the … major causes of disease and trauma [see figure 1] is clear at both the individual and social levels. For the first time in the history of medical sciences, the first priority is not further discoveries in the basic physical and biological sciences, but rather the community-wide application of psychology and other social and behavioral sciences for the purpose of putting well-proven preventive health measures into wider daily use. (p. 9)

While there is no universal agreement on how this might be accomplished, promising work in school health education is occurring.

The next subsection identifies ways in which success has been defined and demonstrated in school health education. Examples of successful integrated approaches and models are described and connected to SDT.

Successful School Health Education

Farmer, Krochalk, and Silverman (1998) identify four factors associated with demonstrating success in health education programs. These include: (a) verifying the needs of the adolescents being served; (b) establishing linkages among program goals, objectives, and outcomes; (c) monitoring program implementation; and (d) measuring the program's effect upon the target population. The authors further describe and rationalize methods that both guide and integrate evaluation into successful program design. The following models and examples incorporate all four factors for demonstrating success in school health education programming. In addition, they provide avenues and opportunities for students' psychological needs of autonomy, competence, and relatedness to be met in the school health education context.

Integrative approaches to school health education exist and formally recognized programs have led to improved health and education outcomes (Coleman, 2006; St Leger, 2005; Valois & Hoyle, 2005). They are known as Health Promoting Schools, Co-ordinated School Health, and Comprehensive School Health, depending on what part of the world you are in. Though European and North American models developed independently, they have common goals, principles and guidelines (Young, 2005).

The school health promotion model aims to create and promote a healthier student population that is ready to learn (St Leger, 2005). It focuses on priority behaviours interfering with learning and long-term well-being as well as upholding social justice and equity concerns. By coordinating the efforts of all faculty, staff and administrators, their health and well being issues are also addressed. Health and learning are linked so that each child is assured of access to needed services. Interagency and interdisciplinary work groups are integral to the resources of the school health program. Health instruction models are replaced by multiple strategies (e.g., student participation and empowerment, collaboration with local community, integrated into school's ongoing activities, involves and engages parents and families in health promotion) intended to elicit healthy behaviors. Student psychological needs for autonomy, competence, and relatedness are integrated. In addition, the model addresses structural and environmental changes as well as lifestyle changes. It is also conducive to demonstrating success whereby verified needs can be served, links can be made, implementation can be monitored, and effects can be measured.

In North America, there is a strong focus on educator and school system accountability for student learning, which has put pressure on the entire education system

and particularly health education (Benham-Deal & Hudson, 2006; Valois & Hoyle, 2005). Standards and learning objectives for school health curricula are in place that both allow and enable educators to address public health issues and the social behaviors influencing them. Examples from Hawaii (Pateman, 2002), Sweden (Haglund, Tilgren, & Wallin, 1991), Texas (Coleman, 2006) and Denmark (Jensen & Simovska, 2005), to name a few, demonstrated how different school communities worked with and adapted national (and/or provincial/state) standards to local needs and issues as well as successful implementation of school health programs.

The quantity of standards to address can be overwhelming to teachers. In Hawaii, a partnership was developed to align seven Health Education standard with seven risk/content areas in order to attend to what was identified as relevant to the local Hawaiian community and student population (Pateman, 2002). Consequently, focusing on what was relevant to their context supported teacher needs for autonomy and competence. It also enabled teachers to concentrate on clarifying the needs of the local students and linking goals, objectives and outcomes; two factors associated with demonstrating health education program success. Similarly, in British Columbia at the grade 10 level, nine provincially prescribed learning outcomes were identified that combined content and processes that students are expected to demonstrate in the health portion of their Planning 10 course (Mimick & Thompson, 2007). As a result, teachers and students can work with local organization (e.g., Healthy Schools BC, Active Living, Insurance Corporation of B.C., hospitals) to address relevant health concerns such as "…individual and societal practices associated with road-related risk reduction and injury prevention (e.g., obeying speed limits, wearing seatbelts, driver education)" (p. 21).

Evidence from youth and adult learning, community health and development education as well as health promoting school initiatives suggest that more interactive and participatory methods within schools and their communities are likely to be more effective and may be taken up more readily by the wider community (Jenkins, 2003; Jensen & Simovska, 2005). In Denmark, for example, students worked with teachers, administrators and parents to make changes in their own schools and lives that they identified as promoting health (Jensen & Simovska). These included length of breaks and classes. In El Paso, Texas, schools and communities worked together to educate, promote, and prevent childhood obesity (Coleman, 2006). The program used a national curriculum framework that was adapted to fit their specific local needs. Cafeteria staff at one school conducted tours and tastings. They made traditional Mexican dishes healthier and offered food from each region of Mexico for lunch. Teachers, parents, and other community members worked on developing related cultural activities and learning opportunities. District policy was changed to include daily PE for 45 minutes in all elementary schools and a law was passed that mandated coordinated school health and recommended 30 minutes of physical activity a day (Coleman).

With students, teachers, schools, districts, and community members working together, effective health education policies and programs were implemented; what was taught in earlier grades was reinforced; and the value of health education was demonstrated. In addition to overcoming these barriers, needs for autonomy, competence and relatedness were met, and all four factors associated with demonstrating success in school health education were included (i.e., students' needs were verified; linkages

between program goals, objectives, and outcomes were made; implementation was monitored, and effects were measured).

Another area that holds promise for health education programming lies in the use of media. The next sub-section reviews research related to the variety of ways that media has been used, culminating in the work that inspired the current study.

Use of Media in School Health Education

Increased attention is being paid to ways in which media can be used to educate and promote health. Media use can be passive, active, or interactive. Passive uses, such as looking at and reading posters or articles, listening to radio, and watching television have been in use since the technologies came into being. Active and interactive uses of the media are a more recent phenomenon, largely connected to the availability and cost of associated technology. Four health promotion and/or prevention research projects are described as examples of ways that media are used in this area.

Passive, active, and interactive uses of media were evident in a Vermont study where researchers increased the impact of smoking prevention programs targeting middle school students by adding a mass media intervention also targeted at adolescents (Wiston, 1998). The project required the cooperation and collaboration of schools and local television and radio stations. Two pairs of schools took part with a total of 5,458 students starting in grades 4, 5, and 6. Each pair had a school that received the school smoking prevention program only and one that received the school program plus the mass media intervention. Students were followed for 4 years and surveyed annually. Findings showed that both groups experienced decreases in cigarette smoking behavior. Significant statistical differences were found between the groups in the last two years (Flynn et al.,

1992; Flynn et al., 1994). As well as being exposed to the media campaign, students were consulted via focus groups and had input into the campaign, though professionals produced the radio and television spots.

Some health promotion and prevention research situated students and participants as producers of media (Ager, Parquet, & Kreutzinger, 2008; Banerjee & Greene, 2006; Stewart, Riecken, Scott, Tanaka, & Riecken, 2008). Taken as a group, these studies included both active and interactive uses.

Banerjee and Greene (2006) evaluated the efficacy of two media literacy strategies (analysis and production of anti-smoking media) for smoking prevention. They found that the group involved in a workshop where they produced anti-smoking media reported reduced positive attitudes toward smoking over the time frame of the study. Neither the control group nor the group engaged in an analysis only workshop experienced reduced positive attitudes towards smoking. The authors also found that the production group expended more attention and had more favorable perceptions of their workshop than the analysis only group. The authors suggested that the changes might have occurred due to the novelty of the intervention. While novelty has been cited as a possible issue with the use of technology and new media (Liu & Hsiao, 2001; McGrath et al., 1997), these students produced anti-smoking posters, which is not a new nor innovative teaching practice or medium to work in. In addition, the authors do not acknowledge that in order to produce something, a certain level of analysis is required. Students in the production group had the benefit of the analysis portion of the workshop plus the opportunity to apply their analysis to their own ideas, thought processes, decision making and creativity.

Two substance abuse prevention projects included video production as part of their overall goals. In one, young people were involved in the development of locally developed substance abuse videos for a middle school curriculum (Gosin, Dustman, Drapeau, & Harthun, 2003; Holleran, Reeves, Dustman, & Marsiglia, 2002; Reeves, Dustman, Holleran, & Marsiglia, 2008). Gosin et al. found and considered the video making to be successful, though little detail of this success was provided. Holleran et al. and Reeves et al. focused on power and control in the process of the video making, noting the differences in perspectives as well as how shifts and transformation in power occurred over the course of the project. Another substance abuse prevention project had 10-12 year olds learn about substance abuse prevention by producing a substance abuse video in their community (Ager & Parquet, 2008; Ager, et al., 2008; Holleran, et al., 2002). Video was used as a way to motivate participation, learn about drugs in the neighborhood, and promote dialogue around substance abuse in the community. Findings focused on evaluation of knowledge acquisition (drug and video) and improvements in drug attitudes and behaviors. Though the authors said the video was to inspire the community to change, neither article discussed the community response (or in fact the participant response) to the video that was produced. Nonetheless, both projects supported student autonomy, competence, and relatedness in the work they did researching and creating videos within the community.

The previous video topics were dictated (i.e., there was no choice) and specific to substance abuse prevention. In a project designed to involve Indigenous youth in addressing health concerns, student participants created videos to express their own interests about health and wellness (Stewart, et al., 2008). They were involved in all

aspects of the video production process. Qualitative analysis of interviews, field notes, and student videos yielded four metathemes of community, culture, confidence, and control. The authors explicated the ideas in terms of participant development of critical consciousness, adding to understandings of contemporary health literacy. They found that student involvement in the project led to an increased sense of responsibility for learning that they connected to the research, thus empowering themselves through the process of creating videos. Other articles stemming from this video making project focused on aspects of resistance (Riecken et al., 2006), resiliency (Riecken, Scott, et al., 2006), cultural knowledge (Riecken, Tanaka, & Scott, 2006), and ethics (Riecken, Strong-Wilson, Conibear, Michel, & Riecken, 2005).

Research in school health education indicates that programs and projects which support self-determination in addressing people's needs for relatedness, competence, and autonomy have potential to effect change (e.g., Coleman, 2006). While media use has largely been restricted to watching (passive) and sometimes analyzing (active), student media production may provide an avenue for successful program design. Studies in this area are limited and not focused on behavior change per se. They are exploratory and emergent in nature. The next section focuses on video production and examines research in this area.

Video Production

Film and video have long held a place in education and schools, largely as instructional tools used to inform the learners. Media education has historically focused on analysis and deconstruction as ways of understanding how the media can be used and manipulated (Buckingham et al., 1995). Technological changes and improvements as

well as decreasing prices have opened up possibilities for video making by students both in and out of school. Video making as an instructional strategy has been used in varied situations around the world for numerous purposes. Flanked by professional filmmaking on one hand and home editing on the other, schools may be well situated to take advantage of the many affordances video making holds for teaching and learning (Burn & Durran, 2006; Goldfarb, 2002). This section includes a brief outline of the video production process, followed by an overview of research on educational uses of video production.

Overview of Video Production Process

The overall video production process is made up of three main phases: preproduction, production and post-production (Loveland & Harrison, 2006; Sweeder, 2007). Theodosakis (2001) includes two additional phases of development and distribution, which, for the purpose of this brief overview, will be incorporated into preproduction and post-production respectively.

Preproduction involves defining and conceptualizing an idea or topic for a video (Kenny, 2001; Theodosakis, 2001). It is the planning phase and ideally culminates in a detailed guide or plan for a video and its production. The purpose and audience as well as the choice of genre help shape the development of the production. Research, scriptwriting and storyboarding are integral to the process and aid in formulating shot lists and production schedules. Roles and responsibilities for various aspects of the production are clarified.

Once the planning or preproduction phase is complete, production can commence. This stage includes videotaping all the images, sounds, sequences and shots identified in

the script and storyboard occurs (Kenny, 2001; Theodosakis, 2001). Lighting and sound requirements for the scenes are important factors to pay attention to. Technical skills of setting up and operating equipment (cameras, tripods, microphones, lights) are required at this time. Production is complete when the footage is satisfactorily taken and collected along with any other required images, graphics and sound or audio recordings.

During post-production, the video footage is logged or recorded and correlated with shot lists and sequences from the storyboard to develop an edit decision list, which is used to assemble the various video clips and other relevant media for editing. Editing of images, sound, transitions and credits results in a rough and ultimately a final video for presenting and sharing with the public.

Typical film and video production Hollywood-style does not particularly support self-determination, largely due to the structure deemed necessary to produce economically viable professional films and movies. Roles are specific, set and restrictive, with few opportunities for flexibility, choice, or creativity outside of directing and producing. The process of producing videos in schools, however, can provide opportunities for promoting relatedness, competence, autonomy and self-determination. Modifying structure and roles as well as scaffolding tasks and activities make it an instructional technique or strategy conducive to enhancing learning and skills across the spectrum. While video production research does not focus on self-determination, connections to SDT concepts and support for basic needs (autonomy, competence, and relatedness) are identified in the following section.

Video Production Research

Video production research has been conducted in both community and school contexts. Two projects were found that sought to combine the two. Three kinds of research prevailed in the literature: participatory, case study and evaluation. The studies were emergent and exploratory in nature. This section of the review traces the history of video production research from its roots in participatory development work in communities through case and evaluation studies of its use in schools. Key ideas and findings are highlighted and connected to self-determination theory. Methodological limitations of the reviewed literature are summarized and serve to provide a rationale for the proposed research design that follows.

Participatory video production in the community.

Work begun in the 1960s viewed the social science researcher as an advocate for social change (Dowrick & Biggs, 1983). Early research involved community members in researching and creating videos to both reveal unjust and inequitable social situations and promote action (Dowrick & Biggs; Odutola, 2003; White, 2003). Fogo Island, a small Canadian fishing community, became involved in a participatory video process (now known as the Fogo process), whereby the islanders' perspectives were articulated to government officials as well as other islanders, thus promoting dialogue and in turn, social change. Participatory video processes continue to be used, particularly in the developing world and with youth (Asthana, 2006; Buckingham, Grahame, & Sefton-Green, 1995; Goodman, 2003; Kinkade & Macy, 2003; Odutola, 2003; Riecken, Conibear, et al., 2006; White, 2003).

Youth media participation and production crosses a broad range of technologies and continents. Three initiatives from Mexico, Nigeria, and Kyrgyzstan involved youth creating videos as a way to explore aspects of their lives relating to health (e.g., HIV/AIDS), education (e.g., children's rights), and social development (e.g., family values) (Asthana, 2006). Asthana's case study research focused on exploring how media participation empowered young people, what that participation meant in different cultural contexts and settings, and what role technology played in youth participation. She found that the young people approached social problems with refreshing and unique perspectives and that they sought to converse with the adult world about their concerns. They were excited and motivated both by the opportunity to use the technology and to create videos. They shared knowledge, developed and held leadership roles in society, and said that they had more confidence in their ability to communicate their needs. Video work generated ongoing dialogue in communities and in some cases, was shared with wider audiences (e.g., at international film festivals). Some materials were produced and taken into schools to share and discuss, which Asthana saw as a potential venue for distribution. Needs for relatedness, competence, and autonomy were met through the youths' participation in video making processes. Video making in these instances was used as a tool for participation and change.

Young people participated in research, news reporting, and hosting Straight Talk, an Albanian television show that included human-interest stories, investigative reporting, as well as educational pieces relating to culture and of national significance. Kinkade and Macy (2003) found that participants were involved and interested in the activity, engaged creatively and intellectually, and felt that they could make a difference. The notion of

wanting to make a difference was a desire reiterated by Canadian First Nations students who produced and screened videos on health topics of their choice (e.g., culture, community health and wellness) (Riecken, Scott, et al., 2006). For example, one student wanted her message to reach other teenagers to encourage them to play sports instead of fighting with each other. The video she made showed three generations of her family all participating in lacrosse, which she viewed as one way to both communicate positively and be healthy. Self-determination needs were met for research participants and video making in these studies was used as a tool for participation, communication, and change.

The process of producing videos is thought to enable opportunities for identity exploration (Buckingham, 2008; S. Goldman, Booker, & McDermott, 2008; Thompson, Putthoff, & Figueroa, 2006). Goldfarb (2002) and Tyner (1998) both suggested that pedagogical approaches using student generated media production technologies held potential for investigating issues of gender, sexuality, and identity. Opportunities for personal growth and intellectual development were provided for young people when they researched and made videos about meaningful topics and community issues at the Educational Video Center in New York City (Goodman, 2003). In one documentary workshop, teens chose to explore the prevalence of guns in their neighborhood. Throughout the production phases of making their video, youth negotiated and made decisions, rationalizing their choices. They found that just by listening to people telling their stories as well as telling their own stories, they were taking a risk, which was both empowering and potentially dangerous. When their work was screened in public, they were presented with another occasion to discuss and defend their position on guns and gun violence in their community as well as the choices they made within their video to an

outside audience. Leadership skills and peer-to-peer mentorship skills were developed by youth who screened their video, The Missing-ism (adultism), as part of their participation in New York City's Global Action Project (S. Goldman, et al., 2008). In addition to being a tool, participatory video production processes provided opportunities for identity exploration, intellectual development, personal development, and the potential to affect social change.

The process involved an authentic real-world task or project, that of creating and presenting an important video to genuine audiences. Participants valued feedback that real viewers gave and for some, it was the most important aspect of the video making process (S. Goldman, et al., 2008; Goodman, 2003; McGrath, et al., 1997; Riecken, Scott, et al., 2006). Having an audience was also found to focus student activity (Beichner, 1994; Schuck & Kearney, 2004). Additionally, authentic tasks are related to the notion of voice and ownership.

Projects and programs involving youth in media production frequently cited goals of giving voice to youth and allowing them to own their work as rationales for having them (Asthana, 2006; Kinkade & Macy, 2003). It is likely the authors found that media production provided opportunities for young people to express their points of view in their own ways. As well, Schuck and Kearney (2004) found student voice and ownership to be key factors in enhancing motivation. Chan (2006) focused on voice and looked at authenticity and positioning of youth in youth media practice in Hong Kong. The author examined interviews and video productions from three different organizations involved in youth media productions. She found that youth were motivated for a variety of reasons and concluded that however they positioned themselves in their media productions and

practice was not necessarily an authentic expression. It was more likely to reflect a negotiated position with peers, instructors, and the organization itself. She further questioned assumptions about youth media production relating to identity work and agency, pointing out power dynamics that might well subvert natural or authentic expressions of self or identity.

Odutola (2003) was also concerned with authenticity and representation. He looked at a participatory video project in Nairobi initiated by OXFAM to find out how poor people defined their situation and quality of life and what they thought would be most effective to improve it. He expressed concern that the technique (video production) was unfamiliar and had to be taught by a foreigner who arrived with a set agenda and framework, rather than as part of a collective process. He was also concerned about what would happen when the foreigners left and what would happen when the video was taken out of its local context and into an international one.

Classic development work in participatory video is process-oriented and aimed at bringing about critical awareness as well as personal development and/or social change (Asthana, 2006; White, 2003). Challenges to participatory media processes included: ongoing and systemic support (Odutola, 2003), lack of continued funding (Asthana, 2006; Bolam, McLean, Pennington, & Gillies, 2006; Kinkade & Macy, 2003; McCluskey, Lloyd, & Stead, 2004), lack of longitudinal assessments (White, 2003), process/ product tensions (Buckingham et al., 1995; White, 2003), distribution (White), power imbalances (Chan, 2006; Odutola; Packard, 2008), and true representation (Odutola).

Reports of participatory media practices referred to transformation and change, but frequently failed to describe or explicate what changes had occurred. Kinkade and Macy (2003) and Asthana (2006), for example, described projects and initiatives with youth that were considered exemplary. They spoke of skill development and confidence, which they suggested added to participant confidence and personal development. Both studies inferred that the videos that were produced had either impacted or had the potential to impact the viewer and social conditions of their participants lives, yet they did not provide any details of what this looked like. White (2003) on the other hand, reported purposes, goals, and at least, preliminary outcomes of participatory video projects. In Africa, the process led to group unity and influence at the local political level, where fisherwoman of one village worked with others in similar circumstances to seek solutions to common issues. Hunting issues were identified, clarified and resolved in the Arctic of Canada, where the Fogo process was used with Inuit traditional hunters and government officials.

Not all participatory video has social activism as its goal. White (2003) points out that the purpose of involvement or participation often dictates the goals. Participatory video can be used as a way of involving people in a meaningful project to meet specific communication goals (e.g., Gosin et al., 2003). Even without a social change goal as a motivating force, other goals could well be shifted towards an integrated motivation, where participants both identify and see the value of a project and perhaps, come to take it as their own. This may well have relevance for the use of video production in education, which is the context of the next subsection.

Video and media production in school education.

While the aim of participatory video practices and research is to place the participants in a leading role, it has not been the case in media education (Goldfarb, 2002). Tracing the history and development of media and educational television initiatives, Goldfarb investigated the place of mass, popular and sub cultural visual media in the classroom. He concluded that the approaches used were important, but failed to position the student as media producer or author. Goldfarb posited that media production was essential for involving students in actively producing knowledge with authority and agency. Effective learning is linked to the degree of a learner's active involvement in a task, and in terms of using and creating knowledge with new technologies, it is preferable for learners to search for information and then transform it into other forms, portrayals, or representations of understanding (Kimber & Wyatt-Smith, 2006). This involves both knowing what grounds the information is based on and being able to represent it in another medium or genre.

Additional educational research promoting the notion of or making a case for students as designers includes web site authoring (Jones, 2002-2003), computer supported intentional learning environments (Scardamalia & Bereiter, 1991), and multimedia design (Liu & Hsiao, 2001; Liu & Rutledge, 1996). In these examples, project based learning approaches, where classroom teaching and learning is designed to involve students in authentic or real-world problems to investigate, were used to consider a question or problem and create an artifact or product (Bloomenfeld et al., 1991). Responses to problems (i.e., the products) could represent related content or use learning to support decisions about the situation, depending on the nature of the undertaking. The

studies reported motivational and achievement effects, but they also had problems with implementation (e.g., time, logistics of computer access, technological problems) (e.g., Jones, 2002-2003) and sustaining motivation (e.g., Liu & Hsiao, 2001). Recommendations from hypermedia design research reported that access to required resources, as well as time taken for explicit instruction regarding the overall process and lots of practice were critical to the success of the project (Carver, Lehrer, Connell, & Erickson, 1992).

Project based learning approaches have been used since the 1960's and while valued and perceived to be effective, their use has not been widely adopted. Bloomenfeld et al. (1991) attributed this to a lack of understanding of student motivation and perspective, teacher knowledge and commitment, and the complexity of classroom organization. They suggested that innovation in curriculum and instruction requires attention to: curricular content and organization, psychological factors associated with learners (e.g., individual and developmental differences, motivational orientation, cognitive strategies, and metacognition), and professional practice issues of teachers (e.g., teacher efficacy, opportunities for professional development with colleagues, organizational time and support for teacher reflection). The authors also noted the potential of educational technology tools to aid in addressing their recommendations.

Creating changes in learning environments using educational technology led Goldman (2004) to investigate how digital video ethnographies (i.e., video use in the intervention, analysis, and presentation of research results) of learning cultures might become a vehicle for that transformation. She was also interested in how roles changed in these new cultures as perspectives were shared. The author concluded that through the

process of the study, the roles of teachers, researchers, and students shifted and changed to create more equity amongst them. She attributed this to the technology and the methods used, which she viewed as a vehicle for change in that it made space for diverse viewpoints and perspectives within the curricular framework.

Reflection and self-reflection is integral to the process of creating videos where each phase requires metacognitive processes of thinking and making decisions about the thinking that has gone on before (Reid, et al., 2002; Theodosakis, 2001). Thinking about your thinking to improve your thinking is key in transference of learning (Flavell, Miller & Miller, 1993). Student generated video production has also been used as a method to promote self-reflection (Schuck & Kearney, 2004; Valkanova & Watts, 2007). For seven and eight year olds, self-reflective learning and the construction of science knowledge were enhanced by video creation about personal learning experiences (Valkanova & Watts).

Reflection was seen to be essential in work with young people involved in practical video and media production in Britain (Buckingham, et al., 1995). This research group considered some of the difficulties and complexities of classroom practice in six case studies that focused specifically on questions about targeting of media audiences, genre, audience, representation, and the institutional context of popular music. The authors identified three key themes that emerged from their analyses, which they suggested might point the way towards a practical theory of teaching and learning in media education: social dimensions of media learning, skill acquisition and media language learning, and the role of production in developing conceptual understanding of both content and process. These ideas were related to issues of power, written language,

and the relationship to critical analysis of media. Concerns included typical assignments, sequencing of activities and developmental progression, difficulties and resistance to reflection, and the role of teachers. They concluded with three points to guide the development of practical media making:

- Practical work has to provide students with *genuine* opportunities to develop their own insights and theories.
- Practical work must be recursive.
- Reflection is a central and indispensable aspect of practical work. (p. 226)

In their case studies, Buckingham et al. referred frequently to student lack of interest or interest in other aspects of the assignments or media work. Though they wrote of developing student insights, the authors did not explicitly refer to student interest or motivation in their recommendations for practical media making.

Evaluation studies of digital video production in schools.

Practical video production has been used across a broad range of curricular areas for many purposes. In an evaluation study of fifty schools participating in a digital video pilot project in the United Kingdom, Reid et al. (2002) sought to gather evidence on the impact of digital video use on student engagement and behavior as well as to identify models for effective practice. The authors found that integrating digital video into teaching and learning promoted a wide range of learning styles, stimulated the development of other skills (e.g., problem solving, negotiation, thinking, reasoning and risk-taking), motivated a wider range of students than traditional teaching methods, and increased student engagement with the curriculum.

Schuck and Kearney (2004) also found that student video making enhanced pedagogy in the area of student engagement and autonomy. They examined the nature of learning outcomes and pedagogical approaches in the Australian K-12 context using five case studies of classes engaged in student video production. Four categories of findings were reported: teacher rationales for use of student-generated digital video, the role of the school and other contextual factors, learning outcomes of student-generated digital video tasks, and pedagogical approaches. Student motivation was identified as a reason to have students make videos and as a learning outcome. Observations from teachers and researchers yielded the following list of characteristics related to student engagement in activities:

> Students were on-task and motivated;
>
> 'reluctant learners' were generally engaged by student-generated digital video;
>
> these projects were perceived by students as different from other classroom work;
>
> a high level of choice and control was observed;
>
> clear ownership and opportunity to project students' own personalities was evident;
>
> there was evidence that motivation to learn about the topic grew from the digital video task (p. 9).

Specific details or support for these observations were not included in the report. For example, it is not clear what "evidence of learning about the topic growing from the digital video task" was.

Beltramo (2008) noted a lack of empirical work on student motivation and the use of digital video production. He used a case study approach to investigate the motivational effects of using video production technologies with at-risk middle school math students. Students made videos about a math application problem related to a career in mathematics. They were interviewed and given pre- and post- tests of motivational strategy use. Though the quantitative results were not significant, the author concluded that overall, the process of video making had made a difference to many students interviewed who indicated that they had been motivated by the project. Further findings were that they valued the research, thought it was worthwhile, learned the importance of education and the role that math plays in people's daily lives, and that technology could make learning easier and fun.

Although one of Beltramo's rationales for his study and design as well as critiques of other studies was the anecdotal nature of research results, he chose to report and make conclusions based on anecdotal data. He attributed the lack of significance in statistical results to the time of year in which the study was conducted as well as not having enough time. An examination of the questionnaire indicated to me that the lack might also have been related to the measurement instrument and research design as well as the sample size. The author administered a test of motivational strategies for learning before and after the digital video production process to his own class of 28 at-risk grade 8 math students, hypothesizing that there would be a change in motivation. There was no reported instruction or discussion of cognitive and motivational strategies that one might use in producing videos, although participants were required to write in reflective

journals with responses to writing prompts about their own interest, skills, and strategy usage at the beginning and end of the project.

Norton and Hathaway (2010) analyzed teachers' reflections for evidence of content learning, what worked, and what challenges they faced in their K-12 classrooms where they used video production as an instructional strategy. It comprised part of their requirements for a graduate degree program integrating technology in schools. The authors found positive content learning outcomes, motivated and engaged students, alternative assessment use, and teacher identity shifts as well as issues with equipment, logistics, and time. Though the issues are recurring items (Beltramo, 2008; Jones, 2002-2003), the teachers in the study did not see them as barriers to using video production in the classroom, rather as something to anticipate and plan for, which is also one of the study recommendations for school structure and environment. Clear descriptions and examples of what student engagement and motivation looked like observationally were provided.

Other research and articles on student produced video were exploratory in nature and focused on use of literacy strategies (Bruce, 2008), participatory styles (Beaty, 2003), uses and combinations of technology (Erstad, Oystein, & de Lange, 2007; Peppler & Kafai, 2007) to make meaning (Ranker, 2008), to communicate with other cultures (de Block & Rydin, 2006), and to map out skills, knowledge and understandings developed through the process (Marsh, 2006; Potter, 2005).

Additionally, there were numerous accounts and reports of video production use in the classroom with students (Lund, 1998) and student-teachers (Hernandez-Ramos, 2007). Many of these were written by teachers interested or willing to share their

experience using and integrating video production technology in their classes (Stansberry & Schwarz, 2003). Some gave practical advice and instructions for introducing video production into the classroom (Davidson, 2004; Sweeder, 2007).

Summary

Self-determination theory is a metatheory that organizes, integrates, and makes sense of human motivation and personality. From active and integrated to inactive and alienated, self-determination theory encapsulates a range of developmental outcomes (e.g., regulation, motivation) and describes them in terms of social and environmental conditions. Teachers can provide support for student autonomy and relatedness by the way they behave and interact with them in the classroom, which they can structure in ways that support competence as well.

In school health education class, support for self-determination could fit with cognitive-based, decision-making, behavior change, and social change philosophies. Self-determination could aid in both overcoming barriers to effective school health education and increasing effectiveness. Studies grounded in self-determination theory put a practical face on how the classroom might operate. Media use and production in school health education class might provide an avenue for self-determining student learning and perhaps behavioral change. Ryan and Deci (2002) write that

> …to integrate the regulation of a behavior, people must grasp its meaning for themselves personally, and they must synthesize that meaning with other aspects of their psychic make-up. This type of engagement with the activity and with the process of internalization is most likely to occur when people experience a sense of choice, volition, and freedom from

> external demands. Accordingly, autonomy support is the basis for people's actively transforming a value and regulation into their own. (p. 20)

Active participation in one's learning is key to creating and making videos in educational contexts. Research literature on video production in school health education classes or school health education where video production was used was not found.

Motivation is often cited as both rationale for and result of video making processes (Asthana, 2006; Beltramo, 2008; Reid, et al., 2002; Schuck & Kearney, 2004). Intuitively, it makes sense that creating videos and working with technology motivates students. Researchers found motivation and engagement to be key finding in studies of student generated video and media production. They used the term motivation, claimed evidence for changes in motivation, yet have not clearly defined the term motivation.

Research studies of student video production used small samples and in many cases, drew from specialized populations (Beltramo, 2008; Liu & Rutledge, 1996; McCluskey, et al., 2004; Riecken, Tanaka, et al., 2006). Larger samples drawn from regular public school populations would enable generalization of research results. Funding for some research evaluation reports came from technology equipment companies (e.g., Apple, Nokia). Independent research would increase the potential for unbiased results. Funding for out of school projects is limited and frequently has specific requirements. Schools can provide the ideal location for student video production across the curriculum. Media making incorporated and infused into school curricula can be both feasible and practical.

While the reviewed literature indicates several possible directions for research on student video production in schools, this research focuses on participatory video

processes in relation to school health education. Making videos in school health education classrooms is intended to provide a learning environment that supports student needs for autonomy, competence, and relatedness. Reeve's (2002) synthesis found that student autonomy has a positive influence on academic achievement, perceived competence, emotionality, self-worth, preference for optimal challenge, perceptions of control, creativity, and retention. Ryan and Deci (2000) found greater feelings of autonomy and enhanced intrinsic motivation when in classrooms where teachers supported autonomy by offering choice, acknowledging feelings and providing opportunities for self direction. In this study I will argue that video making necessarily involves a high degree of student autonomy and therefore an opportunity to increase intrinsic motivation as well as promoting the learning and development of various skills and competencies (e.g., time management, problem solving, video making).

CHAPTER 3: METHODOLOGY

The following research questions and hypotheses are grounded in the intersections of self-determination theory, school health education, and video production research. They are informed and shaped by the literature reviewed (Mertens, 2005), researcher experience, and the practicalities of the research.

Research Questions

Effects of Video Making in Health Education Class

What effects does creating videos on a topic of interest to grade 10/11 health education students have on motivation, self determination and relatedness in health education class?

Hypothesis 1.

If students in grade 10/11 health education (planning) class create videos on a health-related topic that interests them, they will have higher levels of intrinsic motivation at the end of the video making process.

Video Making Process

Are some phases of video making more intrinsically motivating than others?

Hypothesis 2.

Students in grade 10/11 health education (planning) class creating videos on a health-related topic that interests them will have higher levels of intrinsic motivation for production and post-production phases of video production than for pre-production activities.

Research Design

A pragmatic approach was used to consider the effects of a video making intervention on grade 10/11 health education students. The design was intended to facilitate the development of an explanation of how different factors influenced events within the context of high school health education class. The nature of reality in a pragmatic approach is that what is useful determines what is true. Effectiveness is the standard for assessing worth (Mertens, 2005). The researcher makes decisions about research relationships, which are dictated by what is considered appropriate for the study. Methods are matched to specific questions and purposes of the research. They may include quantitative and/or qualitative methods. For example, Lee, Cheng, and St Leger (2005) took a pragmatic approach to develop and implement an evaluation framework for evaluating health promoting schools by using an existing program, the Hong Kong Healthy Schools Award Scheme (HKHSA), to focus on key areas relating to health promoting school aims. Biesta (2010) as well as Tashakkori and Teddlie (1998) further detail underlying beliefs of pragmatism, stating that they include a belief that inquiry is full or loaded with values, that facts are full of theory, that reality is multiple and constructed, that knowledge is not perfect, and that many theories can explain a set of data or information. Their emphasis is on the importance and value of understanding and improving the human condition as well as on the communication of results to inform decisions. Ultimately, the research question dictates or drives the choice of appropriate methods to seek understanding. This study sought to explicate how a video making process intervention might influence student's intrinsic motivation in school health education class.

A quasi-experimental design using mixed methods was used. The design across groups was used to examine changes in motivation, self determination, and relatedness following the implementation of a video making process intervention in four different health education classes at three different schools at different times. Two classes at two schools made videos prior to the winter break, while two classes (wait list) at the third school made videos the following January. The order for receiving the video making intervention was determined by what was convenient for teachers as well as availability of equipment within each school.

Two Academic Motivation for Going to School questionnaires (Vallerand et al., 1992) were administered, one prior to the start of the research and the other once all classes had completed their video making projects. Three health education class questionnaires were administered for each class, either pre- post- post- intervention (Classes 1 and 2) or pre- pre- post- intervention (Classes 3 and 4). Questionnaires for directly before and directly after the video making intervention were used for the analyses to maximize the number of complete data sets. Video making questionnaires were administered at three times during the intervention following each phase of the process and included pre-production, production, and post-production.

Rationale for Video Making Intervention

Self-determination theory research has demonstrated with students and teachers in school settings that providing support for student self-determination had positive learning and behavioral outcomes (Reeve, 2002; Reeve, Hamm, & Nix, 2003). This study assumes that integrating video making or production into the curriculum will promote content learning, learning and development of a variety of skills, and motivation.

The task of producing a video in the intervention design of the process was intended to provide support for autonomy in terms of locus of causality or control, volition, and choice. The structure and design of the intervention in grade 10/11 health education classes was intended to support the development of competence. The nature of the task intervention where students worked with peers, teachers, and community members was intended to support the development of relatedness. It aimed to address ongoing barriers from the literature reviewed (Kann, et al., 2001) of involving and demonstrating the value of health education to parents, school board members, teachers, school administrators, and other community members Additionally, it encompassed factors associated with demonstrating success in health education programs by involving the target population in determining their own needs and taking responsibility for their own learning of what was relevant and important to them. The intervention design also established linkages among program goals, objectives, and outcomes. Furthermore, program implementation was monitored and incorporated into the video making process intervention.

Video Making Intervention

The video making intervention took place over three weeks (15 school days). One week for each phase of the process was allocated, though there was overlap.

During the first week, students learned about and planned their video productions. Large and small group discussions and activities helped focus on key elements of pre-production and enabled them to choose a topic, develop and write a concept, storyboard and write shot lists for their proposed video. They were free to choose any topic related to health. General topics stemmed from Planning 10 health education Ministry Prescribed

Learning Outcomes, which included physical activity, nutrition, substance use/misuse, and road related risk reduction and injury prevention. Students chose a genre (documentary, dramatization, music (original), and instructional) for their video based on their target audience and purpose. Research suggested that up to four choices is optimal and that more could become overwhelming (Patall, Cooper, & Robinson, 2008). Students were encouraged to make choices based on their own interests (i.e., meaningful and relevant).

The second week was devoted to production activities. Students learned technical video camera skills as well as lighting and sound techniques. They videotaped the footage required and made or collected all necessary sounds, music, graphics, and images identified in their storyboards and shot lists. They reviewed and logged all footage to prepare for the editing portion of the post-production phase of video making.

In the final post-production week, students learned about and how to edit using basic computer editing programs (e.g., iMovie or MovieMaker). They downloaded video footage from the cameras. Using their storyboards, students put together a rough cut of their video for sharing and discussion with the class. Based on peer and instructor feedback, final productions were created for a public screening at the end of the week. Group 1 had a few days to incorporate feedback. This did not happen for several reasons. Some video groups in Group 2 had one day. Groups 3 and 4 had no peer evaluation feedback and only completed rough cuts of their videos for presentation. While students were encouraged to invite friends, family and community members to come to a presentation and viewing of the videos, it did not end up happening. The principal at one school did attend part of group 3 and 4's rough cut presentations.

Equipment requirements included video cameras, tripods, and computers with video editing capabilities. In addition to school equipment, the researcher brought six additional video cameras and 6 -10 tripods from the university curriculum laboratory for student use. Two laptops with video editing capabilities were made available. Some students also used their own laptops and equipment at school and home.

Sample

The sample came from the population of grade 10 and 11 Canadian students taking a B.C. Provincial government mandated Planning course with a specified health component. The lower Vancouver Island region and southern Gulf Islands further delineated the geographical area. School administrators and/or teachers who the researcher either knew, or was familiar with, were contacted for initial expressions of interest. Schools with similar student population characteristics (i.e., size, socio-economic status) identified by the administrators were also approached. The research required a commitment and level of trust by school administrators and teachers that the researcher believed could influence willingness to participate. The researcher was required to be in the classroom teaching for three weeks and needed full cooperation and trust from all involved. For these reasons, networking and personal connections were used to identify potential research sites.

Six Planning 10 classes of 25 – 30 students each at four different secondary schools were involved in the overall study. Two were involved in the pilot study conducted in May/June 2009 and four in the main study conducted between November 2009 and January 2010. 101 students made videos in the main study. 67 complete sets of data were used in the analyses.

Indicators and Measures

The natural school setting is a complex social context with diverse perspectives. To capture some of this complexity, eight data sources were examined:

- student questionnaires
- student video presentations
- student videos
- peer video evaluations
- student reflections
- teacher interviews
- video evaluations and records
- researcher field notes and observations.

The questionnaire used to measure motivation in health education class was a modified version of the Situational Intrinsic Motivation Scale (SIMS) (Guay, Vallerand, & Blanchard, 2000). It is a 16 item self-report questionnaire designed to assess situational or in the moment motivation for an activity or task. It is a multidimensional measure that specifically assesses intrinsic motivation, identified regulation, external regulation, and amotivation. Guay et al. developed and validated the scale in a series of five studies in which they found it to be made up of four internally consistent factors. Correlations with other constructs (e.g., self-determination, perceived competence, behavioral intentions) supported the construct validity of the scale, as did the authors finding that intraindividual changes in motivation were detected on some subscales.

Situational motivation is differentiated from contextual and global motivation (Ntoumanis & Blaymires, 2003; Vallerand & Ratelle, 2002). The modified situational

motivation scale was chosen to capture students' in-the-moment motivation for health education class. The rationale for this choice was that responses would take into account the video making intervention in the class and reflect changes resulting from the experience. The academic motivation scale (Ratelle, Guay, Vallerand, Larose, & Senecal, 2007; Vallerand, Guay, & Fortier, 1997; Vallerand, et al., 1992) was also considered, but items were thought to be too general to capture the classroom context. This scale was used to measure student academic motivation for going to school (See Appendix 1).

The instructions/directions were adapted from the SIMS questionnaire as follows:

- Why do you go to health education class?
- Please rate the following statements about health education class in general.
- Please comment on any aspects of health education class that you find particularly motivating and/or unmotivating.
- The word "activity" was replaced by "health education" or "class" in the response items.

Intrinsic motivation items included:

- Because I think health education is interesting.
- Because I think that this class is pleasant.
- Because this class is fun.
- Because I feel good when I go to this class.

Students responded using a 7-point Likert scale in which 1 equals "Corresponds not at all," 3 equals "Corresponds somewhat," and 7 equals "Corresponds exactly" (See Appendix 2 for complete Health Education class questionnaire).

Self-determination was measured using a 12 item self-report questionnaire (Reeve, 2002) encompassing three qualities: internal perceived locus of causality, volition, and perception of choice (see Appendix 2 for questionnaire). The questionnaire items were developed from previously validated questionnaires as well as from pilot testing and a variation was used to test models of the experience of self-determination in intrinsic motivation (Reeve, et al., 2003). It is designed to assess the perceived experience of self-determination.

Relatedness was measured using two items from SDT literature, which were added to self determination questionnaires for both video making (three phases) and health education class (pre and post-video making intervention). They were (a) It makes me feel closer to the other students; and (b) The different activities make me feel more connected to other students. Appendices 2- 5 show video making and health education class questionnaires including these items.

Each video group made a presentation of their video to the class, which the researcher videotaped and transcribed. Students were asked to include specific information about their topic and video that would indicate student motivation type. These included open-ended questions that used key words from SDT literature (Guay, et al., 2000; Ryan & Deci, 2002) such as, why they chose the health topic, what their personal interest in it was, and how it relates to health. As well, students were asked to report what their role in the project was, who the intended audience for the video was, and something that interested or surprised them about the video making project.

Student videos were examined for connections to health education prescribed learning outcomes and items from video evaluation criteria. As well, video

genre/approach, topic, and student stated interests were related to intrinsic motivation concepts. For example, one group of boys chose to do a video about street hockey because it is fun and they wanted to share their enjoyment of the game. Their genre choice was instructional to demonstrate how easy it is to play and have fun while getting physical activity.

Individuals, groups, peer groups, and teachers completed video evaluations either at the rough cut session or after the final or rough cut was presented. In addition to rating (scale of 1(low) – 4 (high)) 16 items, students were asked to comment on the following:

- What techniques did you like?
- What techniques didn't you like?
- What was your favorite part of the video?
- Other.

The teacher of Group 1 developed a set of reflection questions (See Appendix 6), which students from groups 1, 3 and 4 completed. They included seven questions about expectations, surprises, effectiveness, topic understanding, difficult/satisfying experiences, personal contribution, and learning from disappointments/successes.

Teacher interview questions stemmed from the student reflection questions (See Appendix 7). Researcher field notes were used to add questions and consolidate conversations regarding student learning, health education, motivation, assessment, and feasibility. All four teachers were interviewed after the video projects were completed in their classrooms.

Daybook, journal, and field note entries by the teacher and researcher were examined for information regarding the video production process. Observations relating to implementation, autonomy support, and teaching strategies were inspected.

Data Collection Procedures

The researcher and collaborating teachers collected all data. Self-report questionnaires were administered on paper at the direction of the researcher and/or collaborating teacher three times for each class. Student videos, project work (e.g., proposal, storyboard, shot list, evaluation), and reflections as well as researcher and teacher field notes, daybook entries, attendance records, grades, and related artifacts were collected upon completion during class time. The researcher videotaped student presentations and teacher interviews, which were conducted after the final video projects were presented and assessed between January and April 2010 at the teacher's convenience.

Pilot Testing

Pilot testing was conducted in May and June of 2009 in the school year preceding the main study. The purpose was threefold: (a) to access Victoria secondary schools, administrators and Planning 10 teachers with the hope of engaging them for the main study in the fall of 2009; (b) to do a trial run-through of the video making process intervention in Planning 10 classes for the proposed three week time period; and (c) to test the questionnaire items with grade 10 and 11 students.

In terms of accessing the schools, administrators and planning 10 teachers, the pilot was successful. Two classes of Planning 10 students and their teachers at two different high schools participated. However, only half of the students in each class

volunteered and brought in written consent to take part in the research portion of the study.

Two classes of 27 students participated in the video making process. Fifty students in small groups completed a total of 16 complete (plus 1 partial) videos. Two students from each class did not make videos, as they were not in attendance for the majority of the time. Two more from one class partially completed their video, but ran out of time. Both classes had twelve days of researcher/ instructional interaction. Overall time spent was 15 hours in one class and 16.5 hours in the other. This included presentation days. The pilot showed that the timeframe of three weeks is feasible. Based on this experience, recommendations were made to streamline and optimize the video making process in the classroom.

The researcher reviewed the project, the research, and the participant consent forms with both classes. Twenty-nine students brought in signed written consent forms (14 from one class and 15 from the other). These students completed four different questionnaires over the course of the video making process (motivation for going to school, motivation and self determination for three phases of video making). Overall, the range of responses to questionnaire items appeared to reflect what students in the classroom were experiencing.

Data Analysis Procedures

Mixed methods were used to analyze data from the main study. Survey responses (Likert scale from 1 to 7) were analyzed statistically, while the survey comments, presentations, evaluations, videos, reflections, teacher interviews, and field notes were analyzed thematically.

Statistical Analyses

Data from all students completing questionnaires were entered into a statistical software program (SPSS) and visually checked for missing variables and unusual values. Where feasible, missing data were replaced using imputation, specifically the strategy of intention to treat. The last case participants had completed was input into the next time period. This conservative approach assumed no change. No additions were made to video process questionnaire data as the activities were quite different and no assumptions regarding change were made. Only complete data sets for all three contexts were used in the analyses (N = 67).

Descriptive statistics were conducted to look at means, ranges, standard deviation, distributions and correlations for motivation, self determination, and relatedness variables. Distribution graphs were produced of each variable to check for fit to assumptions. Mean scores of each type of motivation, self determination, and relatedness for each of the four groups were calculated, graphed and examined visually. Normality, homogeneity of variance, correlations and scale reliability tests were conducted on motivation, self determination, and relatedness scales for each questionnaire and time period.

When significant differences were found in variable distribution (violating assumption of normality), standard transformations were tried. Both log 10 and square root transformations were applied to video making process variables. Square root transformations were most successful in improving normality issues, however not consistently with the result that other variables became significantly not normal in their distribution (e.g., with square root transformation of preproduction phase variables,

external, amotivation, and relatedness were significantly not normally distributed. Without the transformation, only intrinsic was not normally distributed. In both scenarios, there were no problems with assumption for homogeneity of variance.) Since the variables needed to be compared with each other, it was not possible to perform transformations on just some of the variables. Homogeneity of variance assumptions were met for all variables across classes. In addition, as mentioned previously, MANOVA test statistics are quite robust to violations of multivariate normality. No transformed variables were used in statistical tests examining differences in types of motivation, self determination, and relatedness or phases of video making. Where assumptions of normality or homogeneity of variance were violated, notes of the problems were identified in results interpretation and conclusions drawn.

Effects of video making in health education class.

Multivariate analysis of variance (MANOVA) tests were used to consider multiple theoretically connected dependent variables. Specifically, types of motivation, regulated motivation, and lack of motivation thought to operate along a continuum (Ryan & Deci, 2000; 2002). Tests were conducted to consider differences between the types of motivation (intrinsic motivation, identified and external regulation, and amotivation) as well as possible changes from the beginning of the study to the end (i.e., pre- and post-video making project intervention). This was accomplished with a series of MANOVAs using several combinations of within subject factors (time (pre-intervention, post-intervention) and type (intrinsic, identified, external, amotivation, self determination, relatedness) and between subjects factors (class, gender, first language, autonomy) to examine these differences.

Video making process.

Multivariate analysis of variance (MANOVA) tests were used to consider multiple theoretically connected dependent variables. Specifically, types of motivation, regulated motivation, and lack of motivation thought to operate along a continuum as well as measures influencing motivation including self determination and relatedness (Ryan & Deci, 2000; 2002). Tests were conducted to consider differences between the types of motivation (intrinsic motivation, identified and external regulation, and amotivation), self determination, and relatedness as well as possible changes in any of these measures between the phases of the video making process (i.e., pre-production, production, and post-production). Self determination was further broken down into aspects of choice, volition, and locus of control to examine possible differences in ratings between the subscales for the different phases of video making. This was accomplished with a series of MANOVAs using several combinations of within subject factors (phase of video making (pre-production, production, post-production) and type (intrinsic, identified, external, amotivation, self determination, relatedness) and between subjects factors (class, gender, language) to examine these differences.

Academic motivation for going to school.

Multivariate analysis of variance (MANOVA) tests were used to consider multiple theoretically connected dependent variables. Specifically, types of motivation, regulated motivation, and lack of motivation thought to operate along a continuum (Ryan & Deci, 2000; 2002). Tests were conducted to consider differences between the types of motivation (intrinsic motivation, identified and external regulation, and amotivation) as

well as possible changes from the beginning of the study to the end (i.e., pre- and post-video making project intervention). This was accomplished with two separate repeated measures MANOVAs, one where type of motivation was the within subject factor (included pre and post measures) to examine differences between the types, and another where time of test was the within subject factor (included intrinsic, identified, external, and amotivation measures). Introjected regulation of motivation was dropped as it was not part of health education or video making questionnaires and not a focus of the research. Between subjects factors tested were grouping variables of class (1, 2, 3, and 4, at 3 different schools), gender (male, female), and language (native English, English as a second language).

Thematic Analyses

Thematic content analysis of the data followed several steps: transcribing the data (i.e., interview, presentation) into a verbatim transcript; reading and re-reading the transcript; listing and refining tentative categories; grouping data under categories and revising when necessary; writing thematic statements; assigning a descriptive code to each thematic statement that reflected the meaning of that theme; and comparing findings for patterns, differences, and unique happenings. Initial analysis yielded thematic content that emerged through this reflexive process (Tesch, 1990). A second round of analysis used key words from SDT literature (e.g., Ryan & Deci, 2002) such as autonomy, competence, and relatedness as well as language from the Situational Intrinsic Motivation Scale (Guay, et al., 2000) including for example, interest, fun, pleasure, and feeling good as indicators of intrinsic motivation.

Following statistical analyses, data were reexamined for differences in motivation, self determination, and relatedness that might be connected to student classrooms, gender, first language, and autonomy. For example, video groups were examined for gender make-up, which were then linked to student health video topic choices and purposes of the video as well as treatment or approach to the topic. As well as the street hockey video, which was made by a group of boys, another group of boys chose lifelong physical activity that focused on the game of golf as their topic. They also wanted to share their love of a sport and their enjoyment of it. They dealt with problems arising from their videotaping schedule (e.g., golf course was closed when they wanted to use it), realized how much footage they actually needed to get their message across, and had a lot of fun learning how to edit their video, which they wrote about in their reflections. This kind of information was used to help explain and expand quantitative findings.

Student video presentations.

Student video groups made a presentation of their video to the class, which the researcher videotaped and transcribed. Transcripts were examined for different types of motivation (intrinsic, extrinsic (identified and external regulation of motivation), amotivation), aspects of self determination (locus of causality, choice, volition), and relatedness. For example, 5 students claimed to have no interest in their topic. This was taken as amotivation. Another student said that she wanted to know what would happen if we drank too much alcohol just once (as opposed to long term effects) because she claimed that we all drink. This was understood as a personal connection and interest in the topic (i.e., intrinsic motivation). There was also a degree of identified motivation in

her comment about everyone drinking with the suggestion that it would be of interest to others as well.

Student videos.

Student videos (along with video proposals and storyboards) were examined for types of motivation, aspects of self determination, and relatedness. These were considered in terms of the following categories; choice of topic, intended purpose, intended audience, approach to and treatment of chosen health topic.

Student video evaluations.

Evaluations that were available (i.e., completed) were examined for types of motivation and aspects of self determination. Comparisons to student videos and categories from student video analyses were also done to add and refine tentative categories. For example, two students made a video on crystal meth with the stated purpose of wanting to understand why teenagers would do this drug. They did a question and answer documentary style video that included graphic still images. Their evaluations were scrutinized for evidence of achieving their stated purpose, which was taken to be intrinsically motivated. What they ended up doing was more a description of the horrible effects of using crystal meth rather than any attempt to find out why people do it. They were, however, pleased with what they did accomplish. While they did not accomplish their intended purpose, they claimed to have learned about some of the effects of crystal meth (health knowledge) as well as how to use video taping and editing equipment (competence, life skills). Evaluations indicated that they had developed video competencies and that they were able to get a message about the dangers of crystal meth across very clearly.

Student video questionnaire comments.

Comments were transcribed onto a spreadsheet and examined for types of motivation, aspects of self determination, and relatedness. Comparisons were made to other data source analyses.

Student reflections.

Comments were transcribed onto a spreadsheet and examined for types of motivation, aspects of self determination, and relatedness. Comparisons were made to other data source analyses.

Teacher interviews.

Interviews were transcribed onto a spreadsheet and examined for types of motivation, aspects of self determination, and relatedness. Comparisons were made with other data source analyses.

Researcher field notes.

Ongoing observations were made throughout the study. The researcher was in each of six classrooms (two in the pilot and four in the main study) for a minimum of three weeks each. Observations and notes were examined for connections with motivation, self determination, and relatedness in the contexts of video making, health education class, and school. Initially, they were used to complement categories and themes that emerged from the initial analysis of qualitative data. They were then drawn on to further explain revised refined themes that reflected the data analyses in terms of motivation, self determination, and relatedness. In addition, field notes were used to

expand and explain social and environmental factors that influenced student work and behaviour while they made videos in high school health education class.

Limitations of the Study

In this section, factors influencing both internal and external validity are related to the research. Limitations of the study are discussed.

Quantitative limitations

Campbell and Stanley (1963) identified twelve factors that jeopardize the validity of experimental and quasi-experimental research designs. History, maturation, testing, instrumentation, statistical regression, selection bias, mortality, and selection-maturation interactions may affect the internal validity of the study. Interaction effects of testing, interaction of selection biases, reactions to arrangements, and multiple treatment interference may affect the external validity or generalizability of the study.

Specific events that may occur between the measurements were addressed in the study by having repeated measures across all four groups. The wait list condition acted as a control for historical effects as did the sample size (4 classes of approximately 30 students each). Institutional events such as graduation and end of the year celebrations were ongoing at all three schools over the three month duration of the study.

Processes within the participants changing over time or maturation were addressed by the wait list condition and sample size. Students were expected to experience similar maturation processes over the duration of the study.

Similarly, the effect of testing may have influenced results. Given that this design called for repeated measurements, this factor required careful attention. Establishing multiple baselines prior to the intervention addresses this issue, however, the situation did

not permit this to actually happen. In addition, situational motivation measures are designed to assess a feeling and perception for a given task or activity at that time. Since the activities changed within the intervention, it was anticipated that the responses reflected a reaction to the changing nature of the tasks rather than the test item itself.

Changes in instrumentation were not an issue in the research as all students were responding to the same tests. Likewise, statistical regression was not a concern, as groups were not selected on the basis of their scores.

Although students and classes may have differed initially, it was not a major concern in the research because the questions were not based on group selection comparisons. What was of interest was whether there were changes in intrinsic motivation that can be attributed to the intervention.

Attendance records were used to identify and address issues of participant loss or mortality. Data for students who completed all testing sessions was used. To account for inconsistent attendance and missing questionnaires, only sets of complete data were used.

Interaction between group selection and maturation, history, or testing was not a threat to validity in the research because comparisons were based on factors unrelated to selection. Any interaction effects were assumed to affect all participants.

Factors that effected external validity of concern in the research were the possibility of reactive or interaction effect of testing and multiple treatment interference. Participants were asked to respond to the same questionnaire items six times over a period of three weeks (only three were used). They were encouraged to answer in response to the specific situation and context that they were in at the moment, but it is possible that results may not be representative. Though the treatment or intervention was

video production, the students also experienced and received autonomy support from the instructor, which may or may not be what they were accustomed to. Research has found autonomy support to be linked to increased intrinsic motivation (Mandigo, Holt, Anderson, & Sheppard, 2008; Vansteenkiste, Simons, Lens, Deci, & Sheldon, 2004). It may be difficult to differentiate between the video making intervention and the autonomy support, though again, questionnaire items were specific and participants were encouraged to respond accordingly.

Work using the situational measures of intrinsic motivation has been laboratory situated experimental research with very specific short-term interventions (e.g., puzzle to solve). How student participants respond to a complex intervention in a naturalistic setting where there were many potential confounders (e.g., whatever else was going on in student lives) is not known. Novelty was identified from some comments and responses about previous video or similar projects in school or outside of school from questionnaires, presentations, and field notes. Given that novelty is used in definitions of intrinsic motivation, this was not considered a problem.

Qualitative limitations

Teddlie and Tashakkori (2009) reviewed four criteria for trustworthiness in qualitative research, which were introduced in 1985 by Lincoln and Guba and include credibility, transferability, dependability, and confirmability. They outlined six strategies to help determine data trustworthiness that include prolonged engagement, persistent observation, use of triangulation techniques, member checks, thick descriptions, and reflexive journaling.

Prolonged engagement refers to the amount of time spent in the research environment. In this study, the researcher was in the classrooms as a co-teacher and instructor for the video making intervention. This entailed a minimum of three solid weeks plus classroom visits both before and after the video making intervention. She had adequate time to build trust and get to know the participants so as to become aware of student perspectives in the classroom context.

The amount of time spent in the classrooms also helped address the strategy of persistent observation. This enabled the researcher to identify social and environmental factors relevant to the research questions.

Triangulation techniques were used with data sources and methods.

Weekly and sometimes daily check-ins were done with each teacher to ensure the smooth running of the video making project. During and after class time was also used to clarify plans and discuss observations and issues. Final video project evaluations were done together in two of the classes. The other two teachers made modifications to the criteria and submitted final grades. Pilot study results were reviewed with the two teachers involved and their input was incorporated into the main project suggestions and recommendations. There was no opportunity for member checks of study findings with teachers or students in the main study as the researcher had health issues that culminated in a lengthy medical leave.

Observations and field notes were made throughout the study. Reflexive journaling was done around the completion of each phase of video making for the classes as well as during the analysis phase when making sense of the findings.

The fact that the researcher was involved as an instructor for the video making was also a source of potential bias. Age, gender, race, interest, experience and other instructor characteristics sometimes arise as causal variables even when treatments themselves do not. This also applies to the differences in classroom groupings as there were four different regular teachers, each of whom had their own set of individual characteristics. Along with researcher bias and teacher differences, the complex nature of the classroom setting was a key limitation in the study. Missing (e.g., one teacher did not have time to have students write reflections) and incomplete data (e.g., students did not answer all questions in their presentations) were limiting factors.

CHAPTER 4: RESULTS

Results are presented in three sections: pre-analyses data screening, numerical questionnaire data analysis, and narrative data analysis. They are further delineated by primary and secondary research outcomes related to research questions and hypotheses.

Pre-Analyses Data Screening

Health Education Class Questionnaire Data

Descriptive statistics, histograms and box plots indicated some departures from normality for health education class dependent variables. Kolmogorov-Smirnov normality tests revealed non-significant results for 5 of 12 variables measured. Significant differences were found for identified regulation ratings both pre-intervention, $D(67) = .11$, $p < .05$, and post-intervention, $D(67) = .11$, $p < .05$; for post-intervention amotivation ratings, $D(67) = .13$, $p < .05$; and for relatedness ratings both pre-intervention, $D(67) = .13$, $p < .01$, and post-intervention, $D(67) = .14$, $p < .01$. Z scores of skewness for variables with significant violations to normality were acceptable at < 2 (Field, 2005). Reliability tests of health education class scales had acceptable ranges of Chronbach's alphas (Field, 2005). Table 1 summarizes means, standard deviations, normal distribution (significant/not significant) and homogeneity of variance (significant/not significant) significance tests for all health education class variables.

Table 1. Summary of means, standard deviation, normality and homogeneity significance tests for health education class variables.

	Total n=67		Class 1 n=14		Class 2 n=16	Class 3 n=21	Class 4 n=16
Variables	Mean (SD)	Normality	Mean (SD)	Homogeneity	Mean (SD)	Mean (SD)	Mean (SD)
Pre intrinsic	3.00 (1.14)		2.66 (0.76)		2.97 (1.23)	3.04 (1.25)	3.29 (1.19)
Post intrinsic	3.17 (1.17)		3.33 (0.98)		2.91 (1.13)	2.85 (1.20)	3.73 (1.20)
Pre identified	3.69 (1.20)	Significant	3.20 (1.03)		3.64 (1.24)	3.68 (1.25)	4.19 (1.12)
Post identified	3.69 (1.31)	Significant	3.68 (0.78)		3.22 (1.31)	3.50 (1.36)	4.44 (1.39)
Pre external	4.90 (1.35)		5.50 (1.25)		5.31 (1.38)	4.64 (1.24)	4.32 (1.32)
Post external	5.07 (1.28)		5.34 (0.92)	Significant	5.50 (1.08)	4.76 (1.67)	4.81 (1.03)
Pre amotivation	3.20 (1.13)		3.48 (1.06)		3.19 (1.22)	3.25 (1.09)	2.89 (1.18)
Post amotivation	3.61 (1.31)	Significant	4.01 (1.02)		3.11 (1.11)	3.86 (1.58)	3.44 (1.24)
Pre relatedness	3.43 (1.54)	Significant	3.21 (1.05)	Significant	3.50 (1.93)	3.57 (1.66)	3.38 (1.41)
Post relatedness	3.49 (1.46)	Significant	3.64 (1.08)		3.50 (1.75)	3.38 (1.63)	3.50 (1.32)
Pre self determination	3.76 (0.83)		3.26 (0.55)		3.92 (0.90)	3.80 (0.98)	3.96 (0.59)
Post self determination	3.53 (1.08)		3.19 (0.97)	Significant	3.45 (0.99)	3.37 (1.32)	4.10 (0.70)

Correlations

Correlations among the dependent variables revealed several significant relationships. Pre-intervention measures of intrinsic and identified regulation of motivation were correlated to all other pre-intervention measures. Post-intervention intrinsic motivation and identified regulation of motivation were likewise correlated to all other post-intervention measures in health education class (see Table 2).

Video Making Process Questionnaire Data

Descriptive statistics, histograms and box plots indicated some departures from normality for video making phase dependent variables. Kolmogorov-Smirnov normality tests revealed non-significant results for 12 of the variables. Significant differences were found for intrinsic motivation ratings both for pre-production, $D(67) = .11$, $p < .05$, and post-production ratings, $D(67) = .11$, $p < .05$; for identified motivation ratings for production, $D(67) = .12$, $p < .05$; for external regulation ratings for post-production, $D(67) = .11$, $p < .05$; for amotivation ratings for production, $D(67) = .13$, $p < .05$; and for relatedness ratings for production, $D(67) = .13$, $p < .05$ (see Table 3 for summary of video making process variables). Z scores of skewness for variables with significant violations to normality were acceptable at < 2 (Field, 2005). Reliability tests of video making scales had acceptable ranges of Chronbach's alphas (Field, 2005) for pre-production (.739 to .841), production (.712 to .831), and post-production video making activities (.751 to .893).

Table 2. Correlations among pre- and post-intervention health education class variables.

	Pre Intrinsic	Pre Identified	Pre External	Pre Amotivation	Pre Self Determination	Pre Relatedness	Post Intrinsic	Post Identified	Post External	Post Amotivation	Post Self Determination	Post Relatedness
Pre Intrinsic	_____											
Pre Identified	.747	_____										
Pre External	-.422	-.402	_____									
Pre Amotivation	-.367	-.491	.445	_____								
Pre Self Determination	.474	.462	-.175	-.347	_____							
Pre Relatedness	.511	.446	-.276	-.030	.271	_____						
Post Intrinsic	.290	.333	-.245	-.262	.282	.136	_____					
Post Identified	.302	.434	-.260	-.326	.360	.116	.770	_____				
Post External	-.308	-.313	.550	.252	-.152	-.162	-.399	-.430	_____			
Post Amotivation	-.139	-.249	.171	.500	-.187	.168	-.265	-.294	.156	_____		
Post Self Determination	.106	.208	-.175	-.379	.516	-.065	.657	.611	-.306	-.357	_____	
Post Relatedness	.318	.288	-.370	-.120	.121	.450	.390	.281	-.375	.019	.124	_____

** $p < 0.01$ level.

* $p < 0.05$ level.

Table 3. Summary of means, standard deviations, normality and homogeneity significance tests for video making variables.

	Total n=67		Class 1 n=14		Class 2 n=16	Class 3 n=21	Class 4 n=16
Variables	Mean (SD)	Normality	Mean (SD)	Homogeneity	Mean (SD)	Mean (SD)	Mean (SD)
Pre-production intrinsic	3.07 (1.24)	Significant	2.89 (1.00)		3.36 (1.10)	2.71 (1.54)	3.41 (1.04)
Production intrinsic	3.23 (1.22)		3.32 (1.08)		3.11 (1.36)	3.21 (1.37)	3.30 (1.10)
Post-production intrinsic	3.41 (1.31)	Significant	3.29 (1.05)		3.23 (1.31)	3.20 (1.42)	3.95 (1.35)
Pre-production identified	2.94 (1.04)		2.54 (0.88)		2.95 (0.86)	3.02 (1.23)	3.19 (1.02)
Production identified	3.19 (1.11)	Significant	3.32 (0.97)		3.00 (1.21)	3.18 (1.26)	3.30 (0.98)
Post-production identified	3.22 (1.21)		2.95 (0.88)		2.86 (1.14)	3.05 (1.21)	4.05 (1.25)

Pre-production external	5.15 (1.15)		5.61 (1.10)		5.34 (0.94)	5.07 (1.32)	4.64 (1.04)
Production external	5.10 (1.16)		5.23 (1.11)		5.55 (0.97)	4.87 (1.36)	4.84 (1.04)
Post-production external	5.15 (1.19)	Significant	5.20 (1.03)		5.08 (1.11)	5.46 (1.40)	4.78 (1.09)
Pre-production amotivation	3.85 (1.33)		4.57 (0.98)		3.45 (1.15)	3.95 (1.63)	3.47 (1.10)
Production amotivation	3.93 (1.22)	Significant	3.54 (1.14)		3.77 (1.09)	4.08 (1.51)	3.64 (0.99)
Post-production amotivation	4.03 (1.41)		4.57 (0.86)	Significant	3.83 (1.89)	4.01 (1.52)	3.78 (1.07)

Pre-production self determination	3.36 (1.00)		3.09 (0.99)		3.48 (1.09)	3.46 (1.10)	3.34 (0.79)
Production self determination	3.55 (0.95)		3.25 (1.15)		3.43 (0.98)	3.63 (0.97)	3.81 (0.70)
Post-production self determination	3.63 (1.02)		3.00 (1.02)		3.74 (0.66)	3.54 (1.11)	4.17 (0.95)
Pre-production relatedness	3.11 (1.45)		3.04 (1.23)		3.09 (1.53)	3.14 (1.69)	3.16 (1.34)
Production relatedness	3.43 (1.50)	Significant	3.25 (1.28)		3.28 (1.52)	3.50 (1.73)	3.63 (1.44)
Post-production relatedness	3.53 (1.60)		3.25 (1.07)	Significant	3.63 (1.74)	3.52 (1.92)	3.66 (1.50)

Correlations

Correlations between the dependent variables revealed several significant relationships. Measures of motivation, self determination, and relatedness correlations for video making process variables can be seen in Table 4.

Academic Motivation for Going to School Questionnaire Data

Descriptive statistics, histograms and box plots indicated some skewedness and departures from normality. Kolmogorov-Smirnov tests revealed non-significant results for intrinsic, identified, and pre- intervention external regulation of motivation, but significant differences for post- intervention external regulation of motivation scores, ($D(67) = .11$, $p < .05$), pre amotivation scores, $D(67) = .19$, $p < .001$, and post amotivation scores, $D(67) = .16$, $p < .001$. Z scores of skewness for variables with significant violations to normality were acceptable at < 2 (Field, 2005). Reliability tests of academic motivation for going to school scales had acceptable ranges of Chronbach's alphas (Field, 2005) for both pre- (.724 to .893) and post- video making project intervention (.774 to .856).

Correlations between the dependent variables revealed several significant relationships. Intrinsic motivation was significantly correlated to identified regulation of motivation and negatively to amotivation. Identified regulation of motivation was significantly correlated to intrinsic, external regulation of motivation and negatively to amotivation.

Table 4. Correlations among pre-production, production, and post-production video making variables

	Pre-production Intrinsic	Production Intrinsic	Post-production Intrinsic	Pre-production Identified	Production Identified	Post-production Identified	Pre-production External	Production External	Post-production External	Pre-production Amotivation	Production Amotivation	Post-production Amotivation	Pre-productiion Relatedness	Production Relatedness	Post-production Relatedness	Pre-production Self Determination	Production Self Determination	Post-production Self Determination
Pre-production Intrinsic	———																	
Production Intrinsic	.540**	———																
Post-production Intrinsic	.485**	.543**																
Pre-production Identified	.599**	.511**	.272*	———														
Production Identified	.360**	.555**	.300*	.651**	———													
Post-production Identified	.417**	.495**	.656**	.491**	.591**	———												
Pre-production External	-.375**	-.257*	-.171	-.492**	-.308*	-.400**												
Production External	-.239	-.322**	-.082	-.483**	-.482**	-.306*	.640**	———										
Post-production External	-.282*	-.385**	-.395**	-.447**	-.395**	-.428**	.514**	.517**	———									
Pre-production Amotivation	-.384**	-.064	-.054	-.265*	-.043	-.019	.284*	.138	.224	———								
Production Amotivation	-.287*	-.270*	-.112	-.331**	-.310*	-.162	.314**	.399**	.324**	.678**	———							
Post-production Amotivation	-.218	-.225	-.435**	-.223	-.132	-.301*	.250*	.086	.513**	.549**	.611**	———						
Pre-production Relatedness	.427**	.321**	.236	.341**	.344**	.386**	-.374**	-.370**	-.313**	.014	-.071	-.009	———					
Production Relatedness	.257*	.467**	.392**	.318**	.335**	.456**	-.350**	-.330**	-.316**	-.024	-.112	-.168	.698**	———				
Post-production Relatedness	.197	.325**	.203	.239	.286*	.450**	-.361**	-.315**	-.348**	-.011	-.070	-.117	.592**	.705**	———			
Pre-production Self Determination	.468**	.293*	.235	.378**	.300*	.213	-.322**	-.382**	-.371**	-.293*	-.391**	-.336**	.342**	.242*	.136	———		
Production Self Determination	.401**	.514**	.455**	.370**	.474**	.439**	-.247*	-.414**	-.334**	-.364**	-.498**	-.373**	.113	.302*	.181	.585**	———	
Post-production Self Determination	.190	.333**	.438**	.265*	.359**	.522**	-.186	-.239	-.426**	-.228	-.384**	-.437**	.120	.258*	.319**	.497**	.655**	———

** $p < 0.01$ level.

* $p < 0.05$ level.

Main Statistical Analyses

Effects of Video Making in Health Education Class

Changes Across Time

No significant main effects of time were found for measures of intrinsic motivation, identified and external regulation of motivation, self determination or relatedness, indicating that no differences were found for pre- and post-intervention measures in health education class across time. There was a significant main effect of time for amotivation, $F(1, 65) = 7.54$, $r = .32$. The medium effect size (Pearson correlation coefficient where r is between .30 and .50) accounted for 9% of the variance in the sample (Field, 2005).

Influencing Factors

Classroom.

When class was input as a factor in the timeframe of the test, there were no significant main effects for class or for the interaction between time and class. This indicated that no differences were found for ratings from participants in four different classrooms from pre- to post-test as well as for the pattern of ratings for each of the measures of motivation, self determination, and relatedness.

Gender.

When gender was input as a factor in the timeframe of the test, there were no significant main effects for gender or for the interaction between time and gender. This indicated that no differences were found in ratings from males and females for pre- to

post-test ratings as well as for the pattern of ratings for each of the measures in health education class.

First language.

When language was input as a factor into the timeframe of the test, there was a significant main effect of language. Ratings of external regulation were significantly higher for native English speaking participants than for ESL speaking participants, $F(1, 65) = 6.96$, $r = .31$ (see Figure 1). Ratings of relatedness were significantly higher for ESL speaking participants than for native English speaking participants, $F(1, 65) = 4.43$, $r = .25$ (see Figure 2). There were no significant interaction effects, indicating that no differences were found in the pattern of ratings of measurement types between native English speakers and ESL speaking participants from pre- to post-video making in health education class.

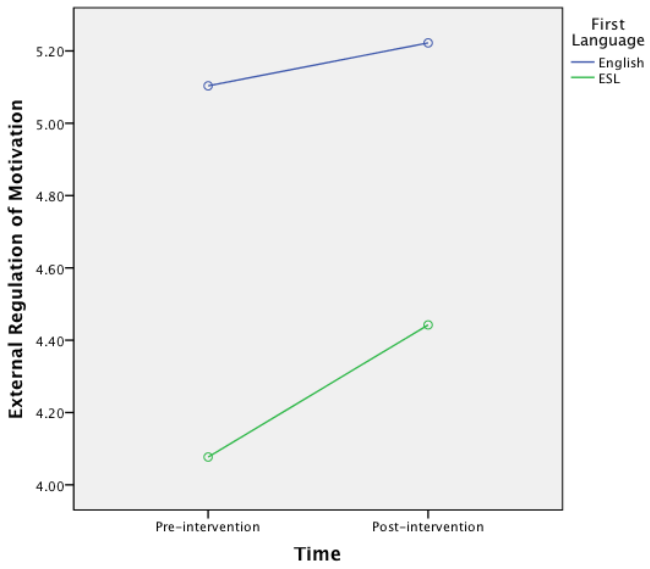

Figure 1. Graph of first language differences for ratings of external regulation of motivation in health education class over time.

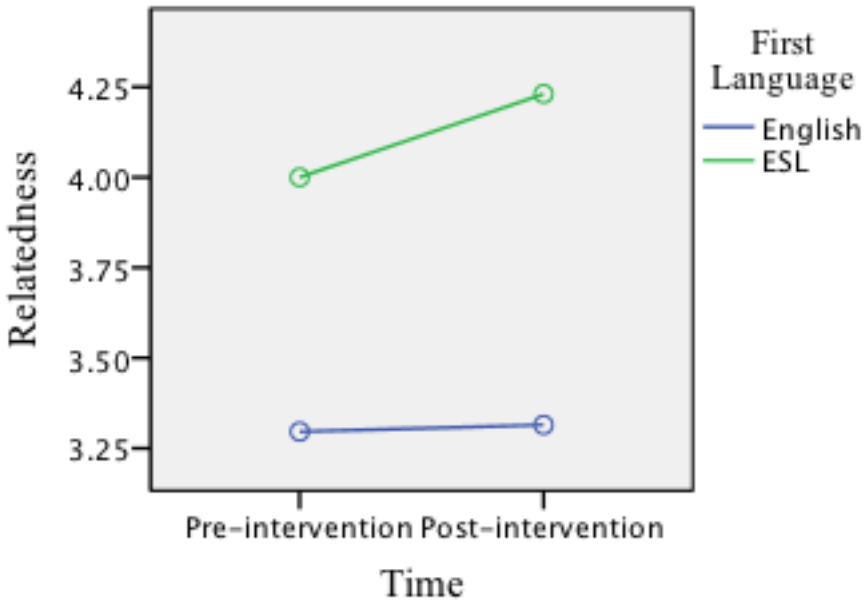

Figure 2. Graph of first language differences for ratings of relatedness in health education class over time.

Autonomy.

When autonomy (based on post-intervention self determination ratings) was input as a factor into the timeframe of the test, there was a significant main effect of autonomy for intrinsic motivation, identified regulation of motivation, and amotivation. Students with high autonomy had significantly higher ratings of intrinsic motivation than those with low autonomy, $F(1, 65) = 9.86$, $r = .36$. They also had significantly higher ratings of identified regulation of motivation, $F(1, 65) = 13.14$, $r = .41$. On the other hand, students with low autonomy had significantly higher ratings of amotivation than students with high autonomy, $F(1, 65) = 9.78$, $r = .36$. There was also a significant interaction effect between time and autonomy for intrinsic motivation and identified regulation of motivation. Contrasts revealed that for students with high autonomy, their ratings of post-

compared to pre-intervention intrinsic motivation increased, whereas students with low autonomy rated post-intrinsic motivation slightly lower than pre-intervention intrinsic motivation, $F(1, 65) = 9.86$, $r = .36$. Figure 3 shows the interaction between time and students with high versus low autonomy for intrinsic motivation in health education class. Similarly, highly autonomous students ratings of post-intervention identified regulation of motivation increased, whereas low autonomy students' ratings decreased; a significantly different pattern, $F(1, 65) = 13.14$, $r = .41$ (see Figure 4 for interaction graph).

Figure 3. Graph of interaction between time and autonomy for ratings of intrinsic motivation in health education class.

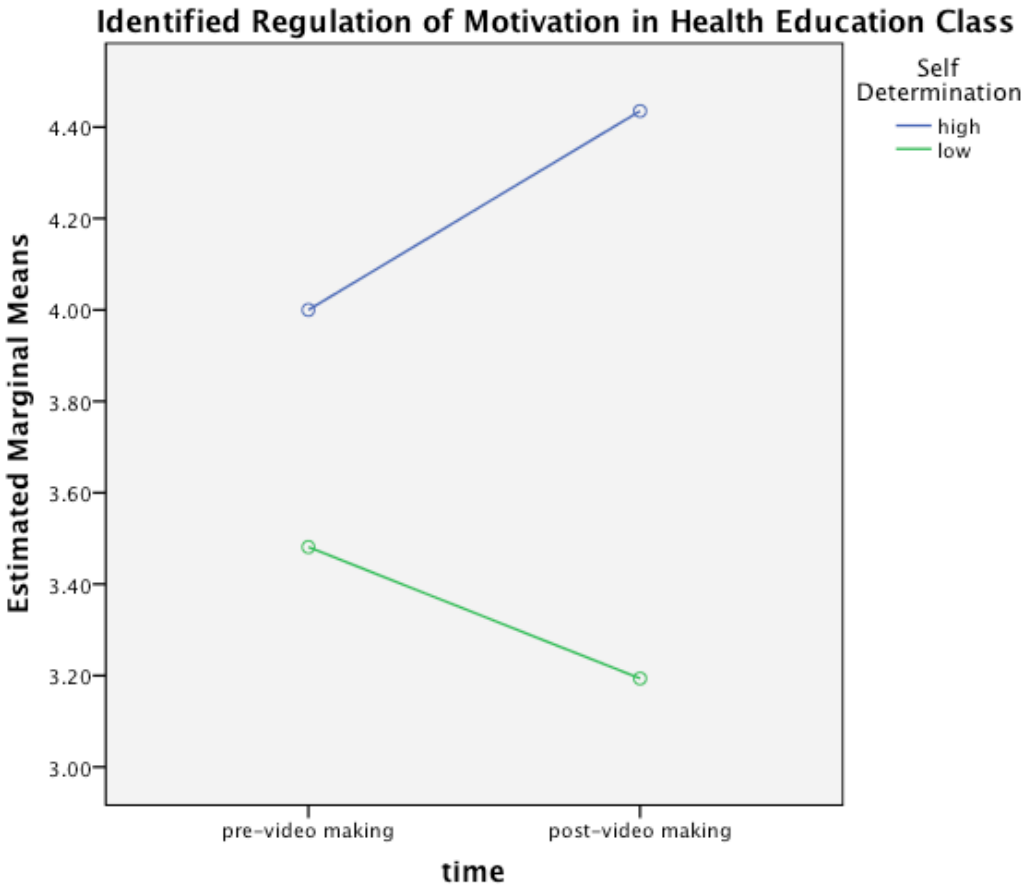

Figure 4. Graph of interaction between time and autonomy for ratings of identified regulation of motivation in health education class.

Aspects of self determination.

Further tests were run to examine aspects of self determination measured. Pre-video making intervention ratings were significantly different. Volition was rated significantly higher than choice, $F(1, 66) = 13.33$, $r = .41$, and locus of causality or control was rated significantly higher than choice, $F(1,66) = 6.17$, $r = .29$. There was no significant difference between volition and control. There were no significant differences in post- intervention volition, control, or choice, indicating that no differences were found

in ratings for all three aspects of self determination after the video making intervention. Figure 5 shows pre- and post-video making intervention mean ratings for three aspects of self determination in health education class. There was a significant main effect of time for both volition and locus of causality. Ratings of volition decreased significantly from pre- to post-video making in health education class, $F(1, 66) = 7.17$, $r = .31$. Locus of causality (control) also decreased significantly from pre- to post-video making in health education class, $F(1, 66) = 8.54$, $r = .34$.

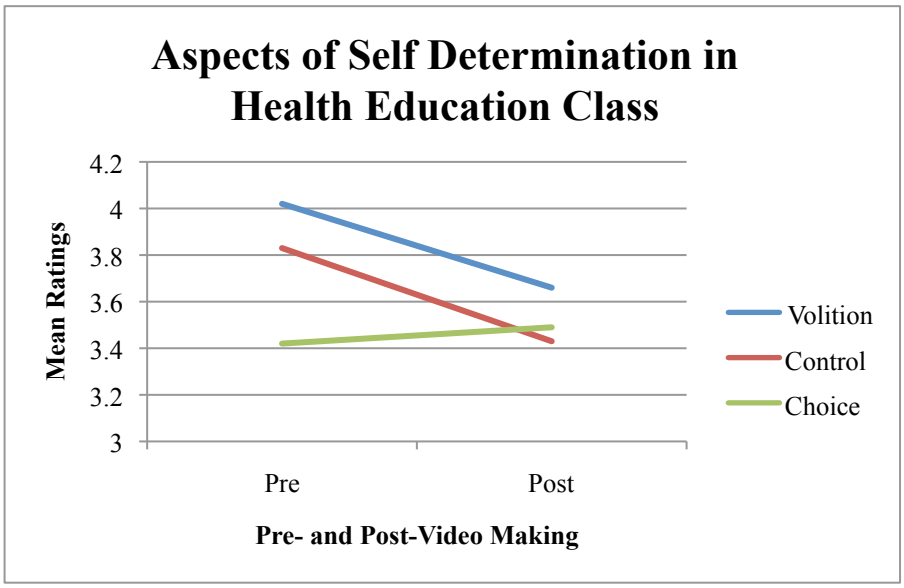

Figure 5. Graph of pre- and post-intervention mean ratings of aspects of self determination (volition, control, choice) in health education class.

Ratings of Motivation, Self Determination, and Relatedness

External regulation of motivation was rated significantly higher than all other measures for both pre- and post-intervention measures. Pre- and post-intervention ratings for other measures varied slightly.

For pre-intervention ratings, external regulation was significantly higher than self determination $F(1, 66) = 30.41$, $r = .56$. Large effect sizes (Pearson's correlation

coefficient of r = .50 and higher) accounted for 25% of the variance in the sample (Field, 2005). Self determination was significantly higher than amotivation, $F(1, 66) = 8.02$, r = .33, but not than identified or relatedness. Identified regulation of motivation was rated significantly higher than amotivation, $F(1, 66) = 4.03$, r = .24, but not than relatedness. Relatedness was not significantly different from amotivation, but was significantly higher than intrinsic motivation, $F(1, 66) = 6.65$, r = .30. There was no significant difference between amotivation and intrinsic motivation.

For post-intervention ratings, external regulation of motivation is significantly higher than identified regulation of motivation, $F(1, 66) = 26.63$, r = .54, and all other measures. Identified regulation was rated higher than intrinsic motivation, $F(1, 66) = 25.13$, r = .53, but no other measures. Self determination was rated significantly higher than intrinsic motivation, $F(1, 66) = 9.49$, r = .35, but not relatedness. Amotivation, relatedness, and intrinsic motivation were not rated significantly higher than any other measure. The levels for each type of measure are graphed in Figure 6 for pre- and post-video making mean student ratings in health education class.

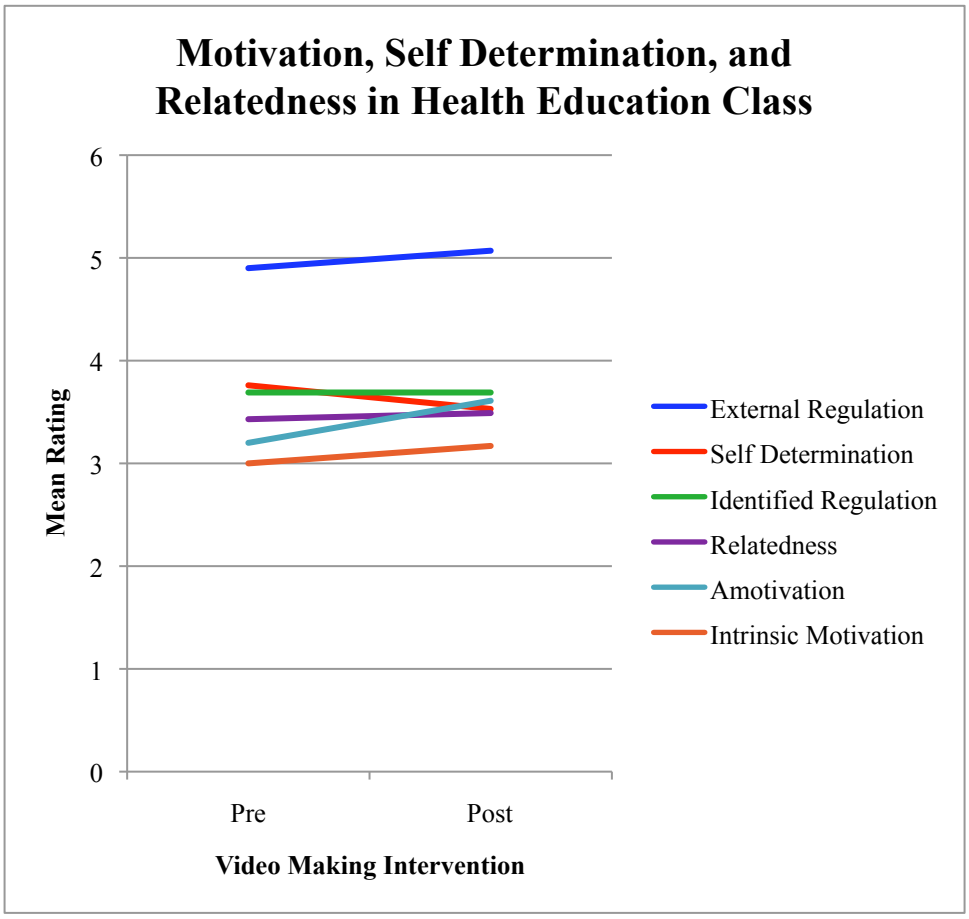

Figure 6. Graph of mean measures of pre- and post-video making intervention motivation, self determination and relatedness in health education class.

Video Making Process

Differences Between Phases

There was no significant main effect of phase for any of the measures of motivation, self determination, and relatedness. This indicated that no differences were found in ratings for pre-production, production, and post-production video making activities, $F(12, 256) = 1.72, p > .05$.

Influencing Factors

Gender.

When gender was input as a factor in the phase of video making, there was a significant main effect of gender. Male's ratings of intrinsic motivation were significantly higher than female's, $F(1, 65) = 5.36$, $r = .28$, but not for any other measures. Figure 7 graphs the relationship between male and female mean ratings of intrinsic motivation across three phases of video making activities. There was no main effect of phase, indicating that no difference was found in ratings from male and female participants for each phase of video making. There was also no significant main effect for the interaction between phase and gender, indicating that no difference was found in the pattern of ratings of measures of motivation, self determination, and relatedness in each phase of video making between males and females.

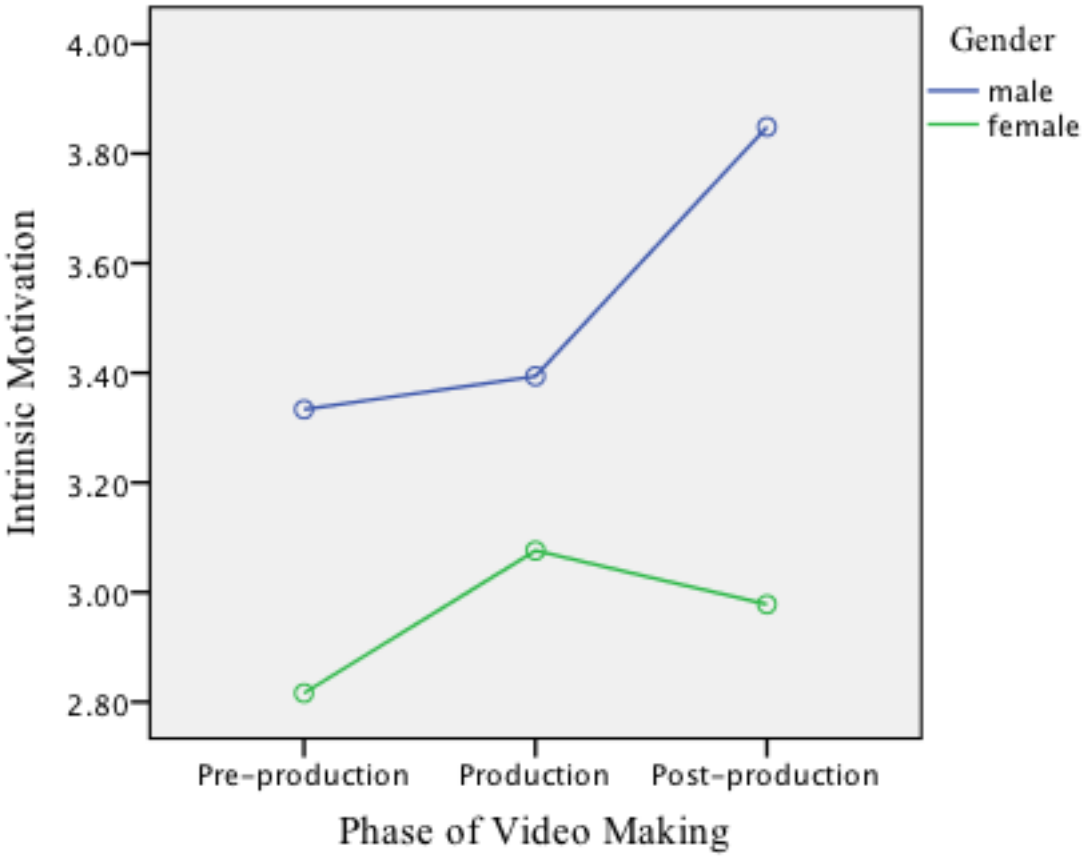

Figure 7. Graph of gender differences for mean ratings of intrinsic motivation in video making activities.

Classroom.

When class was input as a factor in the phase of video making, there were main effects for phase as well as for the interaction between phase and class, though not for class itself. Contrasts between phases revealed post-production activities were rated significantly higher than pre-production activities for intrinsic motivation, $F(1, 63) = 4.13$, $r = .25$, identified regulation of motivation, $F(1, 63) = 4.81$, $r = .27$, self determination, $F(1, 63) = 5.11$, $r = .27$, and relatedness, $F(1, 63) = 5.44$, $r = .28$.

Production activities were rated significantly higher than pre-production activities for identified regulation of motivation, $F(1, 63) = 4.93$, $r = .27$, and relatedness, $F(1, 63) = 6.18$, $r = .30$. Contrasts of the interaction between phase and class revealed significant differences for ratings of identified regulation between production and post-production activities, $F(3, 63) = 3.93$, $p < .05$. Figure 8 shows that while Classes 1, 2, and 3 have similar ratings for identified regulation of motivation, Class 4's rating are much higher for post-production activities. The interaction between phase and class for ratings of external regulation of motivation between production and post-production activities was significant, $F(3, 63) = 2.93$, $p < .05$. This interaction can be seen in Figure 9 where Classes 1 and 4 have similar ratings, Class 2 decreases, and Class 3 increases between production and post-production external regulation of motivation.

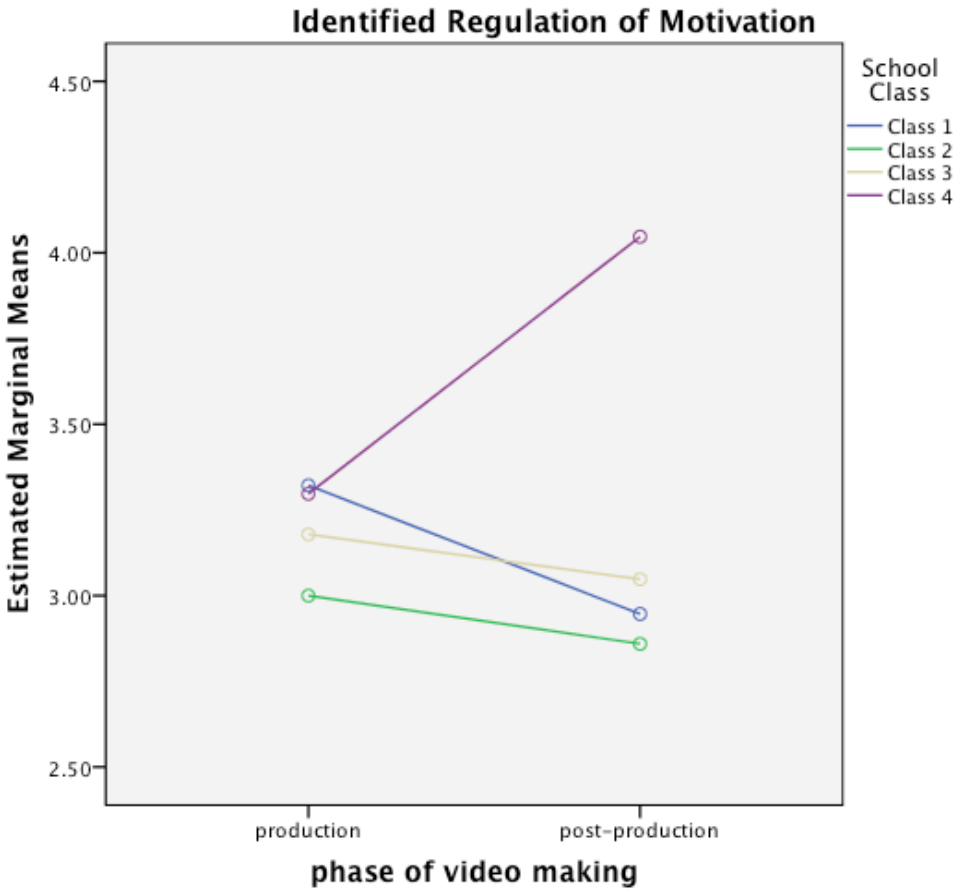

Figure 8 Graph of interaction between phases of video making and class for identified regulation.

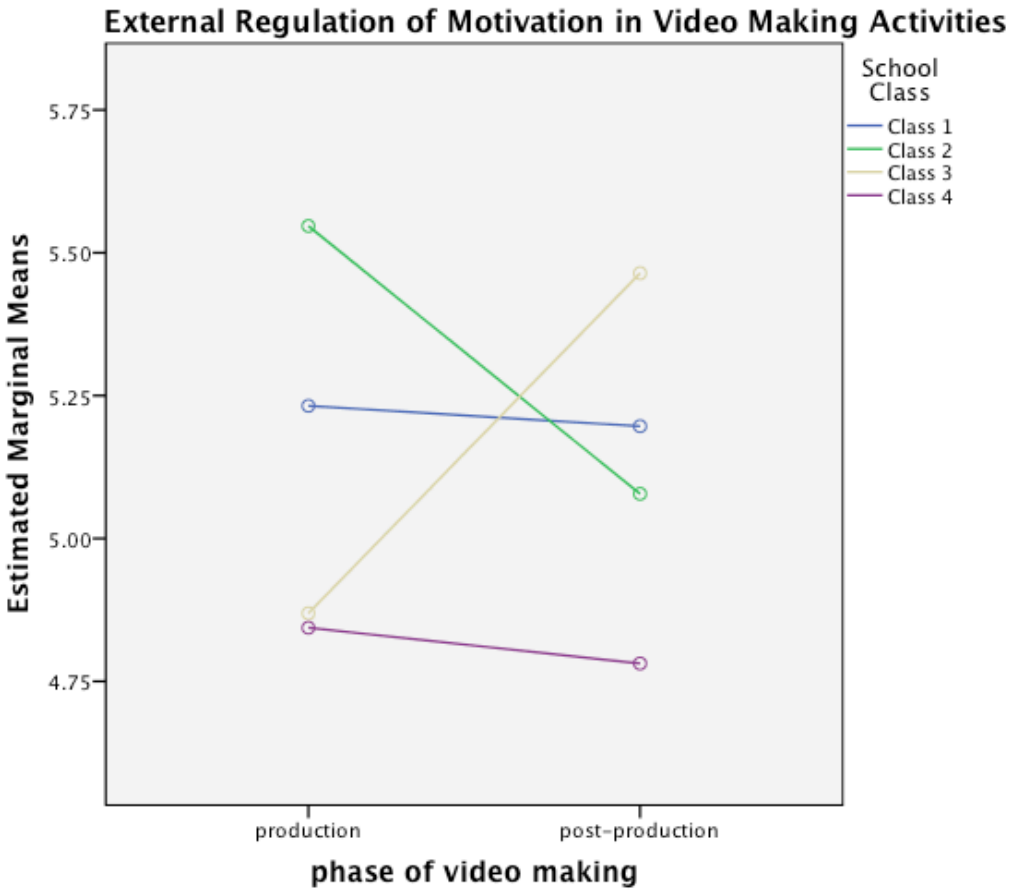

Figure 9. Graph of interaction between phases of video making and class for external regulation of motivation.

First language.

When language was input as a factor in the phase of video making, there was again a significant main effect of language. Ratings of external regulation were significantly higher for native English speaking participants than for ESL speaking participants, $F(1, 65) = 4.26$, $r = .25$. Ratings of relatedness were significantly higher for ESL speaking participants than for native English speaking participants, $F(1, 65) = 7.89$, $r = .33$. There were no significant main effects of phase or of the interaction between the

phase of video making and the language of the participant, indicating that no differences in ratings of change in levels of measurement types as well as the pattern of ratings of measurement types in different phases were found for native English speakers and ESL speaking participants.

Ratings of Motivation, Self Determination, and Relatedness

In pre-production, ratings of external regulation of motivation were the highest, with a mean of 5.10 (SD 1.12). This was significantly higher than ratings of amotivation, $F(1, 66) = 50.84$, $r = .66$, and all other reported measures. Amotivation was rated significantly higher than self determination in preproduction activities, $F(1,66) = 4.55$, $r = .25$, as well as relatedness, intrinsic, and identified regulation. Self determination was rated significantly higher than intrinsic motivation, $F(1,66) = 4.03$, $r = .24$, and identified regulation, $F(1,66) = 8.93$, $r = .35$, but not relatedness, indicating that no differences were found in ratings of self determination and relatedness for pre-production video making activities. There were no significant differences between ratings of relatedness, intrinsic motivation or identified regulation.

In the production phase of video making, ratings of external regulation were again, the highest, with a mean of 5.05 (SD 1.15). This was significantly higher than ratings of amotivation, $F(1, 66) = 54.12$, $r = .67$ and all other reported measures. Amotivation was rated significantly higher than relatedness in production activities, $F(1,66) = 4.04$, $r = .24$. Self determination ratings were significantly higher than intrinsic motivation, $F(1,66) = 5.48$, $r = .28$, and identified regulation, $F(1,66) = 7.30$, $r = .32$, but not for relatedness. There were no significant differences between relatedness, intrinsic motivation, and identified regulation, indicating that no differences were found for

ratings of relatedness, intrinsic motivation, and identified regulation in video making production activities.

In post-production, ratings of external regulation were the highest with a mean of 5.15 (SD 1.19). This was significantly higher than ratings of amotivation, $F(1, 66) = 49.95$, $r = .66$. Amotivation was rated significantly higher than both intrinsic motivation, $F(1,66) = 4.88$, $r = .26$, and identified regulation, $F(1,66) = 9.75$, $r = .36$, but not self determination or relatedness. Self determination was rated significantly higher than identified regulation, $F(1,66) = 9.06$, $r = .35$, but not relatedness or intrinsic motivation. Figure 10 graphs mean student ratings of six measures for each phase of video making.

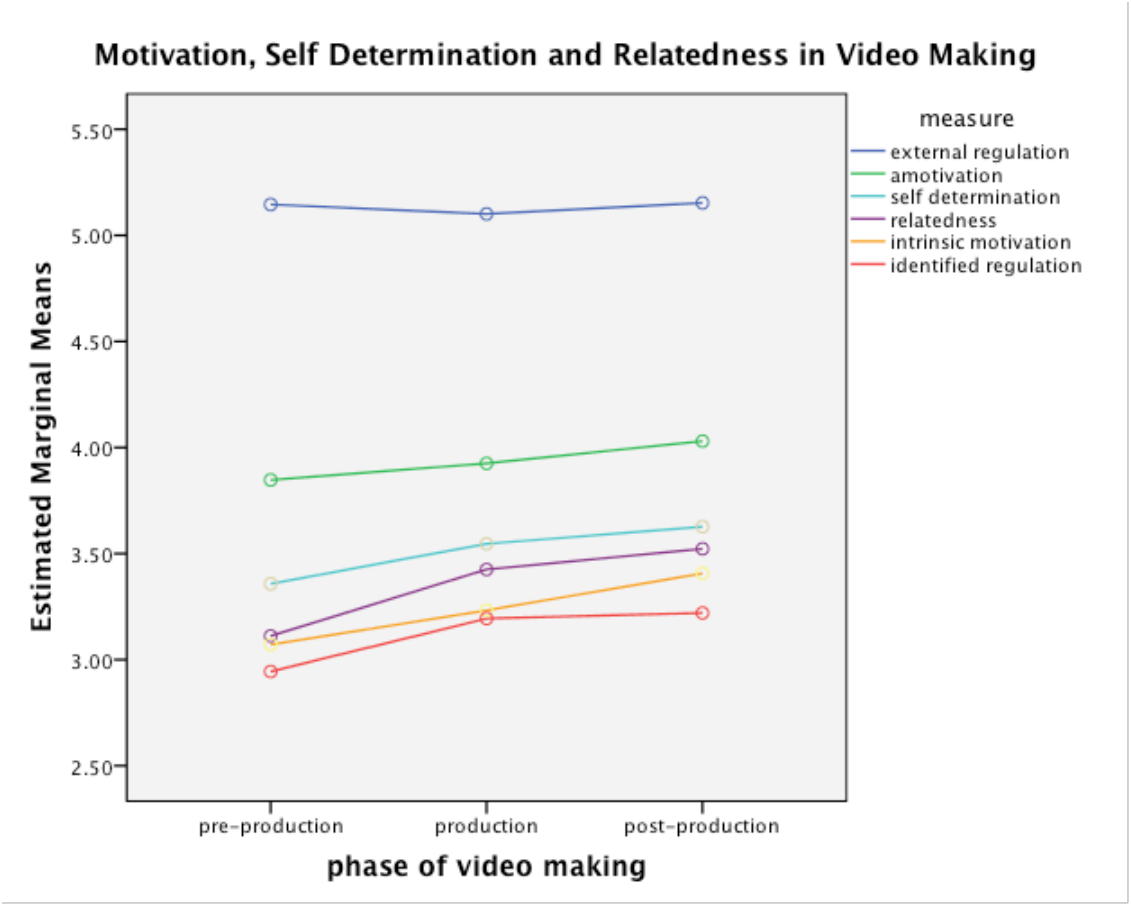

Figure 10 Graph of mean ratings for types of motivation, self determination, and relatedness in three phases of making videos.

Academic Motivation for Going to School

Changes Across Time

There was no significant main effect of time, $F(4, 63) = 2.17$, $p > .05$. This indicated that ratings of measures of academic motivation for going to school for pre- and post-video making intervention were in general the same.

Influencing Factors

There were no main effects of class, gender, or first language for pre-intervention and post-intervention measures of academic motivation for going to school. Mean ratings from participants in different classrooms, of different genders, and of different first languages, were in general the same.

Ratings of Motivation

There was a significant main effect of the type of regulated motivation for going to school in both pre- video intervention, $F(1.98, 130.21) = 141.72$, and post- video intervention, $F(2.13, 140.44) = 118.98$, expressed by participants. Contrasts revealed that external regulated motivation was rated significantly higher than identified regulation of motivation, pre- $F(1,66) = 23.65$, $r = .51$, and post- video intervention, $F(1,66) = 13.16$, $r = .41$. Identified regulation of motivation was rated significantly higher than intrinsic motivation, pre- $F(1,66) = 39.05$, $r = .61$, and post-video intervention, $F(1,66) = 34.74$, $r = .59$. Intrinsic motivation for going to school was rated significantly higher than amotivation, pre- $F(1,66) = 76.88$, $r = .73$, and post- video intervention, $F(1,66) = 69.92$, $r = .72$. Large effect sizes where Pearson's correlation coefficient $r = .50$ and higher

accounted for 25% of the variance in the sample whereas medium effect sizes between .30 and .50 accounted for 9% of the variance (Field, 2005).

Thematic Content Analyses of Data Sources

Video making took place within the context of health education class in a high school setting, thus necessitating some crossover in the reporting of results. They are presented in order of research question and hypotheses posed.

Effects of Video Making in Health Education Class

Motivation, Self Determination, and Relatedness

Prior to the start of the project, the general consensus from students and teachers was that school health education class was not considered interesting, motivating or important. Student participants attributed it to repetitive content, whereas teachers thought it had to do with adolescent development as well as value.

Two students commented (of four total) on the initial test survey about what aspects they found motivating or unmotivating about health education class. One Class 2 participant wrote that, "It really just seems like they tell us the same things year after year, and its [sic] boring." Another Class 3 participant wrote simply, "Not a fan". Teachers' observations of students in the four classrooms agreed with general consensus that health education was not highly valued or thought to be particularly motivating by students.

One teacher believed that her students' main motivation at this time in their lives was their social life. The teacher went on to say that in general, students did as much as they needed to do to satisfy their parents' academic expectations for them in return for

the freedom it allowed them in their social lives. This teacher understood her students to not be motivated intrinsically and to be potentially amotivated in their lack of interest for the course, as well as externally regulated by parental expectations in terms of their motivation for the course and school. She emphasized the social nature and priority of students' lives that she attributed to their developmental age.

Teachers in this study said that health education and the Planning course were important. They wanted their students involved in doing something different (i.e., making health research videos) that might have motivated them in health education class. One of the teachers talked about how students did not value the course, as it did not count for anything important to them:

> …it's not their lack of ability, it's their lack of caring about their grade in this course. I would say for the vast majority of kids, unless they're going to a specific university in the U.S. or unless they're applying for very specific scholarships, their entire G.P.A. [grade point average] will not be taken into account. This course is a very low priority for a lot of them. (Class 1 teacher interview)

The teachers wanted to infuse the course with engaging and potentially motivating opportunities for their students. They also expressed a desire to try something new themselves; to learn new skills, and contribute to research that gives us information about educating children. One teacher said that she liked to experiment and try new things, in part, to energize herself and to keep up her own motivation.

As students learned that they would be making videos on health topics of their choice in health education class, a variety of feelings were expressed. While many were

excited and looked forward to a fun, enjoyable, and entertaining time (i.e., intrinsically motivating), others expected the health video project to be dull, boring, and tedious (amotivating). A few had mixed feelings that seemed somewhat contradictory as evidenced by the following participant reflection:

> My expectations for this video project were varied; I was excited to do something different in class while at the same time I expected it to be a waste of time more than anything else. (Class 3 participant reflection)

All four teachers reiterated the notion that students were attracted by the novelty of the project. They also said that they found students excited about coming to class and working with their friends.

Students chose their own groups and participants wrote that they looked forward to the opportunity to work with their friends and to get to know people better. Teachers spoke of benefits their students gained from working in groups and experiencing real world challenges that doing so entailed. Participants expected to have fun and anticipated a pleasant time with their friends and classmates, even though there was a range of feelings about the project itself.

Teachers wanted to be involved with the health video project for both their students and themselves. In addition to having their students do something different, they looked forward to them learning new skills, working in small groups or teams, being engaged in something meaningful and showing what they had learned, and having fun.

Changes Across Time

There was a wide range of experiences in the course as well as with the project. At the end of the project, there were two (of three total) survey comments that indicated students' perceptions were unchanged in health education class:

> Many of the projects seem unnecessary and pointless. (Class 1 participant)
>
> Unmotivating, too stressful with so many projects. (Class 2 participant)

Data were not collected on other projects required in the course, although several students did have incomplete work to finish during the time allocated for making videos. Despite pilot study recommendations and discussion, teachers scheduled guest speakers, outside events, and extra research sessions at this time. Student intentions and motivations for their health video projects revealed both intrinsic and identified regulation of motivations in thematic analyses of students' choices of topic and rationales for making their health videos.

Health video topic choices.

A broad range of health topics were chosen for a wide variety of reasons by student researchers. Topics chosen covered many aspects of the health spectrum from nutrition and healthy eating to substance abuse and stress to chronic illness and physical activity. Both intrinsic and identified rationales were cited for their choices, which were diverse as illustrated by the following examples:

> We chose our topic because we wanted to know what would happen if you drink too much just once. (Class 2 participant presentation excerpt)
>
> I have asthma myself. (Class 3 participant presentation excerpt)

> We chose this topic because we thought we could play with it and make a crazy video out of it. (Class 1 participant presentation excerpt)
>
> Our topic is suicide and we chose it because it is a serious health issue that most people should be aware of. (Class 4 participant presentation excerpt)

Students chose topics that interested them, were personally relevant, and fun. They also chose topics that they thought were important and/or common to teenagers.

Both specific and general information was sought. For example, one group wanted to know what kind of diseases came from trans fats. Several video groups wanted to know more about specific drugs (i.e., crystal meth, acid, LSD). Others simply wanted to find out more about their topic (e.g., stress, teen recreation, sleep deprivation, hypnotism).

Some students chose topics that were closer to their own lives, that they could identify with and that had personal relevance. One group interviewed a member's father about depression. Another chose to find out more about asthma because one of their members had asthma.

Several topics were chosen because they were fun to play (e.g., hockey), might be fun to explore (e.g., hypnotism), and were fun to play with in a video (e.g., hallucinations caused by sleep deprivation). Humorous approaches to video topics were used to appeal to the viewer. One group chose to highlight diet and fitness misinformation with funny footage of their wannabe fit person. Another showed a group of boys staying up all night playing video games.

> The expectations I had for the video project would be that it would be a fun, enjoyable way to learn more about the important topic of health. (Class 1 participant reflection)

As the above example suggests, students expected the process to be interesting and enjoyable. Though some did not have high expectations, they found that as they progressed through the project, they enjoyed it. For some, the experience was not as pleasant, while a few others changed their minds.

Five students in Class 4 said they had no interest in the topic. One said that their interest changed over time as they found out more information.

> I personally wasn't that interested when we started, but as we got going, it got more and more interesting to learn about new facts about bed health and how you keep your back healthy and everything. (Class 4 participant presentation excerpt)

Another had the opposite type of shift as indicated by the following statement:

> When I first heard we got to do a video, I was excited. I was really looking forward to it. But once time started becoming an issue, my enjoyment and excitement became non-existent. (Class 3 participant reflection)

From having high initial intrinsic interest and motivation, this participant went to having none, and attributed it to environmental factors (i.e., time), which likely also influenced self determination as well as other types of motivation (e.g., external).

Health video purpose.

Teachers in different classrooms used the health video project for different purposes in their classrooms and their students had a variety of purposes in producing

them. Student experiences of interest, pleasure, enjoyment, and overall satisfaction with their health videos were also varied.

The video was intended to be one that entailed research relating in some way to health. Three of the four classes used the project as a culminating activity at the end of the semester. Class 1 used it as a door opener to health topics that were followed up on later in the year. That teacher said that if she were to do it again, she would have students do some research prior to introducing the video as she felt that they got caught up in the video making and were reluctant to do much research.

The intended purpose of both the video and the making of the video were tied to the reasons students chose their topics and what interested them about the topic. Several groups identified concern for the wellbeing of others as a reason for their choice (e.g., H1N1, suicide, stress, short term effects of drinking alcohol). A slightly different perspective was given by one of the international student participants who believed that teenagers were very important to their country; he wanted to understand what crystal meth was and why teenagers would take it when it kills so many of them.

Part of the concern for others extended to a desire to share information with them so they are introduced, become informed, and possibly helped by the videos. Students hoped that the work they did might influence and help others. One example of this came from a group who made a video on teen dating violence:

> Three kids, including me, could of made a difference to at least one person in the world if they saw our video and they were getting abuse by their partner. (Class 3 participant presentation excerpt)

Another video group in Class 1 wanted to share their own knowledge of physical activity and exercise with other people. One participant said that though she did not really learn anything new about the topic, she did learn to articulate it to others by making the video, which she was not able to do before. Two video groups really wanted to share their own enjoyment of games that they played (i.e., golf, hockey). The teacher was not certain that her students learned new health information, which she talked about in the following interview excerpt:

> I'm not sure if it motivated them to learn about the topic, but it motivated them to get the final product done in a way that their classmates would approve of, or that they could be proud of, (pause) because it's so public. (Class 1 teacher)

The final product, the video itself, was important to students. Although the processes of researching health topics, and making videos that reflected and incorporated that research was emphasized, both students and teachers spoke and wrote about the final video product. The quality of the product was specifically de-emphasized when it became very clear that there was not enough time, yet it was something students particularly focused on. Some were pleased and surprised with how their video turned out, some were disappointed, and some were just glad to get it done.

Influencing Factors

Structural environmental factors including technical equipment and project timeframe emerged as key themes affecting motivation, self determination, and relatedness. Social factors that influenced student ratings of measures were life skills such as time management, social communication, and problem solving.

Technical and equipment.

All classes experienced technical challenges that impacted and likely detracted from the enjoyment of the process and the class. These included quantity, access, and function as well as physical space logistics and technical support.

The number of video cameras, tripods and computers with basic editing programs (e.g., iMovie, Windows MovieMaker) was a problem for teachers. At one school, there were two school cameras plus six from the university (only usable during class time or by arrangement with the researcher) available for two classes. Another teacher in the school chose to use the cameras for a class assignment during the same time period.

Teachers wanted enough equipment for at least every group (6-8 per class) and a full computer lab with technical support available before they do this kind of project again. Without that, they said that they would have making a video an option for students to choose as a way of presenting their research findings. Students did not speak or write of equipment in the same way and seemed quite comfortable with multiple options. Some students used their own or borrowed cameras and computers (two brought their own laptops to class to edit with their groups). One group used a digital camera with video mode and another may even have taken footage with their cell phone. Student concerns and frustrations centered on access and functionality.

Sometimes, students were not able to get a camera when they wanted to use it. Though cameras at all of the schools could be reserved ahead of time, students rarely did so. Likewise, only one video group arranged to use the university cameras outside of regular class time. Student experience with editing varied greatly and many found the editing software equipment challenging. Sometimes equipment did not work properly,

students did not understand how to use it (nor did they ask for assistance), or it did not do what was wanted of it.

None of the classes were held in rooms or labs (three of the four are held in computer labs) with computers that had video editing capabilities (software, memory). Three classes (Classes 1, 3, and 4) had access to and the use of small Macintosh computer labs (7 to 10 computers) earmarked for yearbook, journalism, and specialty sports students. The fourth group (group 2) pre-booked and used a different computer lab across the hallway with computers running Windows MovieMaker. The school district technician was unable to help get this system working for the project so a university technical support person assisted in troubleshooting and getting it operational. The school also let the class use one very old Macintosh computer and three older model video cameras. Another small Macintosh lab in the yearbook teacher's class was discovered after the project was finished. There was not much room to move around in the computer labs, which were crowded with 25 to 30 students each.

Although the school district had technical support and each school was allocated time, the technician at one school was unfamiliar with and unable to help with the video editing. At another school, the technical support people got several computers working for video editing in the library close to the end of the project. However, other groups and classes regularly booked and used the library.

Teachers believed that having access to properly functioning equipment (video cameras and computers) supported by technical expertise would make a huge difference to student motivation, the video making process, the video projects themselves, and the

class. Students simply wanted the equipment to work and be available at the times that they needed it.

Project timing and timeframe.

Students in British Columbia secondary schools are required to complete eight courses per year. Schools operate on two basic systems: linear, where courses run the entire school year; or semester, where courses run more frequently for approximately half the school year. In the main study, Class1 was on a linear system. Classes 2, 3, and 4 were on semester systems. Scheduled events and guest speakers, other projects, additional research support, attendance, and timing were additional timetable related factors that influenced the project and classes.

Class 1 started November 9, 2009 and presented their videos on December 17. Students met thee times per week for one hour. The teacher scheduled a session in the library/career centre to facilitate student research. Students had the opportunity to show their video rough cuts, received peer feedback, made changes, and presented their final videos to classmates. There was no public or community presentation.

Class 2 started November 24, 2009 and presented their videos on December 16 and 17. Students met five days per week (1 hour and 25 minutes Monday to Thursday, 1 hour Friday). The classroom teacher scheduled two of those sessions with the librarian to facilitate student research. Some groups showed their rough cuts, received peer feedback and made changes prior to presenting their final videos to classmates. Others showed only their final videos (without the rough cut and feedback) to classmates. Three groups showed their work sometime in January privately to the teacher (the researcher did not see the final videos).

Classes 3 and 4 started January 4, 2010 and presented their videos on January 22, 2010. Students met five days per week (5 blocks of 65 minutes Monday to Thursday, 55 minutes Friday). The teachers scheduled one of those session with the school librarian to facilitate student research. Students showed rough cuts as their finished project to their classmates and the school principal. One video group in Class 4 did not make a video, but presented their topic, their experience, and rationale for not having a video to show.

All three schools had other events scheduled during the project timeframe. All four classes had other projects to complete and hand in, though not all students had incomplete work. Classes 2, 3, and 4 had guest speakers scheduled for three classes during the project timeframe. The researcher was informed of these events either at the beginning of the start of the project in the class (for Classes 3 and 4) or a week ahead of the start of the project (Class 2). Recounting her expectations for the project, the Class 3 teacher traced her own anxiety about the timeframe:

> …because I knew we didn't have enough time. … anytime you do a big project, particularly for the first time, you have unknowns around time. … And so I felt very torn and conflicted and I wasn't being fair to you, and that it wasn't going to be fair to the kids because there wouldn't be enough time for them to go through the process…. And then, as things came up that were going to bite into the time, I just knew it was going to be exceptionally difficult. (teacher interview excerpt)

Students in her class confirmed this difficulty; one student wrote in their project reflection, "Overall it was still a challenging time frame to work with in order to finish

the project". Even though this teacher was worried and knew it would be hard for her students, she still claimed they had fun and benefitted from the project.

> I wasn't surprised to see when they were enjoying it, how much they were enjoying it, but that's still somehow always learning. Just seeing kids fired up, is always a treat. And seeing them being able to do that even with all the time constraints and all the challenges. … Makes it worthwhile. (teacher interview excerpt)

Another factor that influenced the project was attendance. Students and teachers were both absent. Three of four teachers were absent from 1 to 3 days during the project timeframe. Students said that having people in their group absent made it difficult for them to work and finish their project on time. One video group attributed their non-completion to the absence of a group member in the final week.

For some, the placement of the video making intervention in the course was a concern. One teacher questioned whether the timing of the project made a difference. She thought that students were unpredictable and might do the project differently and give different responses at another time during the year.

All of the teachers were convinced that students would have been more motivated, done better work, and felt better about the project and themselves with more time. The Class 3 teacher stated, "To me, the difference between a successful project and an unsuccessful project is sometimes an extra three hours" (teacher interview excerpt).

Time management.

Managing time as well as social communication was recognized as being essential to this project for many students. Time management was particularly salient in three of

the four classes as they had less time to complete the project than originally arranged. This resulted in changes being made to project assignments that included cutting the final public presentation of the videos. In addition to the timeframe, attendance, scheduling, preparation, and organization were identified as factors that influenced time management skills and motivation. Student and teacher perceptions of social communication during the video making project in health education class were also highlighted. These included the importance of communication, appreciating differences, and strengths of other group members, as well as student social life.

Teachers and students were absent from some of the classes. The number of absences, which she was told was normal for the class, surprised the researcher. Some of the international students left before the end of the school term for winter break to travel home, while others came back late after the break. One student noted that her absences made it difficult for her group to complete work in a timely fashion. Another student became ill part way through the project and his group did not complete the project. One teacher was surprised that some of her students let their friends and groups down by not showing up.

Students struggled with scheduling their time. Many of them were busy outside of school with sports, music, and part time work. One group created a video for people with busy lives entitled, Everyday Exercises. The idea was to show in a humorous way, how exercise can be incorporated into everyday activities; thus incorporating the importance of time management right into their project. With the loss of class time, students needed to schedule time and space outside of school with their group members. One student said that:

> The most difficult part was working around each other's schedules to get the project done and having exams next week put a lot of pressure on. (Class 4 participant reflection)

This might not be considered fun, interesting, enjoyable, or make one feel good thus impacting intrinsic and extrinsic motivation as well as self determination. Students did not use words associated with intrinsic motivation in their writing and conversing about managing their time. They did, however, connect it with value. Ultimately, the students were the ones who knew what they learned in the project, which was reflected in this participant's writing about time management:

> I learned that being organized and prepared is extremely important in a group, because you might come across time problems like we did and need to know how to still be able to get things done on time. (Class 3 participant)

This student identified and recognized the behaviors as personally important and was perhaps able to integrate the experience into her own beliefs and values.

Social communication.

The importance of communication for students was mainly articulated in their reflections about their learning and group work for the project. This was particularly salient in Class 4, where several groups struggled with both getting along and completing their projects.

> I learned that everyone has to communicate so they can get a good movie (Class 4 participant presentation excerpt)

> We needed to work our schedules out and learn to work together better. (Class 4 participant reflection)
>
> What I learned was that you have to communicate well to get this done fast! (Class 4 participant reflection)
>
> I learned that it requires a lot of patience to work in groups, especially when it's a filming project. I do, however, appreciate the effort and the work our group put in, in such little time. (Class 3 participant reflection)

This participant went beyond the recognition of the importance and need for patience in communication in working together to an appreciation of other members contributions. Several students talked about both positive and negative attributes of their team members. Some were very pleased and happy with the way their group got along, while others were frustrated and annoyed with their group dynamics. One participant said,

> I think the most ineffective thing was the group itself. Nothing went smoothly and agreements were not reached with everyone satisfied (Class 3 participant reflection)

In Class 1, one video group chose to make their video about the importance of communication because they believed it to be very common and disruptive. The video showed two friends role-playing a miscommunication scenario followed up with a rewind, thinking commentary, and revised improved communication alternative. One of the video makers was fascinated by "the way a human mind can interpret the same thing as something different" and continued by saying, "it's kind of cool" (Class 1 participant presentation excerpt). This was something close to the participant's experience providing

both intrinsic (interesting to consider and think about) and identified motivations (common and could be related to) for the video they made in the class.

Teachers talked about the value of small group work and skills developed by their students as they worked on the project. Both stress and rewards of student experience were viewed as positive learning. The Class 1 teacher encapsulated this when she said,

> I think it [the project] was a success in that every student gained some insight or perspective, into either themselves or how well they work in a group, which really is part of the Planning curriculum, I think. Planning is one of those courses that should be preparing you for the work force and I think it accomplished that. (teacher interview excerpt)

She went on to talk about some of the students who struggled with social communication skills, again, viewing it as a positive and successful outcome.

> The other students that, the couple that struggled with working with groups, I think those were students who probably have those struggles everywhere, and they're becoming more self aware of it, and they're just learning, you know, how if they have to, they're going to minimize group work in their life and how they're going to manage that. And maybe that's okay, they at least were insightful into their own personalities and their own capabilities. (Class 1 teacher interview excerpt)

Problem solving.

Problem solving, including organization of roles and responsibilities, group makeup as well as student learning about their own and group members' abilities, was another area of learning and development identified by both teachers and students as

notable. It was connected to relatedness and intrinsic motivation, and likely influenced self determination and possibly amotivation in health education class.

Students organized roles and responsibilities for completing projects in different ways; some chose to have all members do everything, whereas others divided up the tasks and completed the project that way. From their reflections and presentations, groups who said that they got along really well, had fun working with each other, and had few or no problems tended to share the workload equally. Researcher observations of these groups along with student reflections indicated that they appeared to have had more fun.

> Having a good group also helps in cooperation and getting things done quickly, and efficiently…while adding in that extra bit of fun. (Class 4 participant reflection)

Group makeup was clearly important to student enjoyment as well as ability to work as a team. The following excerpt came from a student in a group that struggled to complete their video.

> I learned that we need to pick our groups wisely and to communicate more in an ineffective group. (Class 4 participant reflection)

The positive side in this was that they reconciled their differences, solved problems that arose, and completed a rough cut health video. They did not report having had fun or enjoying the process.

Students expressed a range of feeling about how well they solved problems as a group. Two students wrote about what they learned in terms of their ability to solve problems:

> When taking part in this project, I learned to always expect the unexpected. For example, we needed to film and some group members were absent, but we coped with the issue and found a suitable replacement (Class 3 participant reflection)
>
> I learned that you need to be able to adapt to problems that arise (such as a golf course being closed). (Class 1 participant reflection)

Others had difficulty communicating and solving problems such as achieving group consensus, scheduling, member illness, member absences, and technical issues. One group did not complete even a rough cut of their video, attributing it to a group member illness. While they were unable to find a solution, the previous quote demonstrates that other students were able to solve problems relating to member absences. A few groups completed project work with one or two people doing the majority of the work.

The Class 4 teacher took up the notion of student responsibility and division of labor when she talked about student learning in terms of successes and challenges.

> I think number one, they learned how important it was to have to work together and to be reliable. They learned more about, some people are going to do more than their share, and some people are going to do less than their share. (teacher interview excerpt)

She also believed that some of the successes for her students came from failures that they experienced. One example cited is of a group who lost their data and had to redo their whole project over lunch. While it was not the polished video the students had planned, they persevered and did it, which the teacher viewed as a huge success.

Teachers identified group work and problem solving as skills that students developed through doing this project. They welcomed the opportunity and were pleased with the efforts of their students. As one teacher said:

> ... they did really well, problem solving, so they had to problem solve a lot and some got really frustrated and some were able to push through it. (Class 2 teacher interview excerpt)

She went on to talk about her students' personalities as well as group dynamics, which she believed were important factors in their willingness and motivation to solve problems.

> They just did it, but that just shows you that, personalities. If they want to be successful at something, that they're willing to do the work to figure out how it's going to be. Some of them don't have the personalities to work through the problems and work as a group to solve the problems. Not leaving things to the last minute. I think group dynamics plays a huge role in that as well. (teacher interview excerpt)

The Class 1 teacher spoke of the stress and rewards that her students experienced working with groups and partners creating their health videos. Teachers saw real world value in this and in the process that problem based learning entailed. The Class 3 teacher reiterated the idea in her summation of student learning when she said,

> They learned that even if they choose their own groups and work with their friends, that if they're under pressure or if they have to produce, problems arise and sometimes it's better working with other people or, just that there's tremendous challenges with working with other people, which

> I think is important in this course… Because I think that's the real world, people have a project to do or they're on a team…and still produce. (teacher interview excerpt)

Some students really enjoyed getting out into the community and researching with the video camera. Others interviewed people in their own school and were surprised by some of the responses they got. At one school, students gathering information about teen's understanding of asthma ran into unexpected difficulties.

> The one thing that surprised me the most is how reluctant people were to help by giving their opinions. Some of them may have been shy, but for the most part they were just being difficult, stubborn and uncooperative. (Class 3 participant reflection)

Finding willing interviewees was not an issue at another school where one group found that the students they interviewed had very healthy lifestyles, which led them to conclude that a lot of teens at their school were very healthy. Another group at the same school were shocked by the lack of knowledge students they interviewed had about basic nutrition, healthy eating, and staying fit.

First language.

Teachers viewed the project as an opportunity for ESL and special needs students to explore other ways of sharing their understanding and experience. It also provided a forum for ESL students to practice and use their English language skills in small group settings. There were 28 ESL students making videos in all four classes, 13 of whom had complete sets of quantitative data (reflection data were not done in class 2). Of these, nine were in ESL only video groups, whereas four were in mixed language ones.

Video topics were varied, with just one that was obviously related to culture (i.e., one group chose to share some of their native food from Korea), though several had their own cultural take on global themes (e.g., H1N1, Crystal Meth). One group of ESL students chose to make their video on Trans Fats and went out into a food court at a mall to interview people. In reflecting on her contribution and effectiveness in the project, this student wrote,

> In our group, I think the most effective thing is that we met many different people and talk with them. (Class 3 participant reflection)

She also wrote about how much she enjoyed working with her friends on the project, which was something she rarely experienced.

Teachers observed that the special needs and ESL students in their classes were interested and excited by the project and the class. The Class 2 teacher was surprised and pleased about this aspect of the project and said,

> I just like the idea that my ESL and my Special Ed [education] students were able to be successful at something that maybe they thought, awwww, I don't know if I'd ever do. So I think it just gives them an opportunity to express themselves, what they've learned, creatively, and with facts, too. To support a project, where if they have to go write an essay, they're just not going to show any interest and they won't get excited about it and it may be something really, that they might struggle at it, where I think a lot of them excelled at it and got excited about it. [Making videos] allowed them to explore other ways of sharing their knowledge. I didn't expect that. (teacher interview excerpt)

She thought that the project was particularly intrinsically motivating for those students. They may also have felt less pressure without having to write research papers.

Autonomy and self determination.

Video groups with students who had high autonomy (i.e., post-intervention self determination ratings were 4 or higher) also demonstrated good time management skills, communicated and worked effectively in their groups, dealt appropriately with absences as well as technical issues and equipment.

When asked what, if anything was surprising about the project, one Class 3 high autonomy participant wrote,

> Gradually, I found this project rather interesting and fun. Although we have less experience with a video camera, our group somehow managed to put it together, and in my opinion, did well, this surprised me. (participant reflection)

This group overcame their lack of experience with the equipment to make a video that this student was pleased with. The group took a long time to decide on what to do and had to work hard to come to agreement on several occasions throughout the video making process. This student also indicated that his/her interest and enjoyment increased over the timeframe of the project.

Groups with low autonomy participants spoke and wrote about problems scheduling their time, making time, and not having enough time. They also struggled to come to agreements and make decisions within their groups. In writing about what was and was not effective in the project, a low autonomy student in Class 1 reflected,

> We argued a lot, which was ineffective. The reason why we argued was because someone joined our group late and then practically never showed up for class, thought he knew what was best for the group, and video! (participant reflection)

This student was not able to get past blaming and had difficulties throughout the project with her group, though they did eventually complete a video. Problem solving skills for video groups with low autonomy students did not appear to be as effective as for those with high autonomy. Several groups were unable to either find solutions or get appropriate support to solve problems that arose (e.g., equipment and technology issues were cited by several students), thus failing to take responsibility for aspects of their projects that did not work as envisioned.

Video Making Process

Students chose whether or not to make a video or do alternate work in class. Two students in Class 1 chose alternate work. Classroom observations by the researcher and teachers indicated that students appeared to be interested, excited, and engaged with making a video with their friends.

In addition to health education class findings presented previously, further scrutiny of the data that focused more specifically on the process of making videos expanded the idea of expectations for the health video project. One student wanted to develop competence in video making as noted in the following reflection,

> I was hoping that it would improve my video making skills and make me more comfortable in front of the camera as well as learning how to edit videos. (Class 4 female participant)

Another student claimed not to have particular hopes or expectations, but expressed a degree of external regulation of motivation when she wrote,

> I didn't have many expectations for this project; I mostly just wanted to get it done in time for it to be presented. (Class 4 female participant reflection)

This reference to time reiterates again issues of autonomy, motivation, and relatedness. Time was problematic throughout all three phases of the video making process.

Even though there were time pressures, the Class 3 teacher was convinced that her students enjoyed making health videos. She used specific examples from her own observations to support her claim:

> I do [think they had fun], yeah. And again, it's hard to have fun when someone's going, hurry up hurry up, too. Right?... That time I went into the editing room and watched them, they had fun. The times I watched them here filming, they were having fun. (teacher interview excerpt)

Differences Between Phases

Pre-production.

Some students resisted the pre-production phase of the process (i.e., activities that included planning, preliminary researching, writing a proposal, creating a storyboard and making a shot list); many would have preferred to go straight to videotaping and several did not see the point of this part of the process. Participants either did not know how or were reluctant to do basic research on their topics. All four teachers used one to two classes for additional research either with or in the library or online in the classroom, which took away from time allocated for production activities. Comments from

questionnaires and presentations as well as written reflection responses exhibited a range of thought and experience.

Some students found pre-production activities challenging and difficult as stated in the following reflections:

> The most difficult part of the video was creating the story board and the script. (Class 4 female participant reflection)
>
> Most difficult was pre-production; nobody was willing to do the screen shots or the boring written work so that was usually dumped upon one person to do. (Class 3 female participant reflection)

The tedium of the pre-production phase was taken up and added to by another student who wrote of the repetitiveness nature and apparent pointlessness of pre-production activities as well as the stress that imbued:

> Feeling very stressed and pressured surprised me. Since it was a video project, and I had done filming before I felt confident in what I was doing. This confidence quickly fleeted when we began planning. I was also surprised how much time was spent planning out the video instead of actually filming. I don't know if that time was used effectively since we seemed to be doing the same thing over and over. (Class 1 female participant reflection)

While this student was not able to realize the point of the activities, other students found value and purpose in them. While acknowledging the lengthiness of the pre-production process, a different student was also able to understand and articulate why it was important.

> I was surprised by the overall process and how long it took to make a short video about health. I didn't realize that pre-production took as long as it did and how important it was for the video to be effective and run smoothly. (Class 1 female participant reflection)

Another student wrote of their contribution,

> My most valued contribution to the project was the written proposal and the story board. it helped our group be more organised and get a solid idea of what to do. (Class 3 female participant reflection)

And another student recognized the importance of the activities and applied it to their own learning,

> I have learned that being organized and planning ahead is really important and it makes good quality more easy to get. (Class 4 female participant reflection)

Production.

Once students began videotaping, it appeared from classroom observations that they were enjoying using the cameras. Difficulties identified were related to competence and experience with acting as well as with the technical equipment skills. Time was also an issue.

Though students seemed to enjoy themselves, their enjoyment also had its difficulties. Several groups had problems getting appropriate footage:

> We did a lot of laughing and it was hard to keep a straight face while filming" (Class 3 female participant reflection).

> The most difficult part would have to be the acting and reading/memorization of words to speak out. The project was very entertaining. (Class 4 male participant reflection)
>
> The most difficult part of the movie was trying to work the camera and keeping it steady. (Class 1 male participant reflection)

Some groups experienced technical problems with older model cameras and a few were not able to access a camera when they wanted one, which likely put pressure on them. Though all schools had cameras that could be pre-booked, students did not do so.

Time constraints and scheduling were the main reasons given by both students and teachers for videotaping to be less enjoyable. This also impacted technical problems, as there was not always enough time to rectify them satisfactorily.

> The most difficult was making time to film every scene we needed, and the most satisfying part was working on a fun project with my planning buddies. (Class 4 female participant reflection)
>
> The most difficult part was probably the filming because of the time frame and the absence of different group members. (Class 3 male participant reflection)

One group had a slightly different experience with time and videotaping as noted in this student's comment:

> I was surprised that the actual shooting of the video didn't take as long as I had expected, but overall it was still a challenging time frame. (Class 3 female participant reflection)

All groups said that they would have liked more time to film.

Post-production.

Post-production experiences were varied. Nearing the end of the project, students were focused on completing their videos. Time, as noted previously, was cited as a difficulty that impacted motivation, self determination, and likely relatedness in this phase of video making. Technical and equipment items were also identified as sources of learning, difficulty, frustration, and enjoyment.

One student wrote that he had always had trouble with pacing in a video, and reported leaning specific techniques related to editing as well as videotaping:

> The things I learned is to pay more attention to continuity, and to slow things down by showing more entrances and other things that slow down the pace of a movie where appropriate. I also learned the value of a tripod as the camera was bouncing around in all shots taken without a tripod. (Class 4 male participant reflection)

Class 2 took place in a computer lab that was not set up properly to edit videos, which caused delays and frustrations for some students. In another class, the editing program was not up to the caliber that one student was used to:

> I was extremely frustrated with the editing. I was unable to really do any kind of creative editorial as the video had to be so simplistic due to the restringing shackles of the torturous prison that is IMovie. (Class 1 female participant reflection)

One student said that while she enjoyed the editing process, she did not like having to deal with malfunctioning technology. Some students with less experience making videos found editing in general challenging as demonstrated in the following reflections:

> The most difficult was the editing part because group members wanted certain parts out, and I had to add in transitions that would work well. (Class 4 male participant reflection)
>
> The most difficult part, yet the one that filled me with the most satisfaction with completing, was the editing. This was the polishing of the film, and seeing the whole thing come together and being much better than anticipated was an accomplishment. (Class 3 male participant reflection)
>
> I thought the most difficult part was the post-production, but it was also the most satisfying. To see how our video transformed was quite impressive. (Class 1 male participant reflection)

In addition to the difficulties cited, students expressed satisfaction with their post-production work and final videos.

> The most satisfying part was when I put together the video, and it worked out very well. (Class 4 male participant reflection)

Several students said that it was fun, easy and enjoyable putting their movie together.

Gender Differences

Overall, gender differences were not obvious or evident from general classroom observations of students working on their projects. Both male and female students participated and did not participate in using equipment as well as experiencing success and failure with it.

In their reflections, survey comments, and presentation, males did not make many specific comments about the pre-production phase of video making, but they did write and speak about how fun and satisfying the editing process was. Females were more

specific in their comments. Some females expressed frustration with and pressure from the editing process, particularly with the equipment. When males spoke of difficulties with equipment, they talked about it in terms of learning (e.g., how to use it, how to get pacing right, the cool things it can do). Their comments included the expectation that they would learn how to use equipment, that they did learn, and some level of degree of competence gained from making a video. When females spoke or wrote about equipment difficulties, they expressed frustration and disdain for the equipment, which they blamed for problems they experienced.

CHAPTER 5: DISCUSSION

Adolescent health behaviours are in the process of development during high school (Arnett, 2007; Jenkins, 2003; Steinberg, 2005) and are influenced, modified, and often set during this time of their lives. For these reasons, it is particularly important to have students acting out of personal interest and inherent satisfaction in health education class (i.e., intrinsically motivated). Intrinsic motivation and its place within SDT is an essential component of health-related behaviour (Ryan, et al., 2008).

Ryan and Deci (2000) wrote that activities with intrinsic interest have the appeal of novelty, challenge, or aesthetic value and that for an activity to be intrinsically motivating for someone, it must have intrinsic interest. Video making and the video making intervention appeared to fit the bill in terms of novelty, challenge, and aesthetic value (Norton & Hathaway, 2010; Reid et al., 2002; Schuck & Kearney, 2004). The intrinsic interest was thought to stem from the choices students make about what and how they created their videos.

Video making in health education class was intended to motivate and engage students in high school health education class. Mixed methods were used to examine the effects of video making on motivation, self determination, and relatedness. Two main research questions were posed in this dissertation:

1. What effects does creating videos on a topic of interest to grade 10/11 health education students have on motivation, self determination and relatedness in health education class?
2. Are some phases of video making more intrinsically motivating than others?

Two hypotheses were put forth: (a) that students would be more intrinsically motivated in health education class after making videos about personally relevant health topics; and (b) that students would be more intrinsically motivated by production and post-production video making activities than by pre-production activities. Other measures of motivation, self determination, and relatedness were examined to explore changes, differences, and ratings in health education class and video making phases. The influence of classroom, gender, first language, and autonomy were examined as potential moderating influences. Academic motivation for going to school was measured to get a sense of the school climate participants were experiencing at the time of their video making.

Health Education Class

Intrinsic Motivation

Students did not have significantly higher levels of intrinsic motivation in health education class after making videos on topics of their choice as measured by the adapted Situational Intrinsic Motivation Scale (Guay et al., 2000). Student and teacher comments crossed the spectrum from those who were very interested and enjoyed the process to those who struggled to see the value or lost interest in their video project for a variety of reasons.

To some extent, student expectations for video making refuted the statistical findings and lent support for the hypothesis of increasing intrinsic motivation. It is also plausible that with relatively high entering attitudes towards making videos, a 15 day intervention was not likely to change that. Though varied, findings suggested that many, not all, in this study were attracted by the novelty of making videos. While the majority

were optimistic and looked forward to the experience, at least one person expected it to be a waste of time.

Motivation for choosing health video topics and personal interest in those topics differed. Some were clearly intrinsically motivated, that is, students cited personal interest, curiosity, and fun as reasons for choosing their topics. Others had identified regulation of motivation, that is, students said that their topics were serious and important issues which people and teens should be aware of. There were also some with both intrinsic and identified motivations for choosing their topics, that is, students said that their topic commonly occurred and they wanted to learn more about it.

Similarly, motivation for the intended purpose of their videos ranged along the continuum from identified to integrated and intrinsic reasoning. Students wanted to share their knowledge and understanding of their topics, inform others, and ideally help make a difference. This supported participatory video literature findings with youth where students believed they could make a difference with the videos they created and showed (e.g., Kinkade and Macy, 2003; Riecken et al., 2006b).

As the project progressed, however, and students worked through the process of making videos, environmental and social factors impacting student motivation, self determination and relatedness helped to explain and support statistical findings in health education class. Technical and equipment issues, coupled with lack of time due to timetable changes and incomplete implementation of the video making process were critical environmental factors affecting the process. Social factors and skills such as time management, social communication, and problem solving as well as group makeup and

dynamics may also have impacted student self determination and ratings of intrinsic motivation.

Other Effects

Autonomy.

Self determination theory, specifically cognitive evaluation theory, (Ryan & Deci, 2000; 2002) explains variability in intrinsic motivation and posits that autonomy needs to be present for intrinsic motivation to flourish. Both environmental and social factors described in the study impacted student autonomy, likely contributing to perceptions of loss of locus of causality and volition. Figure 5 graphs significant declines of these two aspects of self determination over the timeframe of the project in health education class. Student ratings of choice increased slightly, contributing to overall ratings of self determination, which did not change significantly over time. This is not surprising given cuts to allotted timeframes and changes made to video assignments in addition to scheduling and technical issues.

Student autonomy at the end of the video making intervention was correlated to motivation ratings in health education class. Students with high autonomy had ratings of intrinsic motivation and identified regulation of motivation that were significantly higher than students with low autonomy. They also had increases in ratings of both intrinsic motivation, which increased from a mean of 3.20 to 3.79, and identified regulation, which increased from a mean of 4.00 to 4.44 following the video making intervention in health education class. Low autonomy students, on the other hand, had ratings that decreased over time, from a mean of 2.87 to 2.76 for intrinsic motivation, and from a mean of 3.48 to 3.19 for identified regulation of motivation. Video groups with students who had high

autonomy used their time well, communicated and worked effectively in their groups, dealt appropriately with absences as well as technical issues and equipment. High autonomy students were more intrinsically motivated than low autonomy students in health education class after making videos about personally relevant health topics.

Video making may have influenced some students' ratings of intrinsic motivation in health education class. It is also possible that the video making had nothing to do with the increases. One might argue that these students were already highly self determined, competent students, and that is what contributed/determined the increases/changes to ratings of intrinsic motivation. Student comments referring to getting more interested, having more fun, and getting the hang of the equipment over the course of the project suggest otherwise. As well, high and low autonomy was based on post-intervention self determination ratings to reflect student experience of autonomy after having made videos. However one explains these results, it seems clear that student autonomy is important to our understanding of student motivation and self determination in video making and health education class.

This is exciting because even though there were numerous issues and difficulties as well as having a flawed and incomplete video making intervention, high autonomy students' ratings of intrinsic motivation and identified regulation of motivation increased over the timeframe of the project. Although an autonomy supportive environment was intended, the realities of the school setting, in which the researcher was a guest instructor in classrooms with established practices and circumstances beyond her control made this problematical. It is, however, well documented that enhanced student autonomy has

positive outcomes and that autonomy support can be taught (Reeve, 2002; Reeve et al., 2008; Ryan & Deci, 2000).

What about the rest of the projects and assignments in the class? What part do they play in student responses? The timing of the questionnaires immediately prior to and after the video making intervention should have eliminated most interference from other projects. However, teachers scheduled other events, guest speakers, and extra research time during the time allotted for video making. They also expected students to spend time completing unfinished assignments during this time. For three of the four classes, it was their culminating project for the course. Perhaps other assignments did have an influence, which may help explain the lack of overall change in intrinsic motivation in the class as well as the increase in amotivation.

Amotivation increased. None of the other measures (intrinsic motivation, identified regulation of motivation, external regulation of motivation, self determination, and relatedness) showed any change over the timeframe of the study.

Interestingly, high autonomy students had significantly lower ratings of amotivation than low autonomy students. Their pre-intervention mean was 2.70 compared to low autonomy mean of 3.53. Post-intervention means were 3.18 for high autonomy students versus 3.90 for low autonomy. Despite promising directions indicated by exploratory findings regarding the role autonomy may play and the anecdotal evidence showing some support for positive impacts of video making on intrinsic motivation, identified regulation of motivation and amotivation, amotivation was the only measure that increased significantly (from a mean of 3.20 to 3.61) over time. Student comments were few, yet telling, when they stated that the class was unmotivating and stressful with

too many projects, many of which seemed unnecessary and pointless. These few comments concur with Begoray et al.'s 2009 research in health education class but are not enough to draw conclusions from in this case.

It may not be realistic to think that one project could shift perceptions and positively impact student motivation, self determination, and relatedness. One solution would be to implement the project fully with adequate time allocations and appropriate technical equipment and support. Another approach might be to isolate the video making project and ask specific questions about the effect it had on motivation. Perhaps measuring ratings of motivation for each of the assignments and projects in the class could be useful in terms of identifying which kinds of projects are intrinsically motivating.

First language.

Native English speaking students had higher ratings of external regulation of motivation than ESL speaking students and ESL speaking students had higher ratings of relatedness than native English speaking ones in health education class. This was unexpected. ESL students for the most part were excited about making videos and produced interesting, relevant research. They wrote of enjoying the opportunity to work with their friends as for at least one participant, it was not something she got to do elsewhere at school. While all students appeared to like working in groups with their friends, perhaps it was less common and more novel for ESL speaking students. One teacher was pleased that her ESL students excelled in creating something that was not dependent on written language skills. Not having to produce a written research paper may

have taken the pressure off ESL students resulting in lower ratings of external regulation of motivation than their native English-speaking counterparts.

With increasing numbers of International students in our public schools, many for whom English is a second language, these exploratory findings suggest possible differences in motivation and relatedness in health education class that might be useful to understand more about.

Video Making

Intrinsic Motivation

Students were not more intrinsically motivated by production and post-production video making activities than by pre-production activities. Time pressures, equipment issues, and group dynamics were factors identified that impacted student video making processes. Not having a final public presentation may have alleviated some of the time pressure on students, but it also took away the opportunity to have an authentic audience for their work.

Previous experience with young people making videos led to the hypothesis that ratings of intrinsic motivation would be higher for videotaping and editing as well as presenting than planning their videos. It is active and can be a lot of fun. As one teacher pointed out, it's hard to have fun when you are being told to hurry up all the time.

Students felt pressure and loss of control over the video making process. The rough cut ended up being final cut for groups 3 and 4, whereas the first group had a couple of days to make improvements in response to peer evaluation feedback. Some video groups in the second group had peer feedback and one day to make improvements, while others were not prepared for even their rough cut and only presented whatever they

had on the final presentation day. Not having a public final video viewing for students to share their accomplishments and receive feedback on the work they did was a key environmental factor relating to time affecting student self determination and motivation. The implementation of the video making process was incomplete and flawed.

Ennett et al. (2011) examined fidelity of program implementation under real world conditions in school substance use prevention programs. They found that two core domains of fidelity, adherence and exposure, were only modestly implemented, which led them to conclude that without higher fidelity adherence by teachers to curricular content and interactive delivery strategies, intended effects on youth substance use would be unlikely to meet expectations. Other implementation issues of time, logistics of computer access, and technological problems were identified in the reviewed research literature (e.g., Jones, 2002-2003). Norton and Hathaway (2010) also found that pre-service teachers identified time and technical equipment as problematical, but largely in terms of how to plan for and accommodate in their classrooms, rather than as a reason for not doing it. Although efforts were made to anticipate and avoid repeating those mistakes, they were still issues in this study.

Even though time was a factor, it did not stop students and teachers from having fun making videos. Overall, the timeframe may have impacted intrinsic motivation for the class, but students certainly enjoyed many aspects of the process. Using the video camera as a way to research was both rewarding and frustrating for them. One group of students found it enjoyable and an opportunity to meet different people, whereas another was frustrated by what they viewed to be difficult and uncooperative interviewees. Some students were really interested in finding out other people's opinions and were frequently

surprised by what they found out. Classroom observations definitely found evidence of interest, enjoyment, and pleasure with these processes.

Perhaps the measure failed to capture this. The motivation scale (Guay et al., 2000) has been used in laboratory settings for specific tasks (reference) and in the field for one time activities (e.g., in Physical Education, reference). Even though the questionnaires asked specific questions that referred to all the activities involved in each phase of the process, perhaps it needed to be broken down further. Questions regarding each specific activity within each phase of the process might have yielded more information regarding what was particularly interesting, fun, and pleasant. A more detailed approach such as this could help identify specific details in the video making process.

Other Effects

Classroom.

When the classroom grouping that students were in was taken into account, post-production activities were rated more intrinsically motivating than pre-production activities. It was more interesting, fun, pleasant, and felt better to edit, complete, and present videos than to plan, propose, storyboard, and script them. Intuitively, this makes sense and supports the hypothesis as well as literature findings process (S. Goldman, et al., 2008; Goodman, 2003; McGrath, et al., 1997; Riecken, Scott, et al., 2006). Though students in all classrooms experienced technical, equipment, and time pressures, they seem to have been impacted differently. Differing group dynamics, communication, teamwork and problem solving skills may have influenced how students and teachers dealt with various issues. Full implementation of the video making intervention (i.e.,

adequate time, community involvement, and the inclusion of a public presentation) along with better technical support and equipment would likely increase the positive impact these findings hint at. A larger sample would help increase the power.

In addition to intrinsic motivation, when classroom grouping was a factor, post-production activities were rated higher than pre-production activities for identified regulation of motivation, self determination, and relatedness. As well, identified regulation of motivation and relatedness in production activities were rated higher than pre-production activities. Once the classroom grouping they were in was taken into account, students were able to understand the personal relevance of production activities more so than they did for planning and pre-production activities. They also felt more connected to group members when videotaping than when planning. Time, equipment, and group dynamics were identified repeatedly by students and teachers as areas of concern in the video making process. Further study of these environmental and social factors and how they influence student motivation, self determination, and relatedness could aid our understanding in instructional design and curriculum as well as video making, school health education, and self determination theory.

Patterns of ratings between the classrooms were different for both identified regulation of motivation and external regulation of motivation (see figures 8 and 9). All four classes rated pre-production and production activities similarly in terms of identified regulation of motivation. For post-production activities, Classes 1, 2, and 3 again had similar ratings that decreased slightly, whereas Class 4's ratings of identified regulation of motivation increased from a mean of 3.30 for production activities to 4.05 for post-production activities. These students found post-production activities more meaningful

and could relate to them more than they did for pre- and post-production activities. For external regulation of motivation, Classes 1 and 4 had roughly the same levels for production and post-production activities. Class 3 had higher levels and Class 2 had lower levels. Perhaps editing and presenting were more stressful than videotaping for students in Class 3. The computer lab was small, two classes were trying to access the equipment, and time was limited. Class 2 reported less external regulation of motivation for editing and presenting than for videotaping. Time constraints were similar for this class. Unfortunately, there is no reflection data for this class, which may have given some insight into students' experiences of the video making process.

Gender.

Males rated pre-production and post-production activities higher for intrinsic motivation than females did. Males had more fun or perceived the activities to be more fun and interesting than females. They talked and wrote about learning what they could do with the editing. Where females expressed dissatisfaction, males tended to express satisfaction with the editing process. The males only groups all approached their chosen topics in humorous ways (e.g., boys staying up all night playing video games: sleep deprivation) or added humour to them (e.g., crazy over the top dancing as a weight loss method). Some female only groups also approached their topics with humour (e.g., weight lifting rolls of toilet paper as part of everyday fitness), and others took on serious topics that they felt were important for people to know about (e.g., short term effects of alcohol). They were interested in their topics, but may not have had as much fun with their topics as some of the males did.

First language.

Native English speaking students had higher ratings of external regulation of motivation for video making activities than ESL speaking students. For example, pre-production mean ratings were 5.28 for native English speaking students compared to 4.58 for ESL speaking students. Native English speakers may have felt they were obligated and had less choice about making videos than their ESL speaking counterparts. As mentioned previously, not having to worry about writing an essay or paper in their second (or third) language may have taken pressure off ESL speaking students.

ESL speakers had higher ratings of relatedness than native English speaking for video making activities. They reported feeling more connected to other students while participating in the video making activities than native English speakers did. This was unexpected and again, points to some interesting areas for further exploration. There may also be cultural differences in attitudes and perceptions of schoolwork and video making that affected student ratings of both relatedness and external regulation of motivation in video making and health education class.

Ratings of Measures.

Students were motivated the highest for extrinsic reasons in both pre- (mean = 4.90) and post-intervention (mean = 5.07) health education class ratings. The fact that health education was required for high school graduation, along with teacher perceptions of parental expectations of their children as well as of students' valuing of the course, gave further support for higher ratings of externally regulated motivation in the course. These findings support Begoray et al.'s (2009) study in school health education.

Academic Motivation for Going to School

Student participants reported highest levels of external regulated academic motivation for going to school. This was statistically different from each other form of motivation. Identified regulation was reported to be the next highest followed by intrinsic motivation, and the lowest was amotivation. Over the time frame of the research study, students reported no significant changes in these levels, indicating that the measures remained relatively stable and did not appear to be affected by the video making project intervention in health education class. The class (and hence, high school), their gender, and their first language did not appear to make any difference to their reported levels of school motivation as measured by the Academic Motivation for Going to School questionnaire.

This was the climate students experienced during their video making project in health education class. Schools are extrinsically motivating institutions, it's how they are set up. Although video making may bring out some intrinsic motivation, most students are extrinsically focused. The project was to infuse intrinsic within this extrinsic environment.

CHAPTER 6: CONCLUSIONS

Answering the Research Questions

Video making and the effects of video making on motivation, self determination, and relatedness in high school health education class in western Canada were studied using mixed methods. Statistical and thematic analyses of eight data sources were examined within the theory of self determination (Ryan & Deci, 2000; 2002) to investigate: (a) What effects does creating videos on a topic of interest to grade 10/11 health education students have on motivation, self determination, and relatedness in health education class? and (b) Are some phases of video making more intrinsically motivating than others?

Effects of Video Making in Health Education Class

Multivariate Analysis of Variance (MANOVA) tests of questionnaire data indicated that overall, intrinsic motivation, extrinsic motivation (identified and external regulation of motivation), self determination, and relatedness were not changed over the timeframe of the intervention. Amotivation in health education class increased. Thematic analyses of student questionnaire comments, student video presentations, student videos, peer video evaluations, student reflections, teacher interviews, video evaluations and records as well as researcher field notes and observations expanded understandings of these findings identifying several possible explanations.

Expectations for the video project, student topic choices and the intended purpose of their videos helped explain initial enthusiasm for making videos in health education. Environmental factors including incomplete intervention implementation, time,

equipment, and technical matters helped explain what went on during the intervention and how that may have influenced the scores on the quantitative measures. Social factors including group dynamics, teamwork, communication, and problem solving skills helped expand and explain other moderating influences with the potential to impact student motivation, self determination, and relatedness in health education class and for the video making process.

Subtests of between-subjects grouping factors indicated that student autonomy and first language had moderating effects on some of the measures. Specifically, student autonomy was positively associated and may have impacted intrinsic motivation, identified regulation of motivation, and amotivation. First language was associated with both relatedness, that is, ESL speakers reported higher levels than their native English speaking counterparts, and external regulation of motivation, that is, ESL speakers reported lower ratings. Thematic findings expanded and added to these findings.

Expectations for the video project, student health video topic choices and the intended purpose of their videos helped explain initial enthusiasm for making videos in health education. Environmental factors including incomplete intervention implementation, time, equipment, and technical matters helped explain what went on during the intervention and how that may have influenced statistical findings. Social factors including group dynamics, teamwork, communication, and problem solving skills helped expand and explain other moderating influences with the potential to impact student motivation, self determination, and relatedness in health education class and for the video making process.

Video Making Process

Multivariate Analysis of Variance (MANOVA) tests of questionnaire data indicated that overall, there were no differences in intrinsic motivation, extrinsic motivation (identified and externally regulation of motivation), amotivation, self determination across three phases of the video making process.

Subtests of between-subjects grouping factors indicated that the classroom students were in as well as their gender and first language had moderating effects on some of the measures. Environmental factors of time, equipment, and technical issues as well as social group dynamics may have affected classrooms differently resulting in some measures being more highly rated for post-production activities than for pre-production ones. Patterns of extrinsic motivation ratings for post-production activities were different for the classes too. These may also be a reflection of environmental and social factors acting within the different classrooms. And of course, each classroom had a different teacher and those teachers would have had profound effects on the students' experiences in the project. Males had higher ratings of intrinsic motivation than females for both pre-production and post-production activities. They reported having had more fun making videos than females and focused on learning rather than boredom and frustration. First language was again associated with relatedness and external regulation of motivation, with similar differences as in health education class.

Literature Contributions

School Health Education

These findings add to what we know about effective and successful school health education. In a national school health education review, Kann and her associates (2001)

found that there is need for increased understanding of the value of health education and the importance of implementing the most effective policies and programs. Ennett et al. (2011) outlined issues with fidelity of implementation of school substance use prevention programs, suggesting the need for improved adherence by teachers to content and delivery strategies in order to achieve intended effects on youth substance use. Farmer et al. (1998) assert that successful health education curricula verifies the needs of adolescents being served; establishes linkages among program goals, objectives, and outcomes; monitors program implementation; and measures program effects on the target population. These four items were integrated into the video making intervention design. Social and environmental factors affected video intervention implementation and study findings, thus highlighting key issues and/or challenges to achieving optimal outcomes. Group or teamwork, social communication, problem solving, and time management emerged as life skills students needed to have, learn, and/or develop in making a video in health education class. As well, time and equipment issues were environmental factors that impacted student video making. Identifying these factors with an eye to finding ways to make improvements will likely result in more positive impacts on student motivation, self determination, and relatedness in health education class and perhaps other curricular areas/contexts.

Self Determination Theory

Study findings also contribute to the literatures on Self Determination Theory by highlighting the role that student autonomy may play in positively influencing intrinsic motivation, identified regulation of motivation, and amotivation in health education class (and likely other classes/curricular areas). It is plausible that for some (high autonomy)

students, increased intrinsic motivation and identified regulation of motivation had something to do with the video making in class. Whether it was skills and competencies they already had and were able to tap into or those they developed or learned in the process of making videos (i.e., problem solving, time management, social communication), students with high autonomy at the end of the video project experienced increases in intrinsic motivation and identified regulation of motivation in health education class. This supports and adds to literature on autonomy support and development of autonomy in students (Reeve, 2002; Reeve et al., 2008; Ryan & Deci, 2000). It addition, by adapting and applying SDT measurement tools to a school health education setting in order to operationalize types of motivation and self determination, this research also contributes to the development of a common understanding and potential measurement instrument. This also adds to the potential for less ambiguous definitions of motivation within school health education contexts to be utilized.

Student Video Making

Even though the anticipated results were not resoundingly realized, the video making project was by no means a failure. Though not necessarily intrinsically motivating, teachers and some students deemed the experience was valuable and one that teachers claimed to be an important part of the planning curriculum. For the most part, students worked together and got their health video projects done, at least to a rough cut stage. Student regulation of motivation towards schoolwork, health education class, and the video making process was predominantly external. The video research project enabled students to be social and enjoy being with their friends at the same time as

learning and creating a health video, which may have helped shift individual motivation along the continuum towards integrated regulation and intrinsic motivation.

Time management and social communication were tied together with problem solving skills, all of which students experienced through the process of making health videos. They worked together and took on a variety of roles to complete their videos. Some followed personal interests while others shared the work equally. Student reflections supported the research literature indicating that throughout the process of making videos, they learned a variety of skills relating to working with their peers including social communication, teamwork, and problem solving (Reid *et al*., 2002).

In doing so, basic needs for autonomy, relatedness, and competence were developed and to some extent met. While groups experienced frustrations, they were generally able to work through them. In terms of intrinsic motivation, the loss of control over the time allotted for their project impacted their autonomy and likely influenced their attitude and motivation towards the project and class. It put added pressure on individuals and groups. It took away a critical part of the work where students received feedback and had time to reflect upon and incorporate it into their videos. The recursive nature of the video making process was not realized, which took away further opportunities for teamwork, social communication, and problem solving skill development. It likely also impacted student learning and motivation (Buckingham *et al*., 1995; Flavell *et al*., 1993; Reid *et al*., 2002).

While teachers viewed this as a good real world type of situation (working together under pressure to complete an assignment), for students, it was not as fun or enjoyable as it could have been. It may also have resulted in students doing less than

inspired work just to get it done on time. The project was intended to encourage and support autonomy (Reeve, 2002), not thwart it.

Nonetheless, video making in conjunction with autonomy supportive practices, where students choose topics of personal interest and relevance, may well be a useful strategy to increase intrinsic motivation in health education class. As well, proper implementation of the intervention, where appropriate time is given for the process to be completed along with the involvement of relevant community members is likely to increase both autonomy and allow intrinsic motivation to flourish in health education class.

Addressing the Literature Gaps

From the literature reviewed, six main items emerged: (a) There was a lack of research in high school health education classes, specifically where students created and made videos; (b) Definitions of student motivation and engagement in video making activities were vague; (c) Most studies used small sample sizes with specialized populations; (d) The large-scale video making studies were industry-funded evaluations; (e) Out of school youth video making projects lacked stable ongoing funding and had limiting conditions (i.e., video topics were dictated by funding organization); and (f) Practical examples demonstrated potential for schools to incorporate video making as a learning strategy or teaching technique to support student learning across the curriculum. This study sought to add to research in these areas by examining the effects of student video making on motivation, self determination, and relatedness in four high school health education classes.

Self determination theory (Ryan & Deci, 2002) was used as a guiding framework and supplied specific definitions for different types of motivation. This helped operationalize motivation concepts for examination. Mixed methods were used including statistical descriptive analyses and MANOVA tests of measures of motivation, self determination, and relatedness as well as thematic content analysis of eight data sources (student questionnaire comments, student video presentations, student videos, peer video evaluations, student reflections, teacher interviews, video evaluations and records, researcher field notes and observations). The language from the questionnaire was used in thematic analyses, thus providing common understanding of the terminology.

Though the sample size was not huge (N=67), the study did take place in regular publicly funded school classrooms with a cross-section of grade 10, 11, and 12 students from a mid-range socio economic area in a medium sized west coast Canadian city. The study was conducted through the University of Victoria without industry or special interest funding. Practically speaking, publicly funded schools provided a site where students were able to produce videos on a variety of topics in health education class at no extra cost.

Under the right circumstances (i.e., implemented properly), video making used in the manner described in this study could be an effective way to increase intrinsic motivation and self determination as well as promote content learning in health education class. By promoting health knowledge and skills as well as intrinsic motivation and self-determination in health education class, key elements of health behaviour are addressed. Working together with schools and communities to alleviate ongoing barriers to effective

school health education will provide further support for positive healthy behaviours, schools and communities.

Recommendations

The findings from this study might be of interest and use to teachers and educators, administrators, district and government policy makers in the fields of education and psychology. It might benefit people who are interested in making videos and other media with young people in schools. The following recommendations for practice, policy, and research are made with these people in mind. They are based on the findings of the study and also on the reported experiences of the participants as well as the author's own observation journal. They incorporate suggestions at three levels where feasible: schools, school districts, and provincial ministries.

Practice

Environment.

Time, timing, and timeframe; equipment availability, access, technical support:

- Ensure that adequate and appropriate equipment is available for classroom use
- Schedule uninterrupted blocks of time
- Schools on block semester system could spread video making over longer period of time with weekly or twice weekly sessions allocated for making videos
- Schedule video making at the beginning or midway through the course

Life skills.

Teamwork, communication, problem solving:

- Support autonomy and competence by giving choices, options, scaffolding tasks, providing appropriate feedback and encouragement

- Support struggling students and groups with specific explicit skills and strategies for working in teams, solving problems, researching, and managing their time

Health.

- Keep and track student health assignments and topics throughout schooling via electronic portfolio to build upon learning and avoid tedious repetition
- Involve and use community members and resources
- Schedule public presentation and invite community. Bringing together community members and students at an event showcasing all the student videos would not only allow student health videos to be shared, it would also enable connections to be strengthened within communities as well as acknowledge the value of both student work and health education within the school system. While this did not happen, previous work with youth and media making speak to the power, value, and utility of such processes (S. Goldman, et al., 2008; Goodman, 2003; McGrath, et al., 1997; Riecken, Scott, et al., 2006)

Policy

Environment.

- Schools create or add to centralized online system where teachers could:
    - View, access and book rooms, labs, spaces, equipment available.
    - Access appropriate support (e.g., technical, librarian)
    - Access in-school supportive staff (e.g., list of staff areas of expertise and willingness to support, mentor, help - along with contact information)
- School Districts could also contribute to user friendly online system to identify and make accessible district resources (equipment and personnel)

Health.

- School policy support of/for health promoting schools
- Professional development opportunities (e.g., workshops, online seminars)

- Ministry of Education
    - Provide access to school health education research
    - Provide access to health education curriculum and resources supported by education research
    - Add to Provincial student database - online portfolio record of student health education assignments and topics completed

Research

Environment.

- Permission slips signed and returned prior to starting project research
- Identify student demographics and ensure appropriate support
- Communicate with teachers and support staff to clarify expectations, roles, measurements and indicators
- Provide opportunities and events for student research to be showcased
- Ministry of Education
    - Encourage culture of research
    - Provide opportunities and events for student research to be showcased

Health.

- Establish agreed upon criteria and assessment
- Involve community members

Autonomy is key at all levels. We can learn and teach understandings, skills and strategies as well as provide environments that support and increase autonomy. This will positively impact intrinsic motivation, identified regulation of motivation, and amotivation. Choice is good, but not enough. People also need to feel in control of what they do, the activities they engage in, and with whom they do so. With choice and a sense

of control, desire will thrive. As motivations shift from amotivated and extrinsic to intrinsic, opportunities and the potential for behavioral change to occur will open up and grow.

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Appendices

Appendix A

Academic Motivation for Going to School

Motivation Questionnaire

Planning 10
Health Research Video Project
Academic Motivation Questionnaire

Student's Name:

Researcher's Name: Tish Scott

School:

Please take your time to think about your reasons for attending school. Then, rate the following reasons from 1 - corresponds not at all, to 7 - corresponds exactly. Please answer honestly. There are no right answers.

Why do you go to school? **Please answer as accurately as possible.**	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
Because I need at least a high school diploma in order to find a high-paying job later on.	☐	☐	☐	☐	☐	☐	☐
Because I experience pleasure and satisfaction while learning new things.	☐	☐	☐	☐	☐	☐	☐
Because I think that a high school education will help me better prepare for the career I have chosen.	☐	☐	☐	☐	☐	☐	☐
Honestly, I don't know; I really feel that I am wasting my time in school.	☐	☐	☐	☐	☐	☐	☐
To prove to myself that I am capable of completing my high school diploma.	☐	☐	☐	☐	☐	☐	☐
In order to obtain a more prestigious job later on.	☐	☐	☐	☐	☐	☐	☐
For the pleasure I experience when I discover new things never seen before.	☐	☐	☐	☐	☐	☐	☐
Because eventually it will enable me to enter the job market in a field that I like.	☐	☐	☐	☐	☐	☐	☐
I once had good reasons for going to school; however, now I wonder whether I should continue.	☐	☐	☐	☐	☐	☐	☐
Because of the fact that when I succeed in school I feel important.	☐	☐	☐	☐	☐	☐	☐
Because I want to have "the good life" later on.	☐	☐	☐	☐	☐	☐	☐

Motivation Questionnaire

Planning 10
Health Research Video Project
Academic Motivation Questionnaire

Student's Name:

Why do you go to school?
Please answer as accurately as possible.

	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.	☐	☐	☐	☐	☐	☐	☐
Because this will help me make a better choice regarding my career orientation.	☐	☐	☐	☐	☐	☐	☐
I can't see why I go to school and frankly, I couldn't care less.	☐	☐	☐	☐	☐	☐	☐
To show myself that I am an intelligent person.	☐	☐	☐	☐	☐	☐	☐
In order to have a better salary later on.	☐	☐	☐	☐	☐	☐	☐
Because my studies allow me to continue to learn about many things that interest me.	☐	☐	☐	☐	☐	☐	☐
Because I believe that my high school education will improve my competence as a worker.	☐	☐	☐	☐	☐	☐	☐
I' don't know: I can't understand what I am doing in school.	☐	☐	☐	☐	☐	☐	☐
Because I want to show myself that I can succeed in my studies.	☐	☐	☐	☐	☐	☐	☐

Please list any other reasons why you attend high school and rate those reasons on the same 7 point scale.

Thank you for taking the time to complete this questionnaire!

Appendix B

Health Education Class Questionnaire

Health Education Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Student's Name:

Researcher's Name: Tish Scott

School:

Why do you go to health education class?	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
Because I think health education is interesting.	☐	☐	☐	☐	☐	☐	☐
Because I am doing it for my own good.	☐	☐	☐	☐	☐	☐	☐
Because I am supposed to do it.	☐	☐	☐	☐	☐	☐	☐
There may be good reasons to go this class, but personally I don't see any.	☐	☐	☐	☐	☐	☐	☐
Because I think that this class is pleasant.	☐	☐	☐	☐	☐	☐	☐
Because I think that this class is good for me.	☐	☐	☐	☐	☐	☐	☐
Because it is something that I have to do.	☐	☐	☐	☐	☐	☐	☐
I go to this class but I am not sure if it is worth it.	☐	☐	☐	☐	☐	☐	☐
Because this class is fun.	☐	☐	☐	☐	☐	☐	☐
By personal decision.	☐	☐	☐	☐	☐	☐	☐
Because I don't have any choice.	☐	☐	☐	☐	☐	☐	☐
I don't know; I don't see what this class brings me.	☐	☐	☐	☐	☐	☐	☐
Because I feel good when I go to this class.	☐	☐	☐	☐	☐	☐	☐
Because I believe that this class is important for me.	☐	☐	☐	☐	☐	☐	☐
Because I feel that I have to do it.	☐	☐	☐	☐	☐	☐	☐
I go to this class, but I am not sure it is a good thing to pursue it.	☐	☐	☐	☐	☐	☐	☐

Notes:

Health Education Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire **Date:**

Please rate the following statements about health education class in general.	**Not at all True**	**2**	**3**	**Somewhat True**	**5**	**6**	**Very much True**
I feel like I do what I want to be doing in class.	☐	☐	☐	☐	☐	☐	☐
While in class, I feel a relaxed sense of personal freedom	☐	☐	☐	☐	☐	☐	☐
I have a choice whether or not to engage and participate in this class.	☐	☐	☐	☐	☐	☐	☐
I feel like I am doing what the teacher wants me to be doing.	☐	☐	☐	☐	☐	☐	☐
While I am in class, I feel pushed, forced, and pressured.	☐	☐	☐	☐	☐	☐	☐
It makes me feel closer to the other students.	☐	☐	☐	☐	☐	☐	☐
I feel it is my own choice about what to do, when to do it, and whether to do anything at all.	☐	☐	☐	☐	☐	☐	☐
I am pursuing my own goals, goals that are important to me.	☐	☐	☐	☐	☐	☐	☐
During this class, I feel free.	☐	☐	☐	☐	☐	☐	☐
I feel that I have control to decide what to do and whether to do it.	☐	☐	☐	☐	☐	☐	☐
I am pursuing the goals of the teacher, goals that are important only to the teacher, not me.	☐	☐	☐	☐	☐	☐	☐
During these class, I feel pressured.	☐	☐	☐	☐	☐	☐	☐
The different activities make me feel more connected to other students.	☐	☐	☐	☐	☐	☐	☐
Throughout my participation, I have choices as to what I want to do.	☐	☐	☐	☐	☐	☐	☐

Please comment on any aspects of health education class that you find particularly motivating and/or unmotivating.

Pre-production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Student's Name:

Researcher's Name: Tish Scott

School:

Why are you currently engaged in this activity? (pre-production; planning, proposal, storyboard, shot list)	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
Because I think this activity is interesting.	☐	☐	☐	☐	☐	☐	☐
Because I am doing it for my own good.	☐	☐	☐	☐	☐	☐	☐
Because I am supposed to do it.	☐	☐	☐	☐	☐	☐	☐
There may be good reasons to do this activity, but personally I don't see any.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is pleasant.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is good for me.	☐	☐	☐	☐	☐	☐	☐
Because it is something that I have to do.	☐	☐	☐	☐	☐	☐	☐
I do this activity but I am not sure if it is worth it.	☐	☐	☐	☐	☐	☐	☐
Because this activity is fun.	☐	☐	☐	☐	☐	☐	☐
By personal decision.	☐	☐	☐	☐	☐	☐	☐
Because I don't have any choice.	☐	☐	☐	☐	☐	☐	☐
I don't know; I don't see what this activity brings me.	☐	☐	☐	☐	☐	☐	☐
Because I feel good when doing this activity.	☐	☐	☐	☐	☐	☐	☐
Because I believe that this activity is important for me.	☐	☐	☐	☐	☐	☐	☐
Because I feel that I have to do it.	☐	☐	☐	☐	☐	☐	☐
I do this activity, but I am not sure it is a good thing to pursue it.	☐	☐	☐	☐	☐	☐	☐

Notes:

Pre-production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Please rate the following statements about the pre-production activities you took part in (i.e., planning, proposal, storyboard, shot list)	Not at all True	2	3	Somewhat True	5	6	Very much True
I felt like I was doing what I wanted to be doing.	☐	☐	☐	☐	☐	☐	☐
While doing these tasks, I felt a relaxed sense of personal freedom	☐	☐	☐	☐	☐	☐	☐
I had a choice whether or not to engage and participate in these tasks.	☐	☐	☐	☐	☐	☐	☐
I felt like I was doing what the teacher wanted me to be doing.	☐	☐	☐	☐	☐	☐	☐
While I was doing this task, I felt pushed, forced, and pressured.	☐	☐	☐	☐	☐	☐	☐
It made me feel closer to the other students.	☐	☐	☐	☐	☐	☐	☐
I felt it was my own choice about what to do, when to do it, and whether to do anything at all.	☐	☐	☐	☐	☐	☐	☐
I was pursuing my own goals, goals that were important to me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt free.	☐	☐	☐	☐	☐	☐	☐
I felt that I had control to decide what to do and whether to do it.	☐	☐	☐	☐	☐	☐	☐
I was pursuing the goals of the teacher, goals that were important only to the teacher, not me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt pressured.	☐	☐	☐	☐	☐	☐	☐
The different activities made me feel more connected to other students.	☐	☐	☐	☐	☐	☐	☐
Throughout my participation, I had choices as to what I wanted to do.	☐	☐	☐	☐	☐	☐	☐

Please circle your role(s) in the pre-production phase of video making: planning, proposal, storyboard, shot list, other.

Please comment on any aspects of the video making process that you found particularly motivating and/or unmotivating.

Appendix D

Production Video Making Questionnaire

Production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Student's Name:

Researcher's Name: Tish Scott

School:

Why are you currently engaged in this activity? (production; videotaping, sound,review/log footage, edit decision list)	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
Because I think this activity is interesting.	☐	☐	☐	☐	☐	☐	☐
Because I am doing it for my own good.	☐	☐	☐	☐	☐	☐	☐
Because I am supposed to do it.	☐	☐	☐	☐	☐	☐	☐
There may be good reasons to do this activity, but personally I don't see any.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is pleasant.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is good for me.	☐	☐	☐	☐	☐	☐	☐
Because it is something that I have to do.	☐	☐	☐	☐	☐	☐	☐
I do this activity but I am not sure if it is worth it.	☐	☐	☐	☐	☐	☐	☐
Because this activity is fun.	☐	☐	☐	☐	☐	☐	☐
By personal decision.	☐	☐	☐	☐	☐	☐	☐
Because I don't have any choice.	☐	☐	☐	☐	☐	☐	☐
I don't know; I don't see what this activity brings me.	☐	☐	☐	☐	☐	☐	☐
Because I feel good when doing this activity.	☐	☐	☐	☐	☐	☐	☐
Because I believe that this activity is important for me.	☐	☐	☐	☐	☐	☐	☐
Because I feel that I have to do it.	☐	☐	☐	☐	☐	☐	☐
I do this activity, but I am not sure it is a good thing to pursue it.	☐	☐	☐	☐	☐	☐	☐

Production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Please rate the following statements about the production activities you took part in (i.e., videotaping, sound, lighting, review/log footage).	Not at all True	2	3	Somewhat True	5	6	Very much True
I felt like I was doing what I wanted to be doing.	☐	☐	☐	☐	☐	☐	☐
While doing these tasks, I felt a relaxed sense of personal freedom	☐	☐	☐	☐	☐	☐	☐
I had a choice whether or not to engage and participate in these tasks.	☐	☐	☐	☐	☐	☐	☐
I felt like I was doing what the teacher wanted me to be doing.	☐	☐	☐	☐	☐	☐	☐
While I was doing this task, I felt pushed, forced, and pressured.	☐	☐	☐	☐	☐	☐	☐
It made me feel closer to the other students.	☐	☐	☐	☐	☐	☐	☐
I felt it was my own choice about what to do, when to do it, and whether to do anything at all.	☐	☐	☐	☐	☐	☐	☐
I was pursuing my own goals, goals that were important to me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt free.	☐	☐	☐	☐	☐	☐	☐
I felt that I had control to decide what to do and whether to do it.	☐	☐	☐	☐	☐	☐	☐
I was pursuing the goals of the teacher, goals that were important only to the teacher, not me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt pressured.	☐	☐	☐	☐	☐	☐	☐
The different activities made me feel more connected to other students.	☐	☐	☐	☐	☐	☐	☐
Throughout my participation, I had choices as to what I wanted to do.	☐	☐	☐	☐	☐	☐	☐

Please circle your role(s) in the production phase of video making: videotaping, acting, interviewing, lighting, sound, review/log footage, other.

Please comment on any aspects of the video making process that you found particularly motivating and/or unmotivating.

Appendix E

Post-Production Video Making Questionnaire

Post-production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Student's Name:

Researcher's Name: Tish Scott

School:

Why are you currently engaged in this activity? (post-production: editing (video, audio), final video, presentation)	Corresponds not at all	2	3	Corresponds Somewhat	5	6	Corresponds exactly
Because I think this activity is interesting.	☐	☐	☐	☐	☐	☐	☐
Because I am doing it for my own good.	☐	☐	☐	☐	☐	☐	☐
Because I am supposed to do it.	☐	☐	☐	☐	☐	☐	☐
There may be good reasons to do this activity, but personally I don't see any.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is pleasant.	☐	☐	☐	☐	☐	☐	☐
Because I think that this activity is good for me.	☐	☐	☐	☐	☐	☐	☐
Because it is something that I have to do.	☐	☐	☐	☐	☐	☐	☐
I do this activity but I am not sure if it is worth it.	☐	☐	☐	☐	☐	☐	☐
Because this activity is fun.	☐	☐	☐	☐	☐	☐	☐
By personal decision.	☐	☐	☐	☐	☐	☐	☐
Because I don't have any choice.	☐	☐	☐	☐	☐	☐	☐
I don't know; I don't see what this activity brings me.	☐	☐	☐	☐	☐	☐	☐
Because I feel good when doing this activity.	☐	☐	☐	☐	☐	☐	☐
Because I believe that this activity is important for me.	☐	☐	☐	☐	☐	☐	☐
Because I feel that I have to do it.	☐	☐	☐	☐	☐	☐	☐
I do this activity, but I am not sure it is a good thing to pursue it.	☐	☐	☐	☐	☐	☐	☐

Notes:

Post-production Questionnaire

Planning 10
Health Research Video Project
Motivation Questionnaire

Date:

Please rate the following statements about the post-production activities you took part in (editing (video, audio), final video, presentation).	Not at all True	2	3	Somewhat True	5	6	Very much True
I felt like I was doing what I wanted to be doing.	☐	☐	☐	☐	☐	☐	☐
While doing these tasks, I felt a relaxed sense of personal freedom	☐	☐	☐	☐	☐	☐	☐
I had a choice whether or not to engage and participate in these tasks.	☐	☐	☐	☐	☐	☐	☐
I felt like I was doing what the teacher wanted me to be doing.	☐	☐	☐	☐	☐	☐	☐
While I was doing this task, I felt pushed, forced, and pressured.	☐	☐	☐	☐	☐	☐	☐
It made me feel closer to the other students.	☐	☐	☐	☐	☐	☐	☐
I felt it was my own choice about what to do, when to do it, and whether to do anything at all.	☐	☐	☐	☐	☐	☐	☐
I was pursuing my own goals, goals that were important to me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt free.	☐	☐	☐	☐	☐	☐	☐
I felt that I had control to decide what to do and whether to do it.	☐	☐	☐	☐	☐	☐	☐
I was pursuing the goals of the teacher, goals that were important only to the teacher, not me.	☐	☐	☐	☐	☐	☐	☐
During these tasks, I felt pressured.	☐	☐	☐	☐	☐	☐	☐
The different activities made me feel more connected to other students.	☐	☐	☐	☐	☐	☐	☐
Throughout my participation, I had choices as to what I wanted to do.	☐	☐	☐	☐	☐	☐	☐

Please circle your role(s) in the post-production phase of video making: sound, video editing, narration, graphics, credits, titles, other.

Please comment on any aspects of the video making process that you found particularly motivating and/or unmotivating.

Appendix F

Student Reflection Questions

HEALTH VIDEO PROJECTS
REFLECTION PIECE

Answer each of the following questions. Please word process your answers and write in sentence form and print out. Your answers should be thoughtful and include lots of specific details.

NOTE: Do this part of the assignment individually. Your answers will likely not be the same as those of others in your group.

1. What expectations did you have for this video project?

2. Did anything surprise you? If so, what?

3. What did you do that seemed to be effective and/or ineffective in your group?

4. How did your understanding of your chosen topic change as a result of your research and production of this video?

5. What were the most difficult and most satisfying parts of the video project? Explain.

6. What do you think is your most valued contribution to the project?

7. What have you learned from both your disappointments and your successes during this project? Be specific.

Appendix G

Teacher Interview Question Schedule

Reflection Questions – Planning 10 Teachers - January 2010

1. How and why did you become involved in this research project?
2. What expectations did you have for the project?
3. What do you think that your students learned?
    a. successes
    b. challenges
4. What aspects of this project (if any) do you think may have motivated your students? Please explain.
5. As a part of the health education component for planning 10, was this useful? effective?
6. How did you assess and mark/grade this project? Were the grades comparable to previous work done by your students?
7. Would you do this type of project in another class? (i.e., video making) Why or why not? With what changes?
8. What did you learn?
9. Did anything surprise you? If so, what?
10. Is there anything else you'd like to add?
11. Do you have any questions you'd like to ask me?

Thank you very much for participating and contributing to my research!!!

Additional information:
current grade enrollment
student designations (i.e., esl, legally blind, etc.)
project mark
course mark
gpa
attendance

Appendix H

Participant Research Consent Form

Participant Consent Form

Effects of Video Making on Intrinsic Motivation in School Health Education

You are invited to participate in a study entitled Effects of Video Making on Intrinsic Motivation in School Health Education, which is being conducted by Tish Scott.

Tish Scott is a graduate student in the department of Curriculum and Instruction at the University of Victoria and you may contact her if you have further questions by phone at 250-721-3100 or email tishscot@uvic.ca.

As a graduate student, I, Tish Scott, am required to conduct research as part of the requirements for a doctoral degree. It is being conducted under the supervision of Drs. Ted Riecken and Jennifer Thom. You may contact my supervisors at 250-721-7757 or 250-721-7774.

Purpose and Objectives

This study will focus on the effects of a video making intervention involving meaningful choice on intrinsic motivation and self-determination of students taking the health education portion of Planning 10 classes. Self-determination theory research demonstrates that providing support for student self-determination will have positive learning and behavioral outcomes (Reeve, 2002; Reeve, Hamm, & Nix, 2003; Ryan & Deci, 2000; Ryan, Patrick, Deci, & Williams, 2008). The design of the video-making intervention is such that support for student autonomy and self-determination is optimized. Instruction will focus on guiding, facilitating, and scaffolding student learning in a structure designed to encourage problem solving, decision-making, and rationalization. As well, students will be encouraged to make personally relevant and meaningful choices for the health topics and genre of their videos. It is hypothesized that providing this kind of support will lead to increases in student engagement and motivation that may lead to positive learning and behavioral outcomes.

Importance of this Research

This study will focus on developing research skills using video production technology as a way to engage students in health issues that are of interest and relevance to them. Choice, volition, and control are key aspects of autonomy and self-determination. While research on self-determination and motivation points to positive learning and behavioral outcomes resulting from instructional support for student autonomy, competence and relatedness, much of the work has been done for relatively short term interventions (e.g., 15 minutes, an hour) and frequently in laboratory situations. Little work has been done with longer-term interventions or in naturalistic settings such as classrooms, which is what this research proposes to do. As well, research considering student video making in classrooms identifies motivation as key, yet fails to identify any details or specifics as to why the process is motivating. This study aims to provide information that will help us understand if, why and what is motivating about making videos. In addition, the videos that students choose to create may let us know what young people's health interests and concerns are and perhaps how we might apply this knowledge to work and research in media, health, and education.

Participant Selection

You are being asked to participate in this study because you are currently taking Planning 10 as part of your studies.

What is Involved

If you agree to voluntarily participate in this research, your participation *may* include: creation of a short video, completion of motivation questionnaires, completion of health related questionnaires, self-

reflective activities designed to engage you in a deeper look at your own learning and thinking during the video making process, a public presentation of your video, In each of these research activities, your responses will be recorded in a number of different ways, including audio tape, video tape, photograph, or your activities observed and recorded by a researcher and/or research assistant. These responses and contributions to the research will be reported in academic or professional journals, and may also be reported at conferences or workshops. Photographs or videos may also be collected to illustrate conceptual ideas or how the research study was developed, designed and implemented. Clips from these videoed events may also be included in conference presentations, workshops, research committee meetings, or education classes. A separate section of this form allows you to indicate if you wish to have such video clips used in sharing of the research data. As much as possible, your identity will be protected, however in the case of photos or videotape, it is possible that you could be personally identified. It is also possible that the researcher in this study may ask you to share materials that you have created as a part of the video making experience, such as your storyboard, video concept, script, notes, photographs, reports or journals.

Inconvenience
Participation in this study may cause some inconvenience to you, including the time involved in your participation. This is estimated to range from three to six (3-6) hours over the course of the study (about three to six months) in addition to three weeks of class time, depending on the activities requested by the researcher. You are under no obligation to participate in each of the activities requested, and may decline any offer of participation.

Risks
There are no known or anticipated risks to you by participating in this research.

Benefits
Students will benefit from participating in this research, as they will become more aware of their own interests, motivations, and understandings about the power of video making to inform and transform their health related learning and behaviour. They are also likely to benefit from processes of reflection and skill development embedded in the video making task. Students should be aware that this study is intended to bring about changes in how school health education programs and technology integration are viewed and structured, and therefore are making a significant contribution to school health education programming and school technology integration locally and potentially in other Canadian schools which will benefit students and teachers for many years to come.

Voluntary Participation
Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you withdraw from participating part way through the study, you will be asked to sign a form that indicates how you would like the data treated. The section on the informed consent document will give you two choices: I do not want any data related to my participation in this study included in the study's data analysis or findings OR I will allow you to use the data you have collected up until this point in the study.

On-going Consent
To make sure that you continue to consent to participate in this research, you will be reminded each week during the video making and at other research events that you have the right to refuse to participate in any or all of the activities being conducted, from answering any or all questions, and that you may withdraw from the research process at any time. You will also be reminded that you have the right, should you withdraw from the project at any time to have your comments and participation excluded from research study reports or publications by filling in the withdrawal section of this consent letter.

Anonymity
Findings focus on statistical means for individual and group change, not individual participants. In terms of protecting your anonymity, your identity will be protected through the use of pseudonyms where appropriate. There are some limits to anonymity, as the research when reported will identify Greater Victoria School District secondary schools. In addition, if student videos or other video footage is used, it may be possible to identify individual students. However, given the large number of students taking Planning 10 classes annually in the district, it is unlikely that any one, in reading the reports or research studies, would be able to identify you specifically.

Confidentiality
The confidentiality of data will be protected as all data such as audio tapes, CD's, field notes, artifacts collected and /or photographs and videos will be stored in either a locked office of the researcher or a password protected website. All computer based files will be stored only on password protected computers. Only members of the advisory committee and the researcher will have access to this data.

Dissemination of Results
It is anticipated that the results of this study will be shared with others in the following ways: directly to participants during follow-up meetings or events; published articles in scholarly and professional journals; at conferences, symposia, or workshops; in education classes at colleges/universities; in a dissertation; a book or chapter of a book; presentation or orientations to teachers; online in web based pdf documents or reports; reports or recommendations to school districts, university education programs, or ministry of education. Some data may also be posted on wikis, blogs, or a research website designed for the purposes of sharing research findings.

Disposal of Data
It is anticipated that the data will continue to be used for about five years. During this time, all data will continue to be stored in password locations (online and electronically) as well as in locked offices. When the data is deemed to have no more usefulness it will be destroyed. Electronic data will be erased and computer memories scrubbed; paper copies will be shredded.

References
Reeve, J. (2002). Self-determination theory applied to educational settings. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 183-203). Rochester, NY: University of Rochester Press.

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Contacts
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In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca).

Your signature below indicates that you understand the conditions of participation in this study and that you have had the opportunity to have your questions answered by the researcher.

_____	_____	_____
Name of Participant	Signature	Date

As a parent/guardian of this student participant, I **DO** or **DO NOT** give my permission for her/him to participate in this study. (**please circle your choice**)

_____	_____	_____
Name of Parent/Guardian	Signature	Date

I **PERMIT** or **DO NOT PERMIT** my image captured in photos or videos to be used in dissemination of research findings. (**please circle your choice**)

_____
(your initials here)

In the event you choose to withdraw from this study, please complete this section of the form.

Withdrawing from the research study

In the eventuality that you make a decision to withdraw from the study, please complete the following:

I, _____ wish to withdraw from this study.
(name)

I would like the details of my surveys, comments, or activities **INCLUDED** **EXCLUDED**
from the research study entitled "EFFECTS OF VIDEO MAKING ON INTRISIC MOTIVATION IN SCHOOL HEALTH EDUCATION". (Please circle one of the terms)

In the eventuality you ask for your information to be excluded, all comments that can be directly attributed to you during the research project will be removed. However, it may not be possible to remove all comments that may have been made in response to your participation in group activities, particularly if they inform the comments added by others. If this is the case, then these will remain as part of the data.

_____	_____
Signature	Date