

PARTICIPATION FACTORS IN OPTIONAL HIGH SCHOOL  
HEALTH AND PHYSICAL EDUCATION

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Submitted in partial fulfillment of the requirements for the degree of  
Masters of Arts in Applied Health Sciences  
(Health and Physical Education)

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## Dedications

I dedicate this Masters thesis to:

*My parents, Dave and Elizabeth - Without your emotional, physical and financial loving support, I would never have reached the point where this accomplishment would have been possible.*

*To my brother Eric – Your approach to adversity and life’s hurdles inspired me to push through the days when I was down on myself and thought I was in a tough place.*

*To Myself – Always remember, ‘everyday is a good day, some are just better than others’*

## Acknowledgements

There are a number of important people and organizations I would like to acknowledge. Without their assistance, support or openness and willingness to the research process, this project would not have been possible.

Firstly, my supervisor, *Dr. Ken Lodewyk*: Two years has just flown by, and I could not have taken that first step without your initial suggestion. Whether it was a thesis question, a swift kick, or a comfy chair to sit in and vent, your door was always open and there was always a warm greeting waiting for me.

I would like to thank my committee members at Brock; *Dr. Jamie Mandigo & Dr. Phil Wilson*. You each provided wonderful insights into this project in your own, and very unique ways. The guidance, patience and the new relationships that have grown are ones that made this thesis possible.

I would like to extend thanks to *The District School Board of Niagara*, especially the work of *Mr. Ron Lopez*. Without your support of my research, this project would never have gained the access to students needed to conduct a quality study. As well, I'd like to thank the 11 teachers and all the grade 10 students from the 16 classes and five high schools for their participation in this research project; with a special thanks going to *Miss Natalie Mercey*. Not only were you a great help in the schools, but your friendship is one that I hold closest.

Lastly, I would like to thank all the amazing people from *Brock University FAHS*. The administration staff, other professors and faculty members and last but certainly not least, the wonderful friends I have made through being in the department. Whether it was a casual drink, friendly hello, statistical help or a well timed joke, you were all the glue that helped me deal with the day-to-day pressures of this program.

## Abstract

Student enrolment rates in optional health and physical education (HPE) classes have been steadily declining, to the point where most Ontario students stop taking HPE after completion of their one required credit, typically taken in grade nine. This study looked at factors that could contribute to HPE enrolment, sampling 227 grade ten students from five schools. These factors included self-efficacy (SE), perceived autonomy support (PAS), task value (TV), motivational regulation (autonomous, AR; controlled, CR), HPE grade average and body size discrepancy (BSD). Qualitative information was also gathered from students regarding likes and dislikes of HPE, as well as reasons for their HPE enrolment choice. Cronbach Alpha values of each scale fell within acceptable values. ANOVA analysis revealed differences between enrolment groups in SE, TV, AR, HPE grade average, and BSD ( $p < .05$ ). Reasons students reported for not taking HPE included a dislike of health classes, scheduling challenges, not needing HPE for future endeavors, concerns about social self-presentation, and a dislike of sports and/or competition. This research shows important differences between students and their HPE class choices and calls for a re-evaluation of how HPE classes are structured, advertised and scheduled by high school practitioners. Future works should look toward what other factors could be at play in students' decisions for or against optional HPE and how those factors interact with the constructs that were found to be of significance in this study.

Keywords: Health and physical education, high school students, participation

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## Chapter I: Introduction

As the benefits of daily physical activity become more apparent for the long-term health of adolescents, reasons behind low activity levels in today's youth are increasingly scrutinized (Hildebrand & Johnson, 2001; Sallis, Prochaska, & Taylor, 2000). Sedentary lifestyles often lead to many health-related challenges later in life. These include heart disease and stroke (U.S. Department of Health and Human Services, 1996), being overweight or obese (Coleman, 2001; Yaussi, 2005), osteoporosis (Hills, King & Armstrong, 2007; Schneider, Dunton, Bassin, Graham, Eliakim & Cooper, 2007), and Type II diabetes (Segal & Gadola, 2008; Slawta, Bentley, Smith, Kelly & Syman-Degler, 2008). The benefits of living an active life are generally attainable to most; however, only 33% of Canadian adolescents aged 5 to 17 participate sufficiently in physical activity to optimally gain from it (Craig, Cameron, Russell & Beaulieu, 2001). According to a report by the Ontario Medical Association (2005), over the past 15 years the population of inactive youth has increased by an average of 12.5 percent, bringing the total population of inactive children to 30 and 25 percent in boys and girls, respectively. This report also predicts that this current generation of children (born 1990 or later) will be the first to have a shorter life expectancy than their parents.

This issue is not a local one. Many nations are having similar problems with inactivity levels, specifically in youth and adolescents. Around the world, 93 percent of nations have some form of mandatory physical education (PE) in

school curriculum (Hardman & Marshall, 2000), so student exposure to PE is not an issue; however, their enjoyment and personal importance placed on PE is. For example, in a British Parliamentary report (2003), 20% of American youth and close to 15% of British youth were considered inactive and at high risk for developing health problems, mainly due to inactivity. The World Health Organization (WHO; 2008) reported that 60% of individuals world-wide will fail to meet the recommendations for physical activity, with adolescents accounting for one third of that population. With inactivity levels increasing, interest in participating in physical activity and physical education classes has declined sharply (Owen & Bauman, 1992). Coupled with the trend of students losing interest in physical activity as they mature and move through high school (Lowry, Wechsler, Kann & Collins, 2001; Stephens, Jacobs & White, 1985; Van Wersch, Trew & Turner, 1992) enrolment rates in health and physical education (HPE) classes have decreased. For example, in Ontario (Canada), overall student enrollment in ninth-grade HPE classes dropped from 70.3% in 1999 to 60.4% in 2005 (Faulkner, Goodman, Adlaf, Irving, & Dwyer, 2007). There is a further drop of 50% in participation rates among 10<sup>th</sup> graders, when HPE becomes an optional elective class for students (Dwyer, Allison, LeMoine, Adlaf, Goodman, Faulkner & Lysy, 2006). Chen (2001), referred to a joint study done by the U.S. Department of Education and the National Center for Education Statistics when he examined this trend using a sample of 25,000 American students. It showed that even with student enrolment increasing at the high school level, the number of students choosing HPE classes dropped significantly; drops of 25%, 19%, and



21% for grade 10, 11, and 12 grade students, respectively (Chen, 2001). More declines were evident in females than in males (McKenzie, Marshall, Sallis & Conway, 2000).

Such trends have led the U.S. Department of Health and Human Services (2006) to call for a fundamental reform in the way schools and teachers approach the implementation and teaching of HPE classes and activity promotion. The call for change is arguably due to the many reported merits of quality HPE classes being presented in research-based studies. For example, school-based HPE classes offer the first experience for many children to engage in structured activity and represents as much as 20-40% of a child's total engagement in activity (Craig et al., 2001). In HPE, students are exposed to a wide variety of activities, games and experiences that may be unavailable to them outside of the school system. HPE may be the only opportunity for some children to learn about the benefits of physical activity, health or fitness (Corbin, 2002; Standage, Duda & Ntoumanis, 2005). In a societal setting, school-based HPE classes may have the greatest impact on public health by using existing infrastructure to instill a lifelong enjoyment of activity (Annesi, 2006; Sallis et al., 2000). This exposure to different activities and availability of resources increases the likelihood that a student will find enjoyment in an active pursuit and develop meaningful leisure habits that carry over outside of school and throughout life (Pate, Small, Ross, Young, Flint & Warren, 1995). In other words, HPE classes offer the greatest potential to reinforce the importance and instill feelings of enjoyment toward leading healthy and active lifestyles (Duda, 1996). With adolescence being

identified as the key time for habitual development, refinement, or adoption of lifelong healthy behaviors (Dishman, 1994), the role of HPE classes becomes increasingly integral.

The central aim of this study is to analyze relations between those who enroll and do not enroll in optional high school physical education. Within that aim are several objectives. First, relations between perceived autonomy support, self-efficacy, task value, autonomous regulation, controlled regulation, amotivation, body size discrepancy and HPE grade average will be assessed to further strengthen their use in this study. Moderate to high relationships ( $r = .30 - .70$ ) are expected between the constructs, which will signal that each construct represents some shared yet relatively unique information (variance) from the others (Tabachnick & Fidell, 2006). In other words, these relations will add support to the consideration and inclusion of various theoretical frameworks (SCT, SDT and body image) in this study. Based on previous works to be highlighted in chapter two, the second objective is to investigate differences in each construct between the two enrollment groups. Significant group differences are anticipated in each construct. Specifically, higher reported levels of perceived autonomy support, self-efficacy, task value, autonomous regulation, body size perceptions and achievement are expected in the CPE group than in the NPE group. In contrast, controlled regulation and reported amotivation is expected to be higher in the NPE group. Inconsistencies in research findings regarding gender differences in motivation, participation, and program adherence in HPE leads to the third objective of this study: to explore and report gender differences

in each of the constructs. In addition to analyzing gender differences, gender's interaction on enrollment grouping with regards to the chosen constructs will be explored. Lastly, qualitative information will be collected from students to help support and strengthen the quantitative findings and add a further dimension to the multi-faceted approach this study will be taking.

## Chapter II: Review of Literature

Research surrounding the benefits and the drawbacks of physical education, activity levels, classroom delivery, and curricular evaluations has aided in professionals building a wealth of knowledge in the field. Many variations in HPE classes are offered by provincial boards in Canada (Turkington, 2001). Only one province presently (Quebec) mandates HPE from kindergarten to grade 12 while also demanding that all educators be certified specialists in the field. Manitoba has begun the process to make HPE mandatory throughout high school having enacted a trial program (September 2008) with their ninth-grade students (Manitoba Ministry of Education, 2008). Other provinces (British Columbia, Alberta, New Brunswick, and Nova Scotia) also have requirements in place to ensure that students take an additional HPE education credit before graduating (Turkington, 2001). In Ontario, high school students must take only one HPE credit throughout high school to receive their Ontario high school diploma (Ontario Ministry of Education, 2000; 1999). Approximately 95% of all students only take the 'Healthy Active Living Education, PPL1O' course (Dwyer et al., 2006) as their one required credit, supporting research that has found that once students fulfill their HPE credit requirements, they no longer see the importance or value in taking additional HPE classes (Chen, 2001).

Existing research highlights a number of some key social and curricular concerns about students' desire to participate in HPE. For example, students who enjoy HPE state that repetition in curriculum is a large deterrent to participation

(Couturier, Chepko & Coughlin, 2005). Other factors influencing their choice include the lack of time to shower and/or to change, school mandated uniforms, requirements for fitness testing, fear of injury, and anxiety in a highly competitive classroom environment (Carlson, 1995; Luke & Sinclair, 1991). Hill and Clevon (2005) examined the choices that students enrolled in a HPE class made towards the activities in which they would like to participate. They found that ethnicity, school resources, and teacher likeability were the main contributing factors influencing student choice. Students who see relevance to real life, hold personal value toward achievements in the class, choice in activities, and gain joyful experiences from HPE classes are also more likely to participate (Chen, 1998; Tannehill, Romar, O'Sullivan, England & Rosenburg, 1994). Students who do not enjoy HPE classes also bring up social concerns. For example, they tend to dislike their teachers, fear ridicule or embarrassment in front of peers, are anxious about how they physically appear during or after class, and about lacking skills in the activities being taught (Chen, 1998; Cothran & Ennis, 1998; Ennis, Cothran, Davidson, Loftus, Owens, Swanson, & Hopsicker, 1997).

### *Multi-Theoretical Approaches to Physical Education*

In addition to considering demographic variables, it is important for our understanding of participation factors in HPE classes, to study internal factors that influence choice, behavior, and decision-making. In other words, adequately assessing HPE class attrition rates necessitates the consideration of holistic theories of motivation and self behavior. Since physical activity enjoyment and participation are influenced by so many different personal, social, and

environmental factors, integrating several theoretical approaches is a welcomed practice (Chen, 2001). Several researchers have summarized the use of multi-faceted, hybrid or combination theoretical approaches in previous works (Chatzisarantis, Hagger, Smith & Sage, 2006; Li, Lee & Solmon, 2005; Loucaides, Plotnikoff & Bercovitz, 2007; Sallis et al., 2000). “Hybrid” models often utilize constructs from several approaches. For example, the Trans Theoretical Model (TTM; Prochaska & DiClemente, 1983) has a component of self-efficacy, referenced to Bandura’s work (1977; 1986). Additionally, perceived autonomy support has been positively linked to motivational regulations (Williams, Rodin, Ryan, Grolnick & Deci, 1998), and to task value. This idea of integrating theories and their constructs, has also been suggested in the trans-contextual model for health behavioral research (Hagger, Baranowski, Wang, Barkoukis, & Chatzisarantis, 2005; Hagger, Biddle, Chatzisarantis, & Culverhouse, 2003).

The hybrid approach to be used in this study will apply constructs from social cognitive theory (Bandura, 1977; specifically self-efficacy), self-determination theory (Deci & Ryan, 1985; 2000; namely autonomy support and motivational regulation), expectancy-value models (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983; task value) and body image theology. By taking this mixed approach, this thesis will enable a broader understanding of multiple factors that may be involved in influencing participation in HPE, assess relatedness between the chosen variables and contribute new insight back to the original construct sources.

### *Demographic Influences*

Choices can be influenced by the age or the grade level of the students. Couturier and colleagues (2005) studied 5308 HPE students from grades 6-12 in the United States. Students in middle school (grades 6-8) were more inclined to participate in new endeavors; such as learning new games or trying different variations of games that they already understood. In comparison, high school students (grades 9-12) were more likely to participate in HPE classes for health benefits, and preferred to partake in activities/games they already knew and were successful/skilled at (Couturier et al., 2005). Hildebrand and Johnson (2001) studied undergraduate students and their physical activity choices outside of their program requirements. They reported that, similar to high school students, undergraduate students chose physical activities for reasons of enjoyment and personal interest. They also reported that most of the sample who had continued being physically active at the post-secondary level felt they had received a high quality of education and positive experiences in their high school HPE classes.

A number of demographic factors, besides age or grade, have been shown to influence participation factors such as gender, race, and ethnicity in physical education (Ryan, Fleming & Maina, 2003). Gender appears to relate to overall participation and the activity choices and enjoyment levels in HPE classes (Hannon & Ratliffe, 2007). Both males and female students show a drop in participation rates when moving into high school (Thompson, Humbert & Mirwald, 2003); with a greater decrease seen in the females sampled (Twisk, Kemper, & van Mechelen, 2000). From a longitudinal study of 35 individuals,

Thompson and colleagues (2003) reported on factors that held influence over physical activity and HPE participation in high school, with the main focus being to analyze how those experiences influenced the participant's activity in adulthood. It was reported that the main influences on the female participation rates were body image or shape concerns, the role of school peers and low confidence in one's skills and abilities in the HPE setting. Males reported similar factors holding influence over their choice; however, males put the greatest emphasis on the role of friends in determining their HPE involvement, followed by their perceived skill level. The role that peers and social pressures at the high school level has been examined previously. Works support the findings from the Thompson group's work by highlighting that with a highly active peer group, acceptance of both genders participation, reported activity levels are higher (Constantinou, Manson & Silverman, 2009). This link between skill and participation is one that has also been identified in previous HPE works (Couturier et al., 2005; Taylor, Blair, Cummings, Wun & Malina, 1999). Motivationally, a pair of studies has shown that females can be more affected through enjoyment and efficacious experiences in PE than their male counterparts (Lenskyj & van Daalen, 2006; Vallerand, 1997). For example, Kann, Kinchen, Williams, Ross, Lowry, Grunbaum, and Kolbe (2000) reported that girls were more inclined to participate in individual sports (e.g., gymnastics and track and field) whereas boys were more partial to team activities. Female students have also been identified as more concerned with the social aspects involved in taking a HPE class (Higgins, Gaul, Gibbons, & Van Gyn, 2003). Worries often appear



to revolve around social appearance and on concerns about a lack of shower/prep time following classes, personal hygiene, sweating in class, and peer judgments made about attire choices (Couturier et al., 2005; Ennis, Cothran, Davidson, Loftus, Owens, Swanson, & Hopsicker, 1997).

In relation to ethnicity, Hill and Cleven (2005) reported that, in a sample of over 800 multi-ethnic grade nine students from Southern California, 13 of 37 activity choices were significantly different ( $p < .01$ ) between ethnic groups, accounting for 37% of the standard curricular choices offered to students by their physical education departments (Hill & Cleven, 2005). Enrollment numbers have been shown to differ within ethnicity groups too. Couturier et al., 2005, reported that White and Hispanic populations made up over 68% of their total sample, equaling about 3600 students. The remaining 32% were made up of students with African-American, Arab, Asian, and Russian backgrounds. In another study, Martin, McCaughtry and Shen (2008), looked into various factors that affected Arab-Americans and the degree of effort they put into their physical activity, including HPE classes in school. The study concluded that Arab-American students were below the American standard for daily physical activity and less active than White or African-American populations. Also, the decision to participate in physical activity and HPE class was influenced most by personal enjoyment in the activities chosen and parental influences toward physical activity. Aboriginal populations show great disparity when analyzed for healthy behaviors. Specifically for physical activity, 50% of boys and 60% of girls do not meet federal standards for exercise (National Institute of Health, 1995). This

study also reported that over one-third of girls and one-eighth of boys had negative feelings towards their bodies and physical appearance. These studies are only a few of many that have analyzed the affect that racial and ethnic backgrounds could have on participation rates in HPE students. Ethnicity is acknowledged as a possible participation factor however, for the purpose of this study, ethnicity will only be collected to add information to the study's demographics and to better understand the makeup of the sample. In HPE classes, segregation does not occur along ethnicity lines, but along gender lines. With this in mind, gender will be analyzed more thoroughly.

There are also differences between urban and rural student's choices and desires for HPE classes (Loucaides et al., 2007). Rural students saw the benefits of taking HPE, understood the importance, and had above average participation rates. Urban students tended to be just as educated on the benefits of HPE, but were less inclined to choose a school-based HPE class, citing extra-curricular or non-school affiliated activities as a more popular choice (Loucaides et al., 2007). The availability of local resources and facilities, even the perception that opportunities were present, was shown to be a positive determinant of increases in student participation (Fein, Plotnikoff, Wild & Spence, 2004).

Studies previously mentioned have shown that, as students progress through high school, their motivation, enjoyment and participation decrease significantly (Chen, 2001; Faulkner et al., 2007). The above mentioned studies have all focused on students who are currently in HPE classes or students who have been removed from HPE classes for a length of time. Ntoumanis (2005)

looked at 460 students, age 15, and examined differences between participants and non-participants in physical education, with regards to a number of motivational markers. Ntoumanis' work was a two-part study, looking at students currently enrolled in HPE, followed by a second visit with the same students the following term. Findings from this study stress the importance of a self-determined HPE environment for optimal enjoyment and increasing active student participation. Even with this report, there is a lack of research toward students who recently made the choice not to enroll in an optional HPE class. For Ontario, that choice for most students occurs in grade 10, after their one mandatory credit has been completed in grade 9, as mentioned in the introduction. Students in grade 10 and above have the option of continuing with HPE classes or choose to pursue other optional academic classes. Multiple factors will be shown to be highly influential in a student's enjoyment of physical education, a key element of class enrolment (Couturier et al., 2005).

### *Social Cognitive Theory*

Social Cognitive Theory (SCT) proposes that human behavior is a result of the interactions of one's environment, their individual characteristics (called 'self'), and their behaviors (Bandura, 1977). This three-way, triadic interaction of constructs will ultimately be expressed by the individual as a choice toward the adoption, elimination, continuation, or modification of behavior. Even though all three constructs are said to have equal effect on each other, a high proportion of PE literature has focused around the 'self' concept, namely self-efficacy. Self-efficacy is defined as "people's judgments of their capabilities to organize and

execute courses of action required to attain designated types of performances" (Bandura, 1977, p. 391). In other words, self-efficacy is an individual's feelings toward their own ability to be successful at any given time, with respect to a specific performance or behavior. The construct of self-efficacy has shown to be highly influential on a person's behavior(s) in the classroom (Chan & Lam, 2008; Ozyurek, 2005) in personal aspirations (Mei, Wei & Newmeyer, 2008) and in the HPE class setting (Dishman, Motl, Sallis, Dunn, Brinbaum, Welk, Bedimo-Rung, Voorhees, & Jobe, 2005; Dishman, Motl, Saunders, Felton, Ward, Dowda, & Pate, 2004; Sallis et al., 2000). These studies, along with many others have identified self-efficacy as a major determining factor in student's effort level, engagement, willingness to actively participate, and perseverance in the HPE setting and general physical activity (McAuley, 1992; Moritz, Feltz, Mack, & Fahrback, 2000).

### *Self-Efficacy*

There are four determinants of self-efficacy: mastery experiences, verbal persuasions, vicarious experiences, and emotional arousal. Mastery experiences appear to be the most influential on one's self-efficacy (Bandura, 1986; Gorrow, Muller & Schneider, 2006). Numerous studies have identified self-efficacy as a key correlate to successful execution of skills or behavioral changes. Increasing personal levels of self-efficacy in a set environment can lead to lower perceptions of barriers to situational tasks, beliefs that barriers can be overcome, higher likelihood to act on intrinsic goals, and increases in personal enjoyment levels of the task (Dishman et al., 2005). Having a more optimistic outlook of the task

because of the intrinsic enjoyment being experienced has also been shown to lead to increases in positive feelings toward task value and the worth of the final product (Dishman et al., 2005; 2004).

Being efficacious in HPE has been identified as one of the key correlates to physical activity in children and adolescents (Dishman, Motl, Saunders, Felton, Ward, Dowda, & Pate, 2002; Salis et al., 2000). Self-efficacy is a primary determinant of moderate-to-vigorous physical activity, with more affect being observed with increases in self-efficacy and female subject's activity levels (Dishman et al., 2002). A study by Stewart, Pate, Ward, Saunders, and Riner (1999) concluded that self-efficacy was the strongest predictor of daily participation in healthy active behaviors and daily moderate physical activity. This research also found that students with higher efficacy levels had a more positive outlook during HPE classes and more importantly, they were more able to identify the benefits that regular participation in healthy activity affords them (Stewart et al., 1999).

Mastery experiences entail an individual having a positive, enjoyable, and a successful experience with the desired skill or behavior. With this successful episode, the individual builds confidence and self-efficacy toward the situation in question (Bandura, 1977). Such a high emphasis on situation-specific skills in HPE, building an environment which focuses toward student success and promoting efficacious experiences, will help to instill enjoyment in students (Sarrazin, Trouilloud, Bressaux, & Bois, 2006). These can lead to increases in self-efficacy, which in turn, help the individual approach challenging situations

more optimistically (Feltz, 1994). This cyclical pattern is a key to building the 'self' construct proposed in SCT which influences active behavioral choices.

### *Task Value*

Another sub-construct of the 'self' from SCT, which will be important to understanding attrition, is outcome expectations (Bandura, 1986; Netz & Raviv, 2004). Outcome expectations are the expected results and feelings an individual will have with regards to performing a task, skill, or behavior. In other words, it is the value and personal worth that an individual places on successfully completing a task. Derived from the idea of outcome expectations, is the concept of task value: the interest, importance and usefulness an individual places on the act of performing a behavior or task (Eccles et al., 1983). Schmidt and Lee (2005) found that the value one placed on the process of attainment, the outcome, and their belief that they could achieve the outcome (task efficacy) was a highly influential aspect when attempting to predict change. Students who can see the inherent value and worth in a class, the content learned and the benefits of their active participation, will be more engaged as a learner (Schmidt & Lee, 2005). Task value is broken down into four identifiable aspects: attainment value (importance), intrinsic value (interest), utility value (usefulness), and personal cost (Eccles et al, 1983). HPE has had to deal with the stigma of being a less important subject than other educational classes (Goodlad, 1984; Van Wersh et al., 1992). Students who see minimal benefits in taking HPE classes that are mandated, will be less inclined to take the optional classes or participate outside of the school environment in other active pursuits (Chen, 2001). Task value has

been shown to be a strong predictor in student intention to and effort during HPE class participation (Xiang, McBride, & Bruene, 2006; Xiang, McBride, & Guan, 2004).

Eccles and colleagues (1983) have taken the concept of task value and integrated it into a model they refer to as the expectancy-value model. Both variables (self-efficacy and task value) are based in an individual's perception of their ability to be successful in a given situation. In the expectancy-value model, these two variables are expressed as achievement beliefs and values and are measured as being linked to motivational outcomes (Eccles et al., 1983; Winfeld, 1994). As well, Gao, Lodewyk & Zhang (2009) also revealed predictive abilities of using a combined approach, part of which analyzed task value and self-efficacy. However, recent research has postulated that the two variables produce unrelated effects on individual motivation, participation, and achievement behaviors and should therefore be tested as separate entities (Vallerand, 2001).

### *Self-Determination Theory*

Deci and Ryan's Self-Determination Theory (SDT, 1985; 2000) is a collaboration of four smaller sub-theories working independently and together to predict behavioral change, specifically for this study, in the HPE classroom setting. SDT theorizes a motivational continuum which suggests that individuals can be motivated toward a behavior in one of three very different ways: intrinsically motivated, extrinsically motivated, or amotivated. These three classifications represent the locus of causality for the individual's motivation. The more intrinsically motivated one is, the higher the degree that their actions

and behaviors are autonomous and self-determined in nature (Deci & Ryan, 1985; 2000).

Both SCT and SDT place a heavy emphasis on the idea of ‘self’ being a key component to any behavioral choices. This focus on the internal locus of control, the idea that an individual is the key role player in any adoption or termination of healthy behaviors, is one that has been examined thoroughly in various aspects of healthy activity (Leary & Tangney, 2003; Standage & Treasure, 2002). However, SCT and SDT claim two very different avenues that the self affects behavior venues that make the inclusion of concepts from both theories integral and intriguing. As outlined previously, SCT represents a model that uses triadic reciprocation in which the three elements (self, environment, and behavior) all having equal influences. In other words, a positive increase in one construct will result in positive increases in the other two constructs. Hence, SCT is an individual’s evaluation of outside stimuli, interacting with previous experiences and their individual beliefs/values, resulting in the observed behavior (IDEA, 2008). SDT takes a more broad-based approach to predicting and explaining human health behaviors in its portrayal of self. Individuals are active in nature, growing, and evolving. However, every person has innate psychological needs that they constantly attempt to fulfill (Deci & Ryan, 1985; 2000). This drive can be expressed in many ways, such as an individual participating in a behavior that builds their internal desires, or by finding more autonomous avenues to complete a given task. Motivation can come in various



forms and can differ individually depending on the task, locus of causations or the behavior in question.

### *Intrinsic and Extrinsic Motivation*

According to SDT, intrinsically motivated behaviors are “those that are freely engaged out of interest without the necessity of separable consequences, and to be maintained, they require satisfaction of the needs for autonomy and competence” (Deci & Ryan, 2000, p 233). Individuals act, behave, or participate in a behavior or activity because they want to for themselves. The act of participation makes them feel better about themselves, creates senses of joy or enjoyment, and is done so without external forces. Internally-motivated behaviors are performing behaviors for pure individual satisfaction.

Externally-motivated behaviors are influenced by forces outside of the individual. External motivation is made up of four different forms of motivational regulations. These four forms are structured in a continuum; external, introjected, identified, and integrated, with integrated being the most intrinsic in nature and external being the most extrinsic (Deci & Ryan, 1985; 2000). External regulations are controlled by outside means, with rewards or unwilling participation being prime examples. Introjected behaviors are a result of an individual wanting to avoid negative internal feelings. The act of calling a distant relative to talk, even though the caller does not particularly want to, but would feel guilty if they did not call, is an introjectedly regulated behavior. Behaviors that are understood as important, but are not enjoyed (such as going to the dentist for a checkup or routinely flossing) are considered identified

behaviors. The individual recognizes the importance of the behavior, is not pressured by outside influences, but they take no enjoyment out of fulfilling the duties. Finally, integrated behaviors are ones that offer tangible, personal benefits to the individual. There is a level of internal reward with participating in the behavior that outweighs a lack of desire to participate (Deci & Ryan, 1995; 1985; Vallerand & Bissonnette, 1992). Going to the gym to lose weight is an example of integrated regulation. The drive to lose weight is internal in nature, but there is a level of personal awareness involved, removing the element of it being a pure and delightful experience from the activity. SDT claims that as an individual moves closer to achieving intrinsic-regulation they will be more motivated out of autonomous actions, joy, and internal self-betterment, rather than more extrinsic influences (Vallerand, 1997). Being more intrinsically self-determined has been shown to be a precursor for future exercise and activity participation (Duda, 2006). Also, if internal motivation toward the desired behavior is high, the likelihood of being successful in the behavior will increase (Chen, 2001).

In HPE students, being intrinsically-motivated in the classroom setting has lead to personal investment in the course materials and the process of learning. Higher levels of creativity, engagement, appreciation of content and an overall deeper quality of learning occurs with intrinsically-regulated students (Deci & Ryan, 2000). Successful mastery experiences will fuel the beginnings of habitual practice and help to adopt a behavior into one's regular routine (Duda, 1996) and in turn, raise levels of personal efficacy for this behavior. In comparison, students

in an environment where intrinsic goals are not instilled, tend to experience lower enjoyment levels and poorer performances (Chen & Ennis, 2004).

### *Amotivation*

The third form of motivation is amotivation. Amotivated individuals have neither intrinsic nor extrinsic orientations towards a behavior (Kilpatrick, Hebert & Jacobsen, 2002). No enjoyment or pleasure is experienced through participation and no benefits, internal or external, will be gained by the individual. There is little, if any value placed on the final product or outcome(s) (Ryan & Deci, 2000; Vallerand, 1997). Few studies have looked into the idea of being amotivated in a HPE setting and the effects this motivational state has on participation. In SDT literature, amotivation is a result of not satisfying one's basic needs, a sub-concept within SDT (Deci & Ryan, 1985; 2000; Ntoumanis, 2001). The major hurdle with identifying amotivation is that it is difficult to observe and quantify. In HPE classes, amotivational behaviors have been shown to include low attendance, inactivity during class, boredom, and beliefs that health and/or physical education holds no value or purpose (Ntoumanis, Pensgaard, Martin & Pipe, 2004). Ntoumanis and colleagues (2004) also tie the concept of task value and confidence to amotivation. With a perceived lack of value in the participation in physical activity during HPE classes, there is no innate drive to reach goals or perform well. Secondly, with the absent of confidence in the classroom, students feel less able to achieve the standards in place, or to succeed in a given situation. This is what Bandura and SCT supporters would call a lack of self-efficacy. Referring to Pelletier, Dion, Tunson and Green-Demers (1999),

the concept of capacity beliefs is introduced which denotes the belief of an individual that they can successfully achieve and complete a task based on the specific situation facing them.

### *Autonomous and Controlled Regulations*

When focusing on these motivational regulations, similarities can be drawn when directly observing the sources of regulation. Intrinsic, integrated, and identified motivation are said to have autonomous sources. External and introjected behaviors are derived from controlled sources; sources that are extrinsic in nature. Amotivation is not related to either of autonomous or controlled regulation (Ryan, Chandler, Connell, & Deci, 1983; Ryan & Connell, 1989). Many studies have taken this combination approach to looking at motivational regulation. Williams, Grow, Freedman, Ryan, and Deci (1996), looked at autonomous versus controlled motivation with regards to weight loss. Williams and colleagues (1998) looked at how autonomous-regulations affect adherence to a medical program, finding that not only was being autonomously motivated strongly related to adherence, but that perceived autonomy support (to be outlined upcoming) also was an important factor. With this study taking a combination, exploratory approach and not directly testing the constructs of SDT, the use of a full self-regulation assessment (based around the six motivational facets) was deemed unnecessary

### *Basic Needs*

The second sub-theory of SDT that was integrated is that of basic needs. Basic needs is based on the idea that human's have needs that constantly are

attempting to be satisfied. These needs, competence, relatedness, and autonomy are defined as being innate, compatible and exerting universal good affects on one's self (Deci & Ryan, 1985, 2000). SDT assumes that individuals are motivated to fulfilling these needs and the striving for this satisfaction is an expression of self-determined actions. Individuals wish to feel competent in their endeavors and look competent to their peers while participating in the chosen activity or behavior. A level of relatedness needs to be felt by the participant. Relatedness can be to others in the group, to the activity itself, to the instructor, or to an end goal of the individual. Finally, participation needs to be autonomous in nature where individuals feel that they have independent control, choice, and a certain amount free will through involvement. When individuals feel high in any of these basic needs, internal motivation toward the activity providing them with these feelings will increase, along with personal enjoyment and engagement in the task (Deci & Ryan, 2000) Lacking in basic needs fulfillment can lead to withdrawal from the activity, resentment, and movement toward amotivation for the behavior (Vallerand & Ried, 1984).

Driving to satisfy these needs appears to influence on levels of intrinsic motivation toward activities that achieve that satisfaction (Ntoumanis & Biddle, 1999; Whitehead, 1993). Autonomous regulation has been able to predict greater adherence to medical prescription, smoking cessation, and weight loss (Duda, 2006). The same can be said for school-based instruction with autonomy supportive classrooms being correlated to higher academic-related behaviors in students (Ratelle, Larose, Guay & Sene`cal, 2003). An autonomous climate is

one that focuses on the student which offers up control to the student, rather than that control being held by the teacher. Giving students options, choices, independent, and cooperative learning or decreasing pressure filled activities/examinations can all help with the creation of the autonomy-supportive classroom (Reeve 2002; Reeve, Bolt & Cai, 1999). By providing students with an environment that is autonomous in nature, instructors can increase self-efficacy in their students toward the situations presented in that environment. Through increasing self-efficacy (perceived competence), students can become more self-directed and intrinsically motivated for pursuing academic endeavors in a school setting (Reeve, 2002). As well, this environment will help to provide students with more adaptive strategies to deal with problems or challenges faced during their time in the classroom (Flink, Boggiono & Barrett, 1990). By not providing an autonomy-supportive classroom, students can become more extrinsically-motivated. Student outlook alters from being focused on self-improvement and goal achievement to being consumed by personal egos, marks, or rewards for task completions (Sarrazin et al., 2006).

Initiation of self-directed classrooms from the school system is even more essential with the knowledge that social support from family and friends has been shown to decrease as individuals move into high school (Garcia, Pender, Antonakos & Ronis, 1998). This finding coincides with the idea that parental influences, support from home, peers, and teachers can have a great effect on an individual's desire to participate in physical activity as well as their general beliefs of the worth of HPE classes (Loucaides et al., 2007). Motl, Dishman,

Saunders, Dowda, and Pate (2002) simulated an environment that focused on aspects of these basic needs and how increases these aspects would affect physical activity levels in HPE classes. The classroom was developed to be highly supportive and autonomous through targeting guidance, nurturance, and reassurance of worth for the 1655 female participants. By doing so, increases in the basic needs were observed (autonomy being the most noticeable) as well as the self-reported activity levels. The combination of increasing intrinsic motivation levels and feelings of positive autonomous actions can lead to greater exercise adherence and more likely maintenance of physical activity in a daily lifestyle (Duda, 2006).

#### *Perceived Autonomy Support*

Originating from this supportive and autonomous environment ideology is the idea of an individual's perception of their autonomy in a situation. Perceived autonomy support (PAS) is the perception that one has the belief that they are supported with choice, guidance, and autonomy in their endeavors by others in their lives (Hagger et al., 2003). Vallerand (1997) showed the importance that autonomy-support provided by people of influence (teachers, parents, administration) influenced student's feelings toward the challenge. With higher degrees of PAS felt by the student, teachers can influence student's positive feelings of needs satisfaction. Ntoumanis (2005) corroborated this by showing that a HPE teacher's support of their students' achievement of basic needs was a key determinant of student satisfaction and self-determined actions. HPE teachers are the most important factor to a successful, engaging, and self-determined

student (Matrin, Kulinna, Eklund & Reed, 2001). A teacher's expectations, teaching methods, and curricular approaches can all influence students' behaviors and motivation (Good & Brophy, 2000; Pelletier & Vallerand, 1996). Through striving to create a self-determined, autonomous, and efficacious learning environment, instructors can instill value beliefs, efficacy for physical activity, and increase levels of internal motivation in their students (Martin & Kulinna, 2005; Sarrazin et al., 2006). Ntoumanis (2005) concluded that through needs satisfaction, the creation of autonomous HPE classrooms, and self-determined motivation, levels of high school student participation can be improved.

### *Body Image and Self-Perceptions*

The last factor to be examined in the quest to better understand student choices, relative to enrolling in optional high school HPE, centers on body image. Body image involves an individual's perception of their body and how they are interpreting other's feelings toward their body. These individual self-perceptions can have an influence on motivation, participation, and enjoyment in HPE classes (Martin & Mack, 1996; Mendelson, McLaren, Gauvin & Steiger, 2002; Treasure, Lox & Lawton, 1998). Body image has various interpretations. Davis (1997) defined body image as the manner in which we view our own body and the mental representation we have of it. These personal concerns about body image come to the forefront as children move into puberty and the process of self-comparison becomes a worry factor (Duncan, Al-Nakeeb, Nevill, & Jones, 2004). Negative self-evaluations and perceptions have been shown to be a harmful factor in one's personal motivation and self-confidence. As well, these negative feelings



can be a barrier to exercise and participation in physical activity (Treasure et al., 1998). In contrast to that, positive body image can increase physical activity, confidence, and motivation toward healthy activity (Duncan et al., 2004). The issue of negative body image is more predominately found in adolescent females. Males however, also have been shown to be affected by body image concerns, just not at the same proportions as with women (McCabe, Ricciardelli, & Finemore, 2002; Schur, Sanders, & Steiner, 2000).

HPE classes put even more emphasis and focus on the bodies of the students, creating a higher situation for anxiety about body image (Gammage, Martin Ginis, & Hall, 2004). Shorts and t-shirts or HPE uniforms all can put more attention on an individual's body and open personal appearance to judgments and evaluations. Skill-based testing, peer evaluation and individual activities all put the participant on display for the class' assessments. With HPE having so many possibilities for peer evaluations and negative body image assessments, an individual's level of satisfaction toward their bodies becomes an interesting factor to include in this study.

### *Objectives*

In this research study, differences will be examined in self-efficacy, task value, perceived autonomy support, body image, achievement, autonomous regulation, controlled regulation, and amotivation between male and female high school students who chose to enroll in optional HPE classes and those who chose not to enroll in HPE classes. As noted earlier, a key element of this particular study is the integration of several theoretical frameworks in a so-called hybrid

approach which have been utilized previously in research (e.g., Lodewyk, Gammage, & Sullivan; in press). Further, findings by Ntoumanis and colleagues (2004) and others (e.g., Li et al., 2005; Vallerand & Reid, 1984) showed an association with amotivation and a lack in the fulfillment of one's autonomous needs; with lower levels of observed perceived competence, a derivative of self-efficacy. Positive autonomously-regulated motivations tend to occur when individual's "attach value to the relevance of the task" (Li et al., 2005, p. 52) and participate for the pure enjoyment. Highly efficacious students are also more likely to find inherent value in tasks that they are asked to participate or perform in, in the classroom or the gymnasium (Dishman et al., 2005). Finally, student's self-perceptions (body image) have been shown to be highly influential in their motivation levels (Pelletier & Vallerand, 1996). These body image concerns can be influenced through the environment in which students are placed, and whether or not they have feelings of autonomy during participation (Fox, 1997; Thogersen-Ntoumani & Ntoumanis, 2007). Scholars like Chen (2001) have welcomed the use of a hybrid approaches in educational research to better account for the wide variety of constructs in HPE that may influence students' decisions to participate or not to participate in optional high school HPE after their mandatory credits have been completed.

This study will investigate a number of variables that have been shown previously to effect involvement in physical education, adding relevant information to the call for further understanding of patterns, enrollment and participation in HPE classes (Allison & Adlaf, 2000; Higgins et al., 2003). HPE

students in tenth-grade will be analyzed and compared in the aforementioned chosen constructs as well as qualitative accounts collected from students. Students enrolled in optional physical education (CPE) and those who have not chosen to enroll in optional physical education (NPE) will be compared. Differences between genders will also be analyzed and assessed. Ultimately however, this study will investigate the two enrollment groupings and how they differ along the selected constructs, which will increase understanding of factors that are involved in students' choices about whether to enroll in optional HPE classes.

## Chapter III: Methodology

### *Participants and Procedure*

The initial sample consisted of 236 volunteering students from 16 separate classes, within five different high schools in the District School Board of Niagara (DSBN), located in Southern Ontario, Canada. This sample size was determined to be appropriate through reference to Cohen (1992) and the presented criteria for statistical power for a study of difference. Parental/guardian permission was attained for participants through an introductory letter, informed consent, and a permission form (see Appendix A, B and C). Nine cases were removed after completion of a Mahalanobis distance analysis, with the Chi Square criteria for exclusion of  $>66.9$ , as recommended for a sample of this size (Tabachnick & Fidell, 2006). This resulted in a final sample of 227 participants, of which 118 were females (51.98%) and 109 were males (48.11%). Within this sample, 127 (55.9%) were currently enrolled in a HPE class (CPE) and the remaining 100 students (44.1%) were not enrolled (NPE) in optional (tenth-grade) HPE.

Descriptive analysis of information collected on the *Demographics Questionnaire* (DQ), revealed that the sample was made up of, Caucasian (77.5%), Asian (6.3%), Euro-Canadian (7.2%), and other (Hispanic, African-Canadian, Arabic, Native and Samarian; 9.1%) participants living in an urban (64.3%) or rural (35.7%) setting. Participants self-reported activity levels of: Never (4.4%), 1-2 times a week (20.3%), 3-4 times a week (31.3%), 5-6 times a week (22.5%) or everyday (21.6%).

Participants were all sampled during their grade 10 Career and Civics (CC) classes during a six-week period following the school district's first semester exam period. The CC courses were chosen because they are a required credit for all tenth-grade students and are de-streamed (not having an academic or applied designation). The teachers of these courses will be able to justify the time allocation as preparation for the mandatory grade 10 literacy test (a test that is conducted later in the school year) or as an element of social responsibility. To participate in the study, participants must have been enrolled in one grade nine HPE course during the previous year at a school within the DSBN jurisdiction. The DQ, as well as a questionnaire consisting of three short and established measures (Appendix C) was administered to each participant by the author during their regularly scheduled CC class. Completion of the two questionnaires required approximately 10-15 minutes for most students, with all students being done in 20 minutes.

The DSBN's HPE curriculum was consistent with that mandated by the province of Ontario Ministry of Education's most recent curriculum that was released in 1999. Key elements of the ninth-grade content are a demonstration of movement skills, active participation, physical activity improvements, appropriate decision-making, and gaining knowledge about sexual changes/habits, drug use, and alcohol (Ontario Ministry of Education, 1999). In an attempt to gain insights into the DSBN's HPE teaching practices, a short interview was conducted with the DSBN's HPE consultant prior to the selection of schools for participation. Through interviewing an HPE consultant for the board, an understanding of

pedagogy used by DSBN employees (HPE teachers) was attained. However, individual school and teaching differences still existed, but they were expected and were largely unavoidable.

### *Measures*

*Demographics:* The *Demographics Questionnaire* (DQ) asked students for information about their sex, grade, current enrolment status in HPE, physical activity outside of the classroom, school setting, likes and dislikes of HPE, and estimates of achievement (a percentage grade) in HPE. Where possible ( $n = 55$ ), participants actual ninth-grade HPE marks were obtained and used from the school's student services. When these grades were not available, the self-reported grade ( $n = 172$ ) collected on the DQ was used. Self-reported estimates of achievement have been used in educational research and, though not as accurate as an actual grade, self-estimated grades have been shown to be reliable and consistent (Winne & Jamieson-Noel, 2002); findings that were backed by a correlational analysis between the actual and self-reported grades of this sample ( $r = .66, p < .01$ ).

Before students advanced to the quantitative measures section of the questionnaire, an opportunity to provide personal, qualitative information was given. Participants were asked to complete (in writing) three open-ended questions on the DQ in an attempt to gain insight into their thoughts and feelings about their previous HPE experience. The questions were: "What factors influenced your choice to take or not take 10<sup>th</sup> grade physical education and health?", "What are some aspects of physical education and health classes that

you enjoy?”, and “What are some aspects of physical education and health classes that you dislike?” These questions also serve to activate students’ recall for completing the quantitative portion of the questionnaire (Lodewyk & Winne, 2005).

*Perceived autonomy support:* To assess student’s levels of perceived autonomy support (PAS) in HPE, a short (six-item) form of the *Learning Climate Questionnaire (LCQ)* was used. The measure was first developed by Williams and Deci (1996) for use in an educational setting; than validated for high school physical education by Ntoumanis (2005) and others (e.g., Standage, Duda & Ntoumanis, 2006; Standage et al., 2005). Students responded to each of the six items using a 7-point Likert scale (“1 = *not at all true of me*” to “7 = *very true of me*”). A sample item from the measure is, “I feel that my physical education teachers provide me choices and options.”

*Self-efficacy and task value:* Self-efficacy (SE) and task value (TV) were assessed using eight and six item statements, respectively, found in their corresponding sub-dimensions within the *Motivated Strategies for Learning Questionnaire (MSLQ)*. The MSLQ is an 81-item tool developed by Pintrich, Smith, Garcia, and McKeachie (1991), that assesses students’ motivation and use of learning strategies in a course of study. Among the constructs the MSLQ measures is SE and TV. The MSLQ has been used worldwide in many studies, has demonstrated suitable reliability and validity (Duncan & McKeachie, 2005), and has been employed successfully in HPE settings (Lodewyk et al., in press; Ommundsen, 2006; 2003). Participants respond using a 7-point Likert scale,

ranging from “1 = *not at all true for me*” to “7 = *very true for me*”. A sample statement for SE is “I will receive a high grade in physical education.” The same 7-point Likert scale will be employed for TV assessments, as participants are asked to respond to the six items. A sample statement for TV is “I think I will be able to use what I learn from PE in my other courses.”

*Motivational regulation:* Motivational regulation was assessed using the *Treatment Self-Regulation Questionnaire (TSRQ)*. Developed from research by Ryan and Connell (1989), it was first used by Williams, and colleagues (1996), to assess ‘behaving in a healthy way’ in their participants. The questionnaire has been used to analyze why people choose to participate or not participate in a healthy behavior, adopt a positive behavior, or change a negative one (Ryan, Plant, & O'Malley, 1995; Williams, Cox, Kouides, & Deci, 1999). The TSRQ has three sub-scales that test the motivational constructs of SDT as combined items: autonomous regulated motivation (AR; most self-determined, intrinsic in nature), controlled regulated motivation (CR; extrinsic forms) and amotivation (AM). Used previously in studies for diet, exercise adherence and drinking behaviors, Williams, Ryan and Deci (1999) comment on how the TSRQ can also be used to test other behaviors, such as physical education attrition. The TSRQ is a 15-item measure (six autonomous, six controlled and three amotivation items), which asks participants to comment on a set of statements using a 7-point Likert scale. A sample statement for CR is “Because I want others to see I can do it.” Subscale  $\alpha$  values of 0.81 and 0.84, were found and validated for autonomous and controlled motivations, respectively, by Williams, Freedman and Deci (1996).



*Body size discrepancy:* Body size discrepancy (BSD) was assessed using a silhouette measure (Furnham, Titman, & Sleeman, 1994; Thompson & Gray, 1995). In this measure, nine gender-specific figures are presented in a continuum of body types ranging from ectomorphic to mesomorphic and finally to endomorphic. These three ranges are defined by Carter and Heath (1990), as endomorphic being a rating to the relative fatness of the body; mesomorphic, the lean body mass or musculature present in one's body; and ectomorphic as the ratio of the height to the weight depicting the relative linearity of the body. In other words, the more overweight one is, the more endomorphic they are. Mesomorphic individuals identify with muscle volume, tone and lean mass whereas those more ectomorphic identify with tall, skinny and low muscle tone images. Body types were be coded ("1" = ectomorph; "5" = mesomorph; "9" = endomorph). Students rated which figure best represents how they feel they currently look (perceived body type) and also how they want to look (ideal body type). The participant's BSD score was calculated by subtracting the ideal score from the perceived score. A positive score indicates that an individual wants to be more ectomorphic, whereas a negative score signals that an individual wants to be less ectomorphic.

### *Data Analysis*

#### *Quantitative analysis*

This study employed five data analyses procedures to assess the data. First, descriptive statistics were examined to review the distribution and characterization of all demographic variables of interest using the Statistical

Package for the Social Sciences (SPSS Version 16.0). Second, internal consistency reliability coefficients were computed for each scale (construct). Third, bivariate (Pearson) correlations were analyzed between each variable (PAS, SE, TV, AR, CR, AM, BSD, and HPE grades). Fourth, two-by-two analysis of variance (ANOVA) procedures were performed ( $p < .05$ ), to determine differences between enrolment groups (CPE and NPE), gender (males and females), and interaction effects (group by gender) in each of the constructs.

### *Qualitative analysis*

Qualitative analysis of the open-ended questions was conducted using a framework developed by the National Centre for Social Research in the 1980s (Ritchie, Spencer & O'Connor, 2003). Responses were first read to identify useful themes, with all responses being recorded according to group membership (CPE, NPE, male or female; Strauss & Corbin, 1998). Recorded results were then grouped according to thematic content. These groupings were reviewed and verified by a fellow graduate student researcher from the same university by taking a sample of the raw qualitative data, the primary researcher's coding scale and personally itemizing the data. This independent coding was then matched to the primary researcher's findings, showing highly consistent coding practices (97.2%) for dislikes of HPE and (98.6%) for likes of HPE. Discrepancies in coding were discussed and subsequently coded based on mutual agreement of appropriate thematic voice. This was done to ensure that the initial coding of raw responses, groupings and sub-groupings of responses were verifiable, as well as that primary researcher bias was controlled; a standard practice for independent

qualitative reporting (Miles & Huberman, 1994). Responses that had multiple thematic categories were entered under each respective theme in their assigned grouping. Prominent and prevalent themes are reported and discussed in the results and discussion sections. When accurately representing a specific theme, a number of responses from the participants have been included as examples in the results section.

## Chapter IV: Results

The main intent of this research study was to identify differences between high school students who had recently chosen to enroll or not to enroll in optional high school HPE classes. Stemming from the main intent were three objectives. First, relations between perceived autonomy support, self-efficacy, task value, autonomous regulation, controlled regulation, amotivation, body size discrepancy and HPE grade average were assessed to further support their use herein. Secondly, an analysis of group differences between CPE students and NPE students was conducted. Higher reported levels of perceived autonomy support, self-efficacy, task value, autonomous regulation, body size perceptions and achievement were expected in the CPE group than in the NPE group. Controlled regulation and reported amotivation were predicted to be higher in the NPE group. The last objective was to explore and report gender differences in each of the study's constructs.

### *Descriptive Statistics*

Frequency distributions were analyzed for missing data points on each of the 35 questionnaire items. Screening revealed 22 missing points, which were replaced by the mean of the closest eight recorded data points for that item. BSD scores were completed after subtracting the participants reported "ideal body score" (what body type they desire for themselves) from their "perceived body score" (how they see their bodies currently). No re-coding was necessary for items as each item had a positive valence.

Internal consistency reliabilities were computed for: perceived autonomy support (PAS; .90), self-efficacy (SE; .91), task value (TV; .90), autonomous regulation (AR; .90) and controlled regulation (CR; .76), all being acceptable levels for Cronbach's alpha scores (Tabachnick & Fidell, 2006). However, the amotivation (AM; .50) subscale revealed a low reliability value and was subsequently removed from further analysis. Scale means for all eight variables were calculated to represent responses from the individual scales (see Table 1). The mean of academic achievement was 78.82% ( $SD = 9.48$ ) whereas it was 81.79% ( $SD = 8.75$ ) for reported HPE grade. Analysis of the skewness (- 1.85 to 1.68) and kurtosis (-1.19 to 2.57) revealed that both were within the suitable range of +/- 3 (Tabachnick & Fidell, 2006). Scale means of the items also fell within appropriate range for skewness (- 1.36 to 0.56) and kurtosis (- 0.52 to 2.45).

### *Construct Relationships*

Bivariate Pearson correlations were conducted for all scale measures, as well as BSD and HPE grade average (see Table 2 for complete results). Observed correlations provided strong support for the inclusion of the items used for this study. Of the 21 possible bi-variate relationships tested, 16 (76.2%) held significance at a  $p < .01$  level. Moderately-high relationships were revealed between PAS and SE ( $r = .52, p < .01$ ), and TV ( $r = .60, p < .01$ ). SE was positively correlated to TV ( $r = .71, p < .01$ ), and HPE grade average ( $r = .47, p < .01$ ). Lastly, TV was related to AR ( $r = .68, p < .01$ ). Looking at inter-relatedness between the theoretical backings, analysis showed that constructs taken from SCT (SE and TV) related highly to those from SDT (PAS, AR, and CR).

### *Group Differences*

Results from the student responses to the open-ended questions revealed several general trends and themes across the sample and revealed others within various groups of students (Gender, NPE, and CPE). In total, 661 responses were coded into these four possible groupings (see Appendix D the full itemized groupings and responses). General concepts that were common across all participants, and mentioned at least once on the DQ's short answer response section, were that activities chosen ( $n = 428$ ), health class ( $n = 179$ ), and the social aspects of HPE ( $n = 65$ ) carried importance both positively and negatively for all subjects. General "likes" that were shared regardless of grouping were that students enjoyed playing sports/games ( $n = 155$ ), health class (learning about one's body, drug and sexual awareness, nutrition;  $n = 53$ ), social aspects of HPE (friends took the class, ability to socialize;  $n = 33$ ), and HPE acting as a break from "regular school activities" ( $n = 29$ ). Participants also shared number of reported "dislikes" of HPE regardless of enrollment status or gender. Negatives to HPE class that were reported by all groupings were choice of activity (participating in undesired sports/games, fitness training, competitive settings;  $n = 159$ ), health class (being in a classroom setting, work load, tests;  $n = 126$ ) and social factors (showering, changing, after class appearance/feeling unclean;  $n = 32$ ). Two students reported that "I hate being in the classroom, gym class is about being active, not sitting in desks; a CPE male" and "The feeling of being sweaty and hot for the rest of the day; a NPE female."

### *Differences in enrolment groupings*

All groups were compared for differences between the seven variables of PAS, SE, TV, AR, CR, BSD and HPE grade average. Two-by-two analysis of variance (ANOVA) procedures were performed ( $p < .05$ ), to determine differences between enrolment groups (CPE and NPE) and gender (males and females) in each of the constructs and their main effects. Initially, ANOVAs were performed to analyze the interaction gender had on the chosen constructs with relation to enrollment choice, reported in Table 3. Gender had no significant interactions effects with student enrollment choice for any of the chosen constructs, with the highest interaction level being revealed in PAS,  $F(3, 223) = 2.49$ ,  $p = .15$ ,  $ES = .01$ . Significant main effects ( $p < .05$ ) were found after the analysis of PAS,  $F(3, 223) = 3.24$ ,  $p = .02$ ,  $ES = .04$ ; SE,  $F(3, 223) = 7.29$ ,  $p < .001$ ,  $ES = .09$ ; TV,  $F(3, 223) = 10.6$ ,  $p < .001$ ,  $ES = .13$ ; AR,  $F(3, 223) = 8.22$ ,  $p < .001$ ,  $ES = .10$ ; BSD,  $F(3, 223) = 14.6$ ,  $p < .001$ ,  $ES = .17$ ; and HPE grade,  $F(3, 223) = 2.94$ ,  $p = .03$ ,  $ES = .04$ . Main effect differences in CR [ $F(3, 223) = .476$ ,  $p = .70$ ,  $ES = .01$ ] were found not to be significant.

Interaction effects (group by gender) in each of the constructs were also tested and are reported in the subsequent section. Results indicated statistical differences ( $p < .05$ ) between groups (CPE and NPE) were found in SE,  $F(1, 226) = 19.1$ ,  $p < .001$ ,  $ES = .08$ ; TV,  $F(1, 226) = 31.1$ ,  $p < .001$ ,  $ES = .12$ ; AR,  $F(1, 226) = 24.6$ ,  $p < .001$ ,  $ES = .10$ ; BSD,  $F(1, 226) = 7.52$ ,  $p < .01$ ,  $ES = .03$ ; and HPE grade,  $F(1, 226) = 7.45$ ,  $p < .01$ ,  $ES = .03$  (see Table 4).

NPE students reported reasons why they chose not to enroll in HPE after their initial experience in grade nine (See Table 5). Two reasons (“PE will not fit into my timetable (schedule)”, 60 responses; and “I do not need any more PE credits to meet my future goals or plans”, 64 responses) were the only reported responses which had a higher percentage of students commenting that the statement was a factor for not enrolling in HPE.

Differences between ‘likes’ in HPE classes reported were noticeable in regards to the importance placed on effect HPE class can have on lifestyle ( $CPE = 43$ ,  $NPE = 22$ ), and on the information presented in health class ( $CPE = 31$ ,  $NPE = 22$ ). More specifically, fitness testing ( $CPE = 19$ ,  $NPE = 5$ ), improving personal skills and abilities ( $CPE = 14$ ,  $NPE = 5$ ), and personal enjoyment levels ( $CPE = 13$ ,  $NPE = 4$ ) were sub-groups where larger disparities were discovered. “I feel like in phys-ed class I’m improving my body...not just getting smarter like in my other classes”, comments one of the female participants in the CPE grouping. In opposition to that, students in the NPE group in general felt that formal fitness testing (Beep-Test, 12-minute run, stretch-tests, etc.) were a waste of time, or unfair to be graded on. One ‘dislike’ that the CPE group reported more frequently than the NPE group was that of frustration and disappointment with peer behaviors, abilities and efforts in the HPE class setting ( $CPE = 16$ ,  $NPE = 2$ ). Quoting one of the female students in the CPE group, “I get very frustrated when students in my class don’t try, goof off and don’t listen to instructions.”



### *Differences in gender*

As with the enrollment group analysis, two-by-two ANOVAs were performed between males and females on the previously mentioned constructs (see Table 6). Significance was shown in the variables PAS,  $F(1, 226) = 4.43, p = .04, ES = .02$ ; and BSD,  $F(1, 226) = 35.3, p < .001, ES = .14$ .

Qualitative analysis of gender trends in positive preferences ( $n =$  females; 118); males; 109) revealed noticeable differences with regards to females reporting higher frequencies towards the importance of the information presented in health classes (*Females* = 37, *Males* = 16), staying fit/maintaining activity levels (*Females* = 46, *Males* = 20), dance/gymnastics units (*Females* = 15, *Males* = 0), and personal reports of enjoyment or having fun (*Females* = 13, *Males* = 2). An example of the dance unit was provided by one of the female NPE students when they reported “I loved being able to do the dances, it was really different from the normal sports that we normally play.” Male students were more inclined to favor working out/weight training (*Males* = 24, *Females* = 13), typically responding with comments about loving the workout room, or lifting weights. Gender differences in the negative aspects that were reported in the dislike’s section, showed that females were more likely to have negative feelings toward their social appearances (sweating, how they look after class; *Females* = 18, *M* = 4), and participating in undesired activities (*Females* = 32, *Males* = 18). Personal comments made from one female participant echoes these findings when she reports “I don’t like the fact that after phys-ed class, I have to feel sweaty and gross for the rest of the day.” Males made more negative comments (*Males* = 42,

*Females* = 28) regarding involvement in all aspects of health class and competition (*Males* = 20, *Females* = 12) within sports/activities and between their peers. “I like the games that we play in class (HPE) but sometimes they (other students in the HPE class) take it too seriously. Then it’s not fun anymore” commented a male student on his feelings about competition.

In summary, each of the three study objectives was analyzed through a number of procedures. The presences of significant associations among the variables representing each theoretical perspective (e.g., SDT, SCT, and body image) provided justification for including each simultaneously in this study. These findings support the construct usage and the hybrid approach taken in the development of the questionnaire. With constructs from SCT (SE and TV) and SDT (PAS, AR and CR) each revealing significant relationships, further support is given to the chosen variables usage. Differences between CPE and NPE enrolment groupings were shown to be present, with five of the seven constructs analyzed being significant. These findings verify the hypotheses that higher reported levels of self-efficacy, task value, autonomous regulation, body size perceptions and achievement would be found in the CPE group than in the NPE group. Differences between groups were also shown in the open-ended questioning, with personal enjoyment, importance placed on content of HPE and frustration toward fellow classmates being larger differences (See Table 7, for an enrollment grouping profile). When looking at gender differences, PAS and BSD revealed significance between males and females. More self-reported differences were found between genders from the self-reported sections of the DQ. Females

were more inclined to put value on materials presented in the health sections of HPE, and to have more social worries about their appearance in HPE and in their subsequent classes. Males reported higher levels of enjoyment toward working out/fitness training and commented negatively about health class more frequently than their female counterparts.

## Chapter V: Discussion

To recapitulate, the purpose for this research was to better understand the factors of influence behind high school students' choices toward optional HPE classes. Previous research has shown (Chen 2001; Dwyer et al., 2006; Faulkner et al., 2007) that, there is a large and significant drop off in enrolment numbers in optional HPE classes in secondary school. The degree of importance placed on this situation is one of individual preference and opinion; however, there is still much uncertainty as to what factors high school students consider when making a choice about whether to enroll in optional HPE classes.

### *Construct Relations*

The low-to-moderate strength of relations among the constructs from each theoretical perspective in this study has shown that a variety of different theoretically-backed constructs do have related yet varying levels of association in a student's choice of whether or not to enroll in optional HPE. As predicted (Gao et al., 2009; Xiang et al., 2006), constructs taken from SCT (SE and TV) were significantly related and associated with each of the constructs (PAS, AR and CR) taken from SDT. This finding is supported by other research that has looked at combining constructs and finding cross-theoretical relationships. For example, Hagger and colleagues (2003) found complementary characteristics between SDT and theory of planned behavior constructs and have continued to pursue some unification of the constructs and frameworks of the two theories (Hagger & Chatzisarantis, 2007). Significant relationships have also previously been found

between intrinsic motivation and effort/importance (Li et al., 2005), self-efficacy and body perceptions (Lodewyk et al., in press; Loucaides et al., 2007) and autonomy, task value, perceived competence, body image and amotivation (Ntoumanis et al., 2004). The degree of significance found was expected and further strengthens the notion that students who are choosing to enroll in optional HPE classes differ from students who are not enrolling on a number of varying constructs. However, as outlined previously in chapter two, many additional variables have been shown to hold importance for students and their choice of HPE. Continued integration of ideologies and theoretical variables is essential to establishing a more thorough knowledge-base about the possible interactions involved in this student choice. Limiting the assortment of variables being studied could ignore or overlook key information in the understanding of student choices toward HPE.

#### *Differences between CPE and NPE groups*

The second objective of this study was to analyze differences between students who chose to enroll in HPE (CPE students) and those who chosen not to (NPE students), in PAS, SE, TV, AR, CR, AM, BSD and HPE grades. Many of the variables chosen (SE, TV, AR, BSD, and HPE grade average) showed significant differences between the CPE and NPE enrolment groups. This falls in line with much of the research in the field of HPE, which shows the strong relationship between internal feelings, perceptions and motivations toward a task being instrumental in enjoyment and ultimate success for the individual. Each variable SE (Dishman et al., 2005; 2004; Stewart et al., 1999), TV (Li et al., 2005;

Lodewyk, Winnie, & Jamieson-Noel, 2009; Schmidt & Lee, 2005), AR (Chen, 2001; Duda, 2006; Ntoumanis, 2005), BSD (Mendelson et al., 2002; Pelletier & Vallerand, 1996), and HPE grades (Gao et al, 2009; Solomon & Lee, 1996) is supported by existing research outlining the variable's importance to positive feelings toward HPE classes and physical activity. It is important to note that, SE, TV, AR and BSD are all constructs that gauge internal perceptions and feelings of an individual. This may signal that successful participation rates are affected more by the attitudes student's have toward HPE classes in general, rather than the specific content being delivered in the class.

HPE grade achievement aligns with the internal importance of the variables outlined previously, with the notion that striving for personal achievement, was shown to be a significant difference between enrollment groupings. The variables of PAS and CR failed to show significant difference between enrollment groups, a finding that for PAS contradicts established research (Martin & Kulina, 2005; Martin et al., 2001) and was not expected. Being asked to comment on HPE experiences from the previous year, students may have had difficulties remembering day-to-day teacher interactions involving autonomy support. An objective of HPE teachers to maintain an element of control and to limit inappropriate or undesired behaviors, may have restricted the amount of choice and student-lead activities, thereby decreasing the possibility of students' recognizing autonomy supportive practices.

The differences between CPE and NPE students in this study have implications on practices that may have the ability to increase students'

willingness to enroll in optional HPE classes. One initial consideration would be for principals and administrators to re-evaluate how HPE is offered and scheduled in their schools or regional boards of education. Scheduling and availability were reported as major limiting factors to a student's ability to enroll in a HPE class. Students are being forced to decide their future plans earlier than ever because of prerequisite requirements for grade 11 and 12 high school classes, as well as required classes needed for post-secondary endeavors. Very few colleges or universities in Canada require an activity-based HPE class for acceptance, lowering the need for students with post-secondary aspirations to use one of their credits on what essentially appears to be a rather unnecessary credit for their academic futures. When the Ontario government removed the fifth-year of high school in 2001, it compacted the time given and the credits required to graduate. With the pressure and time constraints placed on students, optional and non-essential credits (HPE, music and arts classes to name a few) have tended to be pushed to the side, in favor of classes that are required for student's future endeavors. This puts more pressure on HPE teachers to instill internal importance during the time that they have with students in mandatory HPE classes.

This study has shown that students who choose to take the optional classes do differ on a number of constructs from their peers who choose not to enroll. The implications of these findings could assist in focusing curriculum developers in their attempts to create more interactive and enjoyable guidelines for HPE teachers to teach with. By adding more opportunities and putting a larger focus on autonomous activities, the possibility of engaging students who have lower

levels of perceived autonomy support, self-efficacy, task value and autonomously regulated motivations could increase. This in turn, may entice more students to see benefits and consider enrollment in subsequent optional HPE classes.

However, without a higher focus toward HPE classes being important and worthwhile academically, student choices will ultimately be influenced by their aspirations for careers and post-secondary pursuits.

#### *Differences between genders*

The last objective was to analyze and report differences between genders along the same variables employed during the enrolment analyses. This study revealed little difference between genders and no significant interaction effects between gender and group on each construct. The two variables that did reveal significant difference between the genders were PAS and BSD. This corroborates other studies in the field of autonomy support (Mandigo, Holt, Anderson & Sheppard, 2008; Vallerand, Fortier, & Guay, 2007) which highlight the stronger feelings of PAS in female students. Suggested reasons for this reported difference in PAS are derived from previous research reporting that females are typically at a lower skill-set than males (van Rossum, Musch, & Vermeer, 1999) and that females typically are more receptive to feedback and choice opportunities given from their HPE teachers (Vallerand et al., 2007). As well, the findings also support self-presentational research, reporting that females tend to be more concerned with their bodies and how others perceive them than their male counterparts (Couturier et al., 2005; McCabe et al., 2002). This statement is further supported by female students' comments about their anxieties about



personal appearance along with the lack of responses from the male students on the subject. These feelings tend to become more heightened during HPE classes, where bodies are on display much more than in any other class (Duncan et al., 2004; Gammage, Hall, Martin Ginis, 2004; Gammage et al., 2004). With gym clothing, HPE uniforms and the element of skill performance all being a part of HPE classes in the gym, students are much more aware and conscious of their self-presentation (Gammage et al., 2004).

These gender differences in body image are backed by the differences found in BSD and in the qualitative results of this study showing that female students reported being more concerned than males with being sweaty, changing, and their social appearance during and after HPE classes. The students sampled all came from same-sex HPE class experiences, as is mandated for grade nine classes by the ministry of education in Ontario. How students would react to being in a co-ed HPE class, and if participating with male/female students changed individual self-perceptions and reported BSD scores would add valuable information about the gender/BSD interaction.

With regards to gender differences present in individual feelings about HPE classes, the findings of this study are in slight contradiction to studies previously performed in the HPE setting which highlight gender differences in motivational regulation (Ntoumanis, 2005; Prusak, Treasure, Darst, & Pangrazi, 2004), reported activity levels (Mackenzie et al., 2000; Schneider et al., 2007), and SE (Dishman et al., 2005; 2004). These studies all emphasized various levels of gender differences in their samples. They reported that gender was an

important factor in their participant's enjoyment, learning experiences, reported feelings or active participation in HPE or physical activity.

When looking into the self-reported comments made, differences were found between genders. For example, females were much more inclined to value the information taught in health classes. With health class curriculum placing strong emphasis on one's body (Ontario Ministry of Education, 2000; 1999), the fact that females felt more importance aligns with the already mentioned BSD concerns (Gammage et al., 2004). With a much higher importance placed on nutrition, sex education and learning about their bodies, females had lower dislike of the overall health class environment. Males reported that health class was not as enjoyable as the gym/activity portion of HPE classes and that it was "too much like regular classes." These comments mirror previous studies which looked at self-reported enjoyment factors taken from HPE students (Carlson 1995; Couturier et al., 2005). As mentioned previously, a very significant aspect of the HPE curriculum is the health section. Here students learn about one's body, how to take care of it, and how to keep it safe; all important messages that most students sampled do not seem to be grasping. This importance needs to be emphasized to both sexes, but stressed to male students. The idea students and teachers have that the health component can only be taught in the classroom setting needs to be challenged and changed. Health classes can be delivered in an engaging and enjoyable way for students. Daily or once-a-week health lessons, daily health tips, or the use of engaging projects by teachers will help to create inclusive and safe environments for their students. Hopefully, this can ease

student's negative feelings toward health class, and allow for open dialogue on a number of important topics facing high school students today.

There was the high amount of qualitative information reported by the female participants in comparison to their male counterparts. Females responded with higher regularity and with more in-depth responses, giving their opinions a much more specific tone. Males on the other hand, were very brief and general in their responses. Future research should develop a more detailed qualitative section and not leave as much ambiguity in the questions posed to the respondents. This would greatly aid in pin-pointing specific issues that students are having with HPE classes (e.g. male versus female dislikes of "Health Class").

A number of differences were found to be present between genders. Interestingly, many of the constructs chosen revealed little to no difference, with much of the gender variations being revealed when analyzing the reported likes and dislikes of HPE. Supported by the absence of gender interaction on enrollment grouping and the reported values from each group, gender appears to have a limited role in enrollment choices of high school students with regards to this study's chosen constructs.

Although this study has revealed a number of factors that are shown to differentiate students and their HPE choices, the potential presence of other factors affecting the differences between enrolment and gender groups requires acknowledgement. Variables studied in this project were chosen for their already proven importance to enjoyment, adherence and influences in previous works within the HPE field. HPE participation and the subsequent factors that could

influence enrolment are numerous and are by no means limited to this study's chosen variables. Within the established literature, many other influences have shown to hold importance in choice with regards to activity, physical education and health studies. Within the theoretical frameworks chosen for this study, constructs such as environmental influences from SCT (Loucaides et al., 2007; Thompson et al., 2003), or relatedness and competence from the basic needs subgroup from SDT (Ntoumanis, 2005; Vallerand, 1997) have been shown to have importance when looking at participation rates and enjoyment in HPE classrooms. The idea of goal orientation of students is also mainstream concept being used in HPE research. This research looks at student's goals in HPE and whether they satisfy those goals through task orientation (successful completion of task is its own reward) or on ego orientation (personal gain seen as most important). Many researchers (Barkoukis, Thogersen-Ntoumani, Ntoumanis & Nikitaras, 2007; Carr & Weigand, 2002; Sarrazin et al., 2006) have shown the relevance and importance that orientation theology can play toward HPE studies. The role of the HPE teacher and school atmosphere is one that study only touched on slightly. With all of samples students coming from the same school board/district, a level of uniformity was assumed. However, the variability between individual teachers, departments or a high school's atmosphere toward HPE and activity cannot be ignored as a possible influence on a student's HPE choice; Each of which supported by previous works presenting importance (Higgins et al., 2003; Hill & Cleven, 2005; Matrin, et al., 2001; Thompson et al., 2003). These are a number of possible factors outside this study's capacity that could be important

variables to further consider when analyzing the field of high school students and the reasons behind their HPE choices

### *Limitations*

This study has a number of limitations. While information was collected through the use of established, reliable and valid measures, the integrated approach of the variables chosen could limit the effectiveness. In other words, the variables were not taken from any one established theory or model; rather they were incorporated together, from a number of theories and research areas. Because of this, application back to the variable's original theoretical base may be more difficult. The relevance of any one theoretical approach was not an objective of this study. For this same reason, the scale of amotivation is an area that should hold caution for a reader's interpretations. With the low reliability factor the scale was dropped from subsequent analyses in this study. This was deemed an appropriate choice as the study is not testing a self-determination theoretical framework, and dropping the amotivation measure would not jeopardize the integrity of the autonomous or controlled regulation results from the *TSRQ* measure. Amotivation is a complex construct for students to grasp, and in the HPE setting, is difficult to analyze (Ntoumanis et al., 2004). Further, with only three items in the *TSRQ* reporting on AM, if there were confusions with the questioning, students could easily not report their AM levels accurately.

With more than 75% of our study's population reporting to be Caucasian, application to a more urban or internationally diverse classroom is limited. In populations where Caucasian high school students are of the majority, this study's

conclusions can be referenced. However, in a high urban setting, with a multi-national classroom or wide demographic variability, transfer of the study's findings becomes less reliable because of those demographic differences. Wider demographics need to be included for a more accurate representation of the rich diversity found in Ontario and Canadian school climates

The use of self-reported data is a practice that should be inferred cautiously. Students may have had a difficult time remembering their past HPE class experiences, not fully understood the questions or possibly, did not take the questionnaire seriously, as there was no penalty for inaccurate completion. However, the use of self-reported data is an established practice and has been validated in many previous studies looking at HPE class enjoyment (Barnett, O'Loughlin, Gauvin, Paradis, & Hanley, 2006; Courtier et al., 2005) physical activity (Garcia et al., 1998; Knapik, Jones, Reynolds, & Staab, 1992; Knapik, Jones, Sharp, Darakjy, & Jones, 2007), and classroom learning (Lodewyk, et al., 2009).

### *Future Research*

Future works in the area of HPE participation and student choices might consider additional multi-faceted approaches to the questions posed in this study. With no one theory successfully accounting for all participation influences or enrolment factors in high school students and their choices in HPE, integrating ideas, theories and methodologies will help to provide a wider, all-encompassing outlook on student choices. There are other variables and constructs outside of the ones employed by this study that have been shown to be influential in HPE

class participation, enjoyment, and classroom success. Proven influential variables need to be studied in conjunction with the identified influential variables found in this study to attempt to understand the factors more thoroughly. The concept of prediction is one that holds interest as well. Which variables predict HPE participation at a higher level than others? Following that question, if prediction is possible, how to use that information to influence student's to participate in HPE, increase student feelings of HPE class importance and instill lifelong activity habits.

In response to the previously mentioned lack of diversity in this study's sample, and the rich multi-cultural demographics of Canada, studies should be conducted outside of Southern Ontario, utilizing a variety of settings within the province/country to help distinguish area trends, better representing provincial/national differences. In performing studies on a larger and wider demographic scale than the practical allowance for this study, teachers and practitioners will gain greater insights into what factors could be influencing their multi-cultural HPE classrooms. Further investigations into other provinces and country's HPE enrolments would also be interesting. Provinces which require an additional HPE credit or who mandate HPE specialists could have very different responses and information about their high school students and what influences their choices and feelings about their HPE classes.

One last area of interest would be to look at all high school students, not just those in grade 10. Findings from this study suggest that many students would enroll in HPE classes if their school's timetables allowed for them to fit the class

in. As well, many students reported that they plan to take HPE classes later on in high school. How many students over the course of their four or five years in high school would choose to take an optional HPE credit(s)? How do those numbers compare to the results of this grade ten only study? Finally, of the students who choose not to take HPE in their grade 10 year, how many return to a HPE class in their latter high school years? Do they change in their outlooks, feelings and/or beliefs toward HPE and if students do return to HPE, what factors are influencing that choice? The opportunity for future research around this idea of participation influences in HPE is one that holds many wide-ranging possibilities. With many different variables still left unexplored and the influence of varying demographics and grade levels still unknown, much more needs to be studied to gain a better perspective on student's HPE class choices.

In conclusion, this study brings attention to the differences present between students who choose to participate and those who choose not to in optional high school health and physical education classes. The information reported adds valuable insight to health and physical education class deliverance at the high school level and fills a gap present in current research that has failed to study high school student's enrollment directly after making the choice to enroll or not enroll in optional health and physical education classes. With many factors and theoretical constructs being reported as important to student's health and physical education choices, an integrated research approach was taken to analyze a wide-range of factors. This approach was supported by the choice of imperially studied constructs and aided by the significant relationship discovered.



Several important factors to high school student's health and physical education class participation and enjoyment were analyzed, with significant differences revealed between five of them; self-efficacy, task value, autonomous regulation, body size discrepancy and health and physical education grade average. Gender differences were found to be inconclusive in nature, a trend that is consistent with the variety of findings being produced in the health and physical education community. Within the health and physical education classroom, teachers need to focus on instilling internal drives and desires in students. Having an internal sense of health and physical education being important academically was an important difference found between the students who are enrolled in HPE class and the students who chose not to enroll. This is a key area that teachers can directly affect through creating engaging lessons, giving autonomous tasks and by supporting student achievements, regardless of significance. Practitioners of health and physical education, teachers and principals need to bring student focus back to school-wide healthy active living.

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Tables

Table 1

*Demographic Means and Standard Deviations*

Scales	Group ( <i>n</i> = 227)	CPE ( <i>n</i> = 127)	NPE ( <i>n</i> = 100)	Males ( <i>n</i> = 109)	Females ( <i>n</i> = 118)
Perceived Autonomy Support	4.90 (1.23)	5.03 (1.18)	4.73 (1.28)	5.06 (1.14)	4.75 (1.30)
Self-Efficacy	5.53 (1.12)	5.81 (1.09)	5.18 (1.05)	5.65 (1.04)	5.42 (1.18)
Task Vale	4.72 (1.26)	5.11 (1.14)	4.22 (1.24)	4.76 (1.21)	4.69 (1.31)
Autonomous Regulation	4.66 (1.44)	5.07 (1.32)	4.15 (1.44)	4.65 (1.42)	4.67 (1.47)
Controlled Regulation	2.41 (1.19)	2.45 (1.07)	2.35 (1.18)	2.44 (1.25)	2.37 (0.99)
Body Size Discrepancy	-.537 (1.34)	-.339 (1.32)	-.790 (1.34)	-.023 (1.27)	-1.01 (1.24)
Achievement Grade	81.79 (8.75)	83.19 (8.35)	79.98 (8.96)	81.98 (7.96)	81.62 (9.46)

Table 2

*Correlations of Scale Variables*

Scales	Perceived Autonomy Support	Self- Efficacy	Task Value	Autonomous Regulation	Controlled Regulation	Body Size Discrepancy	Achievement Grade
Perceived Autonomy Support	—	.52*	.60*	.40*	.18*	.07	.25*
Self-Efficacy		—	.71*	.43*	.17*	.22*	.47*
Task Value			—	.68*	.31*	.12	.33*
Autonomous Regulation				—	.43*	.03	.18*
Controlled Regulation					—	-.01	.02
Body Size Discrepancy						—	.19*
Achievement Grade							—

\* $p < 0.05$

Table 3

*Interaction effect of gender and enrollment on the constructs*

Scales	<i>F</i>	<i>p</i> *	ES
Perceived Autonomy Support	2.49	.15	.01
Self-Efficacy	0.05	.82	.00
Task Value	0.18	.67	.00
Autonomous Regulation	.02	.90	.00
Controlled Regulation	0.78	.38	.00
Body Size Discrepancy	0.15	.70	.00
Achievement Grade	1.13	.29	.01

*df* = (3, 223), \* *p* < 0.05

Table 4

*Analysis of Variance of differences in enrollment groupings (CPE and NPE)*

Scales	CPE X ( <i>n</i> = 127)	NPE X ( <i>n</i> = 100)	<i>F</i>	<i>p</i> *	ES
Perceived Autonomy Support	5.03 (1.18)	4.73 (1.28)	3.25	.07	.01
Self-Efficacy	5.81 (1.09)	5.18 (1.05)	19.1	<.001	.08
Task Value	5.11 (1.14)	4.22 (1.24)	31.1	<.001	.12
Autonomous Regulation	5.07 (1.32)	4.15 (1.44)	24.6	<.001	.10
Controlled Regulation	2.45 (1.07)	2.35 (1.18)	0.36	.55	.00
Body Size Discrepancy	-.339 (1.32)	-.790 (1.34)	7.52	<.01	.03
Achievement Grade	83.19 (8.35)	79.98 (8.96)	7.45	<.01	.03

*df* = (1, 226), \* *p* < 0.05

Table 5

*NPE participants reported reasons (# of responses) for not enrolling in HPE (n = 100).*

Possible Factors (From <i>DQ</i> , pg 1.)	Factor in not enrolling in HPE	Not a factor in not enrolling in HPE
I do not want to take PE	40	60
I have difficulty relating to the PE teacher(s)	8	92
I plan to take PE next year	34	66
PE will not fit into my timetable (schedule)	60	40
I do not need any more PE credits to meet my future goals or plans	64	36
I feel that I am sufficiently physical active in my other activities	36	64
I do not enjoy the health component of the course	29	71
I do not get high enough grades in PE	9	91
I do not get high enough grades in the health component of the course	15	85
Other (please explain)	3: medical concerns/disability	97 blank

Table 6

*Analysis of Variance of differences in gender (males and females)*

Scales	Male X ( <i>n</i> = 109)	Female X ( <i>n</i> = 118)	<i>F</i>	<i>p</i> *	ES
Perceived Autonomy Support	5.06 (1.14)	4.75 (1.30)	4.43	.04	.02
Self-Efficacy	5.65 (1.04)	5.42 (1.18)	2.62	.11	.01
Task Value	4.76 (1.21)	4.69 (1.31)	0.28	.60	.00
Autonomous Regulation	4.65 (1.42)	4.67 (1.47)	0.02	.89	.00
Controlled Regulation	2.44 (1.25)	2.37 (0.99)	0.35	.55	.00
Body Size Discrepancy	-.023 (1.27)	-1.01 (1.24)	35.3	<.001	.14
Achievement Grade	81.98 (7.96)	81.62 (9.46)	0.24	.62	.00

*df* = (1, 226), \* *p* < 0.05

Table 7

*Summative profiles of CPE and NPE groups*

Variables	CPE Group		NPE Group
Perceived Autonomy Support	5.03 (1.18)		4.73 (1.28)
Self-Efficacy	5.81 (1.09)	*	5.18 (1.05)
Task Value	5.11 (1.13)	*	4.22 (1.24)
Autonomous Regulation	5.07 (1.32)	*	4.15 (1.42)
Controlled Regulation	2.45 (1.07)		2.35 (1.18)
Body Size Discrepancy	-.339 (1.32)	*	-.790 (1.34)
HPE Grade average	83.2% (8.35)	*	79.9% (8.97)
Health Component	<ul style="list-style-type: none"> <li>• See value in material presented</li> <li>• Importance placed on learning about the body/healthy lifestyle</li> </ul>		<ul style="list-style-type: none"> <li>• See little to no value in material presented</li> <li>• Too much like “classroom”</li> <li>• Boring</li> </ul>
Activity Component	<ul style="list-style-type: none"> <li>• Personal Enjoyment</li> <li>• Self-Improvement</li> <li>• Activities chosen</li> <li>• Dislike other students not participating</li> </ul>		<ul style="list-style-type: none"> <li>• Dislike fitness testing</li> <li>• Repetition in activities</li> <li>• Social opportunities</li> <li>• Post-class appearance</li> </ul>

*Note:* All numbers presented are the scale means of each variable

\* = significant differences present between enrollment groups

## Appendices

### Appendix A: Introduction Letter to Principals/Teachers

DATE, 2009

Dear Principal's and Teacher's of Career/Civics Classes,

Enclosed please find the materials for a study entitled *Participational Influences in High School Physical Education* that I would like to conduct within several grade 10 classes in your school. The research will look at factors that may hold influence over a student's choice to maintain enrollment or discontinue enrollment in optional physical education and health classes after grade 9.

Introducing myself, my name is Colin Pybus and I am a Master of Arts student within the faculty of Applied Health Sciences at Brock University. My previous educational background includes an honours bachelor degree in Physical Education & Kinesiology and a Bachelors degree in Education (teacher's college), both received from Brock University. I am also currently a registered secondary school teacher with the Ontario College of Teachers (Member #518156), actually having completed parts of my student-teaching requirements at two schools with the DSBN: Westlane of Niagara Falls and Centennial of Welland.

In my proposed study, students who provide informed consent will be asked to complete two questionnaires during their regular scheduled careers/civics class time, taking about 20-25 minutes of class time to complete. Careers and Civics were chosen because they offer a mandatory credit at the open level in grade 10. There are no correct or incorrect answers on the questionnaires. The first questionnaire will ask students about their grade, age, student identification number, exercise levels and reasons for or not for enrolling in an optional physical education and health class. The second questionnaire consists of 36 short statements for students to rate (from 1-7) their agreement or disagreement with each statement. I would also like to request that participating students' physical education and health grades from previous completed courses (grade 9 and/or grade 10) be provided to me by the school's administrative staff.

Participation with this research project is strictly voluntary and any data collected will remain anonymous. Any data collected as part of the research will not be tied to student names in anyway, be viewed by the participant's teachers nor will they be used determine student's grades. Participating schools will receive a final written report with the anonymous results of the study and the results of the study may also be shared with teachers in the school board through professional development workshops and publications



This study has received full clearance from both Brock University's Research Ethics Board (File#08-146) and the DSBN Research Review Committee (see attached agreement). I hope to conduct this research during the first month of second semester with the permission of the administration as the teachers of the participating classes. At your convince, a very short five minute meeting to discuss a viable timeline for my study and classroom visits would also be greatly appreciated.

If you have any questions or concerns about this request please contact myself at (905) 401-4675 or via email at colinpybus@gmail.com. You can also contact my supervisor, Dr. Ken Lodewyk of Brock University at (905) 688-5550, ext. 5220, or via email at klodewyk@brocku.ca. Thank you very much for considering my research in your school. I eagerly looking forward to hearing back from you,

Sincerely,

Colin Pybus, B.PhEd, B.Ed

Dr. Ken Lodewyk

## Appendix B: Informed Consent for Parent(s)/Guardian(s)

DATE: 2009

Dear Parent(s) and/or Guardian(s):

The following letter and consent form are to inform you of a study I wish to conduct within your son/daughter's careers and civics class and to ask your permission for him/her to participate in the study. The title for this study is called: *Participational Influences in High School Physical Education*

My name is Colin Pybus and I am a Masters of Arts candidate in the Faculty of Applied Health Sciences, Department of Physical Education and Kinesiology at Brock University. To increase understanding about factors that influence students' participation in optional high school physical education and health classes, I am conducting research on the reasons behind a student's choice to continue or not continue with physical education and health after the mandatory grade nine year. I am having surveys (questionnaires) completed by students in a number of schools within the District School Board of Niagara (DSBN). I would like your son and/or daughter to participate.

Students who provide informed consent will be asked to complete two questionnaires during their regular career/civics class at school that will take a total of 20-25 minutes to complete. There are no correct or incorrect answers on the questionnaire. The first questionnaire asks students to report their grade level, gender, ethnicity, activity levels outside of school, and their individual reasons for continuation or discontinuation in the grade 10 physical education classes. The second questionnaire consists of a series of short statements related to personal experiences of physical education, asking for students to rate (from 1 to 7) their opinions and feelings to each statement. Participants also agree to allow their most recent physical education course grade to be provided to the researcher by the school administration. Any student choosing not to participate will work quietly in the same classroom on an alternative activity designed by the classroom teacher.

Participation in the research project will be strictly voluntary and any data collected will remain anonymous. Since students' names will not be requested on the questionnaires (only their student numbers will be collected) their name will not be associated with their marks or answers to the items. Students do not have to participate in the research project if they choose not to. Any data collected as part of the research study will not be viewed by the participant's teacher nor will it be used to determine student grades. Participating schools will receive a final written report with the anonymous results of the overall study. The overall results of the study may also be shared with teachers in the local school district through professional development workshops, and the results may be published in or presented at various professional and scholarly journals or conferences. Any

presentation, report, or publication resulting from this study will not contain any identifiable information regarding your son/daughter or their school.

This study has been reviewed and received clearance from the Ethics Review Committee of Brock University (File#08-146), the District School Board of Niagara, and the school's principal. Should you allow your son/daughter to participate, you and/or your son/daughter will have the option of withdrawing from the study at any time for any reason without consequence. Simply inform one of the researchers, teachers, or principal that you wish to withdraw from the study and your information will be removed upon your request. As well, you and your son/daughter have the right to not answer any question(s) that you or your son/daughter considers inappropriate. There are no known risks associated with this study. A copy of the questionnaires we are asking the participants to complete will be available for you to review in the principal's office, should you desire to do so.

If you have any questions or concerns about this request, please contact Colin Pybus via email at [colinpybus@gmail.com](mailto:colinpybus@gmail.com), Dr. Ken Lodewyk (905) 688-5550, ext. 5220, or email [klodewyk@brocku.ca](mailto:klodewyk@brocku.ca) at Brock University. If you wish to talk to someone not involved in this study, you may contact the Research Ethics Officer ([reb@brocku.ca](mailto:reb@brocku.ca) or 905-688-5550, ext. 3035). Your written consent is needed to allow your son/daughter to complete the questionnaires. To indicate your consent, please complete the enclosed CONSENT FORM and return it to your son/daughter's careers/civics teacher as soon as possible. As well, if you wish to receive a summary of the results, please provide your contact information on the back of the informed consent form. Thank you *very much* for enhancing the experience of physical education and health through your involvement in this study.

Sincerely,

Colin Pybus, B.PhEd, B.Ed

Dr. Ken Lodewyk

## Appendix C: Parent/Guardian Consent Form

### **BROCK UNIVERSITY DEPARTMENT OF PHYSICAL EDUCATION AND KINESIOLOGY Informed Consent Form**

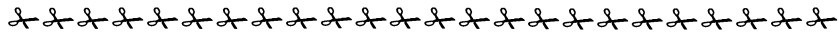
STUDY TITLE: Participational Influences in High School Physical Education

Principal Investigator: Colin Pybus, B.PhEd, B.Ed, MA Candidate and,

Supervisor: Dr. Ken Lodewyk, Brock University

- Volunteering students will be asked to complete a questionnaire in which they report their previous thoughts and feelings about their grade nine physical educational experiences. The questionnaire should take approximately 20-25 minutes to complete during regular class time. Participants also agree to allow their most recent physical education course grades to be provided to the researcher by the school administration.
- There are no known risks associated with this study. Completing the questionnaires will likely be an educational experience for students as they assess their motivation for, and beliefs about physical education. The questionnaires may ask students to disclose some information (i.e., perceptions and beliefs) which some may deem sensitive. Though feelings of discomfort are very unlikely, if they occur, necessary and appropriate referral to a counsellor can and will be provided. Students who choose not to participate will work quietly in the same classroom on an alternative activity designed by the classroom teacher.
- All personal data will be kept strictly confidential and anonymous (the students' names will not be requested on the questionnaires, only their student ID numbers) so your son/daughter's name will not be associated with his/her answers or grades. Only the researchers will have access to the data, which will be stored in a locked office. All data will be shredded five years after the completion of the study.
- Your son/daughter's participation in this study is voluntary and you and/or your son/daughter may withdraw from the study at any time and for any reason without penalty. Your son/daughter's teachers will not have any access to the completed questionnaires and their responses to the items on the questionnaires will not influence their grades in any way. There will be no payment for your son/daughter's participation.
- Participating schools will also be able to request professional development workshops for their teachers based upon the methods and results of the study. Results of the study may be published in, or presented at various professional and scholarly journals or conferences.
- There is no obligation for your son/daughter to answer any question(s) that you or your son/daughter consider inappropriate. Before deciding to participate or anytime during or after the study, parents and participants are also welcome to view a copy of the questionnaires which are available in the principal's office at the school.
- This study has been reviewed and cleared by the Brock Research Ethics Board (File#08-146), the District School Board of Niagara, and the school's Principal.
- If you have any questions or concerns about your son/daughter's participation in the study, you may contact Colin Pybus via email at colinpybus@gmail.com, Dr. Ken Lodewyk at 905-688-5550 ext. 5220 or email: klodewyk@brocku.ca or Brock University's Research Ethics Officer (reb@brocku.ca or 905-688-5550, ext. 3035).
- If requested, feedback about the use of the data collected will be sent to you during the summer of 2009. Please provide your name and mailing address on the back of this page if you wish to have the information sent to you.
- Please complete the bottom portion of this consent form and then detach it (keep the top portion for your information) and return it to your son/daughter's careers/civics

teacher as soon as possible. Thank you for considering your participation in this study!



CONSENT FORM	
Student's Name:	_____
School:	_____
<input type="checkbox"/>	I have read and understood all relevant information pertaining to this study
<input type="checkbox"/>	I understand that I or my child may ask questions in the future
<input type="checkbox"/>	I <b>GIVE</b> permission for my child to participate in the Brock University study conducted by Colin Pybus and supervised by Dr. Ken Lodewyk.
<input type="checkbox"/>	I <b>DO NOT</b> give permission for my child to participate in the Brock University study conducted by Colin Pybus and supervised by Dr. Ken Lodewyk.
Signature of Parent/Guardian:	_____ Date: _____
Signature of Student:	_____ Date: _____
Signature of Researcher:	_____ Date: _____

Appendix D: Demographics and Scale Questionnaire

General Demographic Information

Student ID Number: \_\_\_\_\_

1. Are you currently enrolled in an optional physical education and health class? (circle one) YES or NO

If NO, please check off the reason(s) why you are not enrolled in a PE class:

I do not want to take PE \_\_\_\_\_

I have difficulty relating to the PE teacher(s) \_\_\_\_\_

I plan to take PE next year \_\_\_\_\_

PE will not fit into my timetable (schedule) \_\_\_\_\_

I do not need any more PE credits to meet my future goals or plans \_\_\_\_\_

I feel that I am sufficiently physical active in my other activities \_\_\_\_\_

I do not enjoy the Health component of the course \_\_\_\_\_

I do not get high enough grades in PE \_\_\_\_\_

I do not get high enough grades in the Health component of the course \_\_\_\_\_

Other reasons (please explain) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. What is your sex? (circle one) FEMALE MALE

3. In which school grade are you currently (please circle one): 9 10 11 12

4. What is your Ethnic Background? \_\_\_\_\_

5. What grade (%) have you usually received in your most recent PE courses? \_\_\_\_\_ %

6. Approximately what is your overall academic average (%) in high school so far? \_\_\_\_\_ %

7. Do you live inside a city or in more of a country/rural setting? (circle one) City Country/Rural

8. On average, how often do you actively exercise outside of PE at least 30 minutes per day (circle one):

Never	1-2 days per week	3-4 days per week	5-6 days per week	Every day
-------	----------------------	----------------------	----------------------	--------------



## Questionnaire for Physical Education & Health

The following six (6) questions contain items that are related to your experience with your teacher in physical education and health (PE). Teachers have different styles in dealing with students, and we would like to know more about how you have felt about your encounters with your PE teacher. Your responses are confidential. Please be honest and open by circling a number that best represents your feelings. A rank value of 1 means "never" while a rank of 7 means "always".

For Example:

1	2	3	4	5	6	7
Never			Sometimes			Always

1. I feel that my PE teacher(s) provide me choices and options.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

2. I feel understood by my PE teacher(s).

1	2	3	4	5	6	7
---	---	---	---	---	---	---

3. My PE teacher(s) give me confidence to do well in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

4. My PE teacher(s) encourage me to ask questions.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

5. My PE teacher(s) listen to how I would like to do things.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

6. My PE teacher(s) try to understand how I see things before suggesting a new way to do things.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

***\*\* Please carry on to the next page \*\****



The following **fourteen** (14) questions relate to your personal feelings and experiences with regards to physical education and health (PE). Read the following questions and circle the number that best ranks your behavior for the given question. A rank value of 1 means "Not at all true for me" while a rank of 7 means "very true for me". Be as precise as possible.

For Example:

1	2	3	4	5	6	7
Not true at all			Sometimes true for me			Very true for me

7. I think I will be able to use what I learn from PE in my other courses.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

8. I believe I will receive an excellent grade in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

9. I'm sure I can learn the most difficult material from the activities in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

10. It is important for me to learn the skills and concept information in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

11. I'm confident I can learn the basic skills and concepts taught in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

12. I'm confident I can perform the most difficult material taught by my PE teacher(s).

1	2	3	4	5	6	7
---	---	---	---	---	---	---

13. I am very interested in the material we learn in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**\*\* Please carry on to the next page \*\***

14. I'm confident I can do an excellent job on the assignments and tests in PE.

1            2            3            4            5            6            7

15. I expect to do well in PE.

1            2            3            4            5            6            7

16. I think the material in PE is good for me to learn.

1            2            3            4            5            6            7

17. I like what I have to learn in PE.

1            2            3            4            5            6            7

18. Understanding the material in PE is very important to me.

1            2            3            4            5            6            7

19. I'm certain I can learn the skills being taught to me in PE.

1            2            3            4            5            6            7

20. Knowing the teacher, my ability, and the difficulty of PE, I think I will do well in PE.

1            2            3            4            5            6            7

**\*\* Please carry on to the next page \*\***

The following **fifteen** (15) questions relate to the reasons why you would participate in an optional physical education and health class (PE). Different people have different reasons for doing that, and we want to know how true each of the following reasons is for you. All fifteen responses are to the one question in **bold**.

Please indicate the extent to which each reason is true for you, using the following 7-point scale:

For Example:

1	2	3	4	5	6	7
Not true at all			Somewhat true			Very
true						

**The reason I would *participate in optional Physical Education and Health (PE) classes* is:**

21. Because I feel that I want to take responsibility for my own health.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

22. Because I would feel guilty or ashamed of myself if I did not participate in PE.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

23. Because I personally believe it is the best thing for my health.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

24. Because others would be upset with me if I did not.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

25. I really don't think about it.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

**\*\* Please carry on to the next page \*\***

26. Because I have carefully thought about it and believe it is very important for many aspects of my life.

1            2            3            4            5            6            7

27. Because I would feel bad about myself if I did not participate in PE.

1            2            3            4            5            6            7

28. Because it is an important choice I really want to make.

1            2            3            4            5            6            7

29. Because I feel pressure from others to do so.

1            2            3            4            5            6            7

30. Because it is easier to do what I am told than think about it.

1            2            3            4            5            6            7

31. Because it is consistent with my life goals.

1            2            3            4            5            6            7

32. Because I want others to approve of me.

1            2            3            4            5            6            7

33. Because it is very important for being as healthy as possible.

1            2            3            4            5            6            7

34. Because I want others to see I can do it.

1            2            3            4            5            6            7

35. I don't really know why.

1            2            3            4            5            6            7

*\*\* Please carry on to the next page \*\**

# Body Image Questions (Females only, Males turn to next page)

1. Use the following pictures below to answer the following two questions.

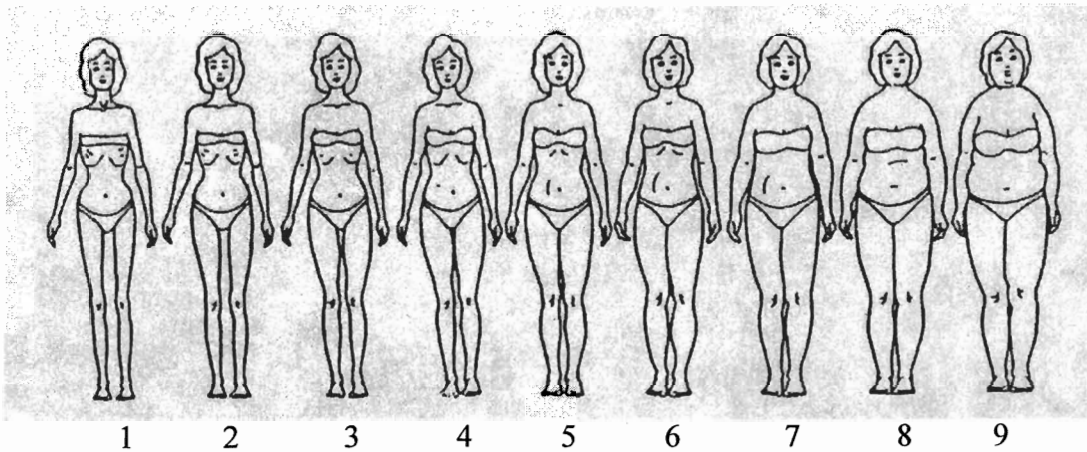
Which person:

a. Most resembles how you see your body,

# \_\_\_\_\_

b. Most resembles how you want your body to look,

# \_\_\_\_\_



*\*\* This is the last page of the questionnaire,*

*Thank you for your participation in this study\*\**

# Body Image Questions (Males only, Females see previous page)

1. Use the following pictures below to answer the following two questions.

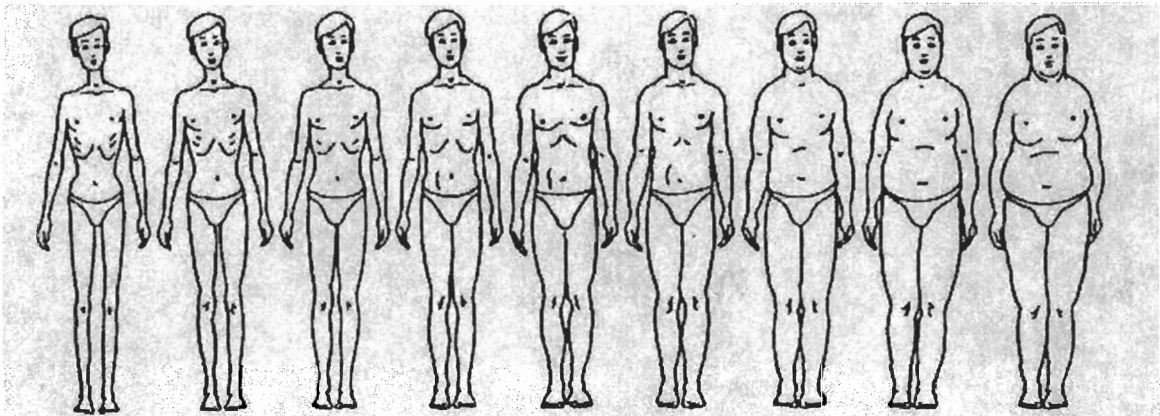
Which person:

a. Most resembles how you see your body,

# \_\_\_\_\_

b. Most resembles how you want your body to look,

# \_\_\_\_\_



1

2

3

4

5

6

7

8

9

*\*\* This is the last page of the questionnaire,*

*Thank you for your participation in this study\*\**

**Itemized Qualitative Data – “Likes”**

***Females not in HPE – 52 Total Subjects***

1. Activity Choices - 51
  - 1.1 Playing Sports/Games - 33
  - 1.2 Learning New Sports/Games – 4
  - 1.3 Working out/Weight Training – 8
  - 1.4 Fitness testing (running, Beep Test, 12 minute Run) - 3
  - 1.5 Dance/Gymnastics - 3
2. Social Aspects -11
  - 2.1 Friends took the class – 2
  - 2.2 Social in class – 6
  - 2.3 Teamwork - 3
3. Break from “regular school” - 9
  - 3.1 No homework – 1
  - 3.2 No desk work/notes – 5
  - 3.3 Being outdoors - 3
4. Importance of HPE - 18
  - 4.1 Exercise/Stay Active – 10
  - 4.2 Self betterment/Improvement – 3
  - 4.3 Stress/Energy Release - 2
  - 4.4 Personal Enjoyment/Fun - 3
5. Health Class - 17
  - 5.1 Learning about the Body – 9
  - 5.2 Learning about Drugs/Alcohol/Sexed – 0
  - 5.3 Learning about Staying Healthy (Nutrition, Exercising) - 3
  - 5.4 General Health Class - 5
6. Easy Class/Credit – 4
7. Teacher – 1

***Females in HPE – 66 Total Subjects***

1. Activity Choices - 85
  - 1.1 Playing Sports/Games - 40
  - 1.2 Learning New Sports/Games – 21
  - 1.3 Working out/Weight Training – 5
  - 1.4 Fitness testing (running, Beep Test, 12 minute Run) - 7
  - 1.5 Dance/Gymnastics/Yoga/Aerobics - 12
2. Social Aspects - 10
  - 2.1 Friends took the class – 3
  - 2.2 Social in class – 6
  - 2.3 Teamwork - 1
3. Break from “regular school” - 9
  - 3.1 No homework – 1

- 3.2 No desk work/notes – 5
- 3.3 Being outdoors - 3
- 4. Importance of HPE - 28
  - 4.1 Exercise/Stay Active – 9
  - 4.2 Self betterment/Improvement – 7
  - 4.3 Stress/Energy Release – 2
  - 4.3 Personal Enjoyment/Fun - 10
- 5. Health Class - 20
  - 5.1 Learning about the Body – 4
  - 5.2 Learning about Drugs/Alcohol/Sexed – 1
  - 5.3 Learning about Staying Healthy (Nutrition, Exercising) - 3
  - 5.4 General Health Class - 12
- 6. Easy Class/Credit – 2
- 7. Teacher – 1

### ***Males not in HPE – 48 Total Subjects***

- 1. Activity Choices - 57
  - 1.1 Playing Sports/Games - 38
  - 1.2 Learning New Sports/Games – 8
  - 1.3 Working out/Weight Training – 9
  - 1.4 Fitness testing (running, Beep Test, 12 minute Run) – 2
  - 1.5 Dance/Gymnastics - 0
- 2. Social Aspects - 6
  - 2.1 Friends took the class – 2
  - 2.2 Social in class – 4
  - 2.3 Teamwork - 0
- 3. Break from “regular school” - 4
  - 3.1 No homework – 1
  - 3.2 No desk work/notes – 0
  - 3.3 Being outdoors - 3
- 4. Importance of HPE - 7
  - 4.1 Exercise/Stay Active – 4
  - 4.2 Self betterment/Improvement – 2
  - 4.3 Stress/Energy Release – 0
  - 4.3 Personal Enjoyment/Fun - 1
- 5. Health Class - 5
  - 5.1 Learning about the Body – 1
  - 5.2 Learning about Drugs/Alcohol/Sexed – 1
  - 5.3 Learning about Staying Healthy (Nutrition, Exercising) – 0
  - 5.4 General Health Class - 3
- 6. Easy Class/Credit – 4
- 7. Teacher – 1

### ***Males in HPE – 61 Total Subjects***

- 1. Activity Choices - 76
  - 1.1 Playing Sports/Games - 44



- 1.2 Learning New Sports/Games – 5
- 1.3 Working out/Weight Training – 15
- 1.4 Fitness testing (running, Beep Test, 12 minute Run) - 12
- 1.5 Dance/Gymnastics - 0
- 2. Social Aspects - 6
  - 2.1 Friends took the class – 2
  - 2.2 Social in class – 4
  - 2.3 Teamwork - 0
- 3. Break from “regular school” - 7
  - 3.1 No homework – 2
  - 3.2 No desk work/notes – 5
  - 3.3 Being outdoors - 0
- 4. Importance of HPE - 13
  - 4.1 Exercise/Stay Active – 5
  - 4.2 Self betterment/Improvement – 7
  - 4.3 Stress/Energy Release – 0
  - 4.3 Personal Enjoyment/Fun - 1
- 5. Health Class - 11
  - 5.1 Learning about the Body – 5
  - 5.2 Learning about Drugs/Alcohol/Sexed – 1
  - 5.3 Learning about Staying Healthy (Nutrition, Exercising) – 0
  - 5.4 General Health Class - 5
- 6. Easy Class/Credit – 3
- 7. Teacher – 1

## **Itemized Qualitative Data – “Dislikes”**

### ***Females not in HPE – 52 subjects***

- 1. Activity Choices - 49
  - 1.1 Playing Undesired Sports/Games – 16
  - 1.2 Lack of Choice/Variety - 3
  - 1.3 Fitness Training/Testing – 15
  - 1.4 Skill Assessments - 5
  - 1.5 Peer ability/effort/conduct in class – 2
  - 1.6 Competition - 8
- 2. Health Class - 28
  - 1.1 Content/Work Load – 5
  - 1.2 Being in Classroom – 4
  - 1.3 Tests/Exams - 4
  - 1.4 Health in General – 15
- 3. Social Aspects - 12
  - 1.1 Showering/Changing – 2
  - 1.2 Being sweaty - 4
  - 1.3 Appearance/Feel for rest of day – 6
  - 1.4 Lack of Perceived Ability - 0

- 4. Importance of HPE - 1
  - 1.1 – Not needed for future - 0
  - 1.2 – Waste of credit - 0
  - 1.3 – Not fun - 1
- 5. Teacher – 0

### ***Females in HPE – 66 subjects***

- 1. Activity Choices - 51
  - 1.1 Playing Undesired Sports/Games – 16
  - 1.2 Lack of Choice/Variety – 8
  - 1.3 Fitness Training/Testing – 14
  - 1.4 Skill Assessments - 1
  - 1.5 Peer ability/effort/conduct in class – 8
  - 1.6 Competition - 4
- 2. Health Class - 33
  - 1.1 Content/Work Load – 9
  - 1.2 Being in Classroom – 6
  - 1.3 Tests/Exams - 5
  - 1.4 Health in General – 13
- 3. Social Aspects - 12
  - 1.1 Showering/Changing – 2
  - 1.2 Being sweaty - 5
  - 1.3 Appearance/Feel for rest of day – 3
  - 1.4 Lack of perceived ability - 2
- 4. Importance of HPE - 1
  - 1.1 – Not needed for future - 0
  - 1.2 – Waste of credit - 0
  - 1.3 – Not fun - 1
- 5. Teacher - 3

### ***Males not in HPE – 48 subjects***

- 1. Activity Choices - 25
  - 1.1 Playing Undesired Sports/Games – 6
  - 1.2 Lack of Choice/Variety – 5
  - 1.3 Fitness Training/Testing – 8
  - 1.4 Skill Assessments -
  - 1.5 Peer ability/effort/conduct in class – 0
  - 1.6 Competition - 12
- 2. Health Class - 33
  - 1.1 Content/Work Load – 3
  - 1.2 Being in Classroom – 4
  - 1.3 Tests/Exams - 3
  - 1.4 Health in General – 23
- 3. Social Aspects - 5
  - 1.1 Showering/Changing – 1

- 1.2 Being sweaty - 1
- 1.3 Appearance/Feel for rest of day – 2
- 1.4 Lack of Perceived Ability - 1
- 4. Importance of HPE - 1
  - 1.1 – Not needed for future - 0
  - 1.2 – Waste of credit - 1
  - 1.3 – Not fun - 0
- 5. Teacher – 2

***Males in HPE – 61 subjects***

- 1. Activity Choices - 34
  - 1.1 Playing Undesired Sports/Games – 12
  - 1.2 Lack of Choice/Variety - 4
  - 1.3 Fitness Training/Testing – 10
  - 1.4 Skill Assessments – 0
  - 1.5 Peer ability/effort/conduct in class – 8
  - 1.6 Competition -8
- 2. Health Class - 32
  - 1.1 Content/Work Load – 7
  - 1.2 Being in Classroom – 3
  - 1.3 Tests/Exams - 3
  - 1.4 Health in General – 19
- 3. Social Aspects - 3
  - 1.1 Showering/Changing – 1
  - 1.2 Being sweaty - 0
  - 1.3 Appearance/Feel for rest of day – 1
  - 1.4 Lack of Perceived Ability - 1
- 4. Importance of HPE - 0
  - 1.1 – Not needed for future - 0
  - 1.2 – Waste of credit - 0
  - 1.3 – Not fun - 0
- 5. Teacher - 1

## Appendix F: District School Board of Niagara Research Agreement

### THE DISTRICT SCHOOL BOARD OF NIAGARA APPENDIX D RESEARCH AGREEMENT

In accordance with the Municipal Freedom of Information and Protection of Privacy Act and specifically Form 1, as set out in Ontario Regulation 517, as amended.

This agreement is made between: **Colin Pybus (Brock University, Physical Education Dept)**  
**And THE DISTRICT SCHOOL BOARD OF NIAGARA**

The researcher has requested access to the following records containing personal information in the custody or control of the institution (Describe the records):

The researcher understands and promises to abide by the following terms and conditions:

1. The researcher will give access to personal information in a form in which the individual to whom it relates can be identified only to the following persons: **Dr. Ken Lodewyk (Brock University)**
2. Before disclosing personal information to persons mentioned above, the researcher will enter into an agreement with those persons to ensure that they will not disclose it to any other person.
3. The researcher will keep the information in a physically secure location to which access is given only to the researcher and the persons mentioned above.
4. The researcher will destroy all individual identifiers in the information upon completion of the study.
5. The researcher will not contact any individual to whom personal information relates, directly or indirectly, without the prior written authority of the District School Board of Niagara.
6. The researcher will ensure that no personal information will be used or disclosed in a form in which the individuals to whom it relates can be identified without the written authority of the District School Board of Niagara.
7. The researcher will notify the District School Board of Niagara in writing immediately upon becoming aware that any of the conditions set out in this agreement have been breached.

Signed at Brock University, this 19<sup>th</sup> day of January, 2009.

Signature of Researcher(s):

Signature of Official: John Dickson



Name of Researchers: Colin Pybus

Address: Brock University  
St. Catharines, Ontario  
L2S 3A1 905-688-5550 ex. 5220  
Telephone Number: 905-XXX-XXXX (researcher)

Position of Official: Administrator, Curriculum

Address: Don Reilly Resource Centre  
13227 Lundy's Lane, Allanburg, ON L0S 1A0  
Telephone: 905-227-5551