GENDER SEGREGATED PHYSICAL EDUCATION: AN ALTERNATIVE TO INCREASE ENJOYMENT AMONG STUDENTS

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GENDER SEGREGATED PHYSICAL EDUCATION: AN ALTERNATIVE TO INCREASE ENJOYMENT AMONG STUDENTS

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ABSTRACT

Physical inactivity is a growing concern for adolescents in many areas of Newfoundland and Labrador (Canadian Community Health Survey, 2010). Regularly scheduled physical education periods during school time can act as a platform to counteract the rising physical inactivity levels. However, junior high students sometimes have reservations about physically exerting themselves in the presence of opposite gendered peers (Maihan, Murrie, Gonzalez, & Jobe, 2006). In this study gender segregation was explored as a possible alternative to alleviate these pressures. Sixty-six students (thirty-eight boys and twenty-eight girls) from grades seven, eight, and nine participated in a five class unit of gender segregated physical education, spanning the five out of the six themes of the prescribed curriculum, which include alternative activities, court and field activities, fitness activities, leadership/cooperative activities, and rhythmic activities (outdoor activities was not included) (Newfoundland and Labrador Department of Education, 2004). Data was collected via the Intrinsic Motivation Inventory (IMI) (Deci & Ryan, 1985), focus group sessions, as well as notes takes during the research process. The results of this study provide strong evidence for the positive impact of gender segregated physical education classes at the grade

eight and nine level. Grade seven students however reported less interest in the gender segregated environment.

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INTRODUCTION

General Overview

The issue of physical inactivity, which is a major contributing factor to the accompanying obesity epidemic that is currently facing physical educators, is a concern that has been examined from a variety of viewpoints (Biddle, Fox, & Boutcher, 2000; Canadian Institutes of Health Research, 2004; Shields, 2005; Winston, 2009). It is becoming common knowledge that children and youth who are overweight or obese are at an increased risk for a decreased quality of life through issues with physical, mental, and social health (Physical and Health Education Canada, 2009). More health issues may also develop later in life, such as type 2 diabetes, heart disease, and certain cancers. Strategies to combat this phenomenon through physical education are being designed, implemented, and evaluated.

In physical education, participation is of the utmost importance. If students do not enjoy their physical education experiences, they are more likely to fabricate excuses or reasons why they are unable to fully participate. In particular, when students reach the age of junior high school (grades seven, eight, and nine), they sometimes develop an inhibition toward physical activity and therefore physical education classes. This period of time generally correlates

with a major transition period from childhood to adulthood; puberty. Puberty is a dynamic phase of development signified by rapid changes in body size, shape, and composition. Puberty is also a time of dramatic weight gain; fifty percent of an individual's adult weight is gained throughout puberty. It is crucial that adolescents remain at least slightly physically active during this period in order to attain motor abilities (Rogol, Clark, & Roemmich, 2000). Research is ongoing to attempt to fully explicate the reasoning behind the change in attitude that results in lower levels of physical activity among adolescents (Gibbons, Gaul, & Blackstock, 2004).

Changes in the attitudes of junior high school students are often attributed to the psychological experience of puberty that adolescents battle with throughout junior high school (Baker, Birch, Trost, & Davidson, 2007). Girls tend to be more severely affected by the changing of their bodies than boys. As a result, early maturing girls, ages eleven and twelve, report much lower activity levels in junior high school than those who are later in maturing, at fourteen and fifteen years of age (Baker et al., 2007). When boys reach the age of sexual maturation, they also begin to objectify the female body (Fredrickson & Roberts, 1997). Body objectification is a form of gender oppression where the work and effort of females is trivialized and their accomplishments are ignored

(Fredrickson & Roberts, 1997). Although society has become more aware of the prevalence and severity of the exploitation that females receive as a result of body objectification, the effects of a visual inspection from a male can only be felt by the female who is being objectified (Fredrickson & Roberts, 1997). Girls in physical education classes are placed in a vulnerable environment to be objectified by boys. When this happens, girls are likely to withdraw themselves from physical activity whenever possible (Parsons & Betz, 2003).

Others say that physical inactivity is a recent trend directly associated with today's technology and entertainment industry (Cespedes, 2011; Kautiainen, Koivusilta, Lintonen, Virtanen, & Rimpela, 2005; Kuhle, Allen, & Veugelers, 2010; Smialek, year unknown). A recent increase in the amount of time adolescents and teens spend in front of a screen, either television, computer, or other, has a positive correlation with the prevalence of becoming overweight or obese (Kautiaine et al, 2005). Smialek (year unknown) reported that the reason for continual decreased rates of physical activity, and therefore increased obesity, from year to year is due primarily to many behavioural and environmental influences. There has been an increase in a type of sedentary lifestyle due to the use of electronic media such as video games, the use of cellular phones for text messaging and other cyber features, and the internet as a replacement for

physical activity (Cespedes, 2011; Kautiainen, Koivusilta, Lintonen, Virtanen, & Rimpela, 2005; Kuhle, Allen, & Veugelers, 2010; Smialek, year unknown). Adolescents are spending vast amounts of time in front of a television, playing video games, on their cell phones, and playing games, researching and learning on the computer. Technology can provide valuable learning experiences, entertainment, and opportunities, but it must not take the place of physical activity (Cespedes, 2011).

Research on strategies to prevent and counteract the declines in physical activity among youth has been diverse in nature. It has included methods of varied instruction that might help maintain students' interest in physical education, innovative activities that help deliver the prescribed curriculum, issues surrounding dimensions of instruction, focus of assessment, and human resources (Robinson & Melnychuk, 2006). For instance, currently in the Nova Central School District of Central Newfoundland, the idea of differentiated instruction, referring to how a teacher adapts his or her teaching methods to allow students to reach their potential, is dominating teacher professional development seminars. Also, there has been a recent push in some educational systems across Canada to lower the ratio of teachers to students in most grade

levels (Alberta Department of Education, 2011; Newfoundland and Labrador Department of Education, 2011; Quebec Education Program, 2011).

Although having a positive attitude is crucial for a student to achieve success in junior high school (Connolly, Hatchette, & McMaster, 1998), the manner in which a teacher addresses his or her students can also have a great impact on the learning experience (Fallona, 1999). In 1986, Mosston and Ashworth established a spectrum of ten teaching styles for physical education which highlight the interaction between teacher and student. These range from *command style,* in which the teacher makes all the decisions, to *self teaching,* where the student takes on full responsibility of the learning process. This spectrum offers a range of options for teachers to incorporate their students' individual needs, assuming that there will be a teaching style that suits every learner (Doherty, 2003).

When comparing the assessment and evaluation procedures for students in physical education classes within the Canadian provinces, there seems to be one unified characteristic; the primary purpose of assessment and evaluation in education is to improve student learning (Alberta Department of Education, 2011; Manitoba Education and Training, 2010; Newfoundland and Labrador Department of Education, 2004; Quebec Education Program, 2011). However, the

methods of student evaluations vary greatly. In Newfoundland and Labrador, the Department of Education does not prescribe how students are to be evaluated. Rather, the junior high physical education curriculum guide gives sample evaluation guides. One such guide delimits 65% to participation, including readiness, proper attire, and punctuality, 20% to personal fitness, which addresses various components of health- and skill-related fitness attributes, and 15% to written work, involving journals, poster displays, quizzes, and other forms of writing (Newfoundland and Labrador Department of Education, 2004). The Manitoba curriculum, on the other hand, suggests a different approach to evaluation in physical education. Their physical education curriculum guide places the onus of weighting marks on the school or teacher. Yet, it is stated that a skill-based approach as opposed to a knowledge-based one is preferred, so that "students are able to use and apply learning effectively" (Manitoba Education and Training, 2000).

Perhaps one of the biggest hurdles that presently face physical education in Canadian schools is the lack of qualified physical education teachers to deliver the intended curriculum (Robinson & Melnychuk, 2006). It is likely that teachers who do not have a background in physical education will be less sensitive to student needs than a qualified physical education teacher. Currently, school

boards all across Canada are attempting to incorporate alternative avenues of physical activity to take the place of the lacking physical education programs (Leidl, 2008; Young, 2010). The *FitKid Coaches* program that is beginning to be established in parts of British Columbia uses older students to teach about health, fitness, proper training techniques, and nutrition to younger students within the school (Young, 2010). In Nova Central School District of Newfoundland and Labrador, a program called *Quality Daily Physical Activity* encourages the regular classroom teacher to deliver a given amount of physical activity sessions to students on a daily basis (Newfoundland and Labrador Department of Education, 2011). Similarly, *Quality Daily Physical Education* is an initiative in Saskatchewan that suggests classroom teachers are primarily responsible physical education delivery (Leidl, 2008). Collectively, these programs may be beneficial to students in terms of increasing the amount of physical activity being offered, however, students who feel inhibited to participate due to the presence of members of the opposite gender still may not benefit (Nicaise, Fairclough, Bois, Davis, & Cogerino, 2007).

Mixed gendered classes are the current model for all physical education programs in Newfoundland and Labrador at all grade levels, kindergarten through to grade twelve (level III). However, research in the area of gender

segregated physical education has been experimented with in other areas of the country (Derry, 2003; Gibbons, Gaul, & Blackstock, 2004; Gibbons, Humbert, & Temple, 2010; Humbert, 2006; Thorne, 1993). Previous studies on gender segregated physical education have tended to focus on the level of exertion during physical activity of pre-adolescent and adolescent boys and girls (Trost, Pate, Sallis, Freedson, Taylor, Dowda, & Sirard, 2002). Little research aims at increasing participation rates, through increased enjoyment, via gender segregated physical education classes.

Statement of Purpose and Rationale of the Study

The central purpose of this study is to attempt to determine if enjoyment levels of students in junior high school physical education could be increased through the use of gender segregated classes. Enjoyment levels are influenced by a student's interest, perceived choice, perceived competence, and pressure/tension while completing a task (Deci, Eghrari, Patrick, & Leone , 1994).

For most physical education teachers, student participation in junior high physical education is the number one concern (Mandigo, Francis, Lodewyk, & Lopez, 2009). Generally, if students are taking part in physical education classes, they are at least meeting the minimum requirements for a passing grade in the course. However, mere participation is not enough to ensure appropriate levels

of physical activity for optimum physical, mental, and social health. Physical education teachers strive for their students to enjoy their classes to the fullest. This study will attempt to determine if gender segregation could have a positive effect on student enjoyment levels of junior high physical education. At this crucial age, some students begin to become self-conscious of their bodies and of their actions. Often times, this is only heightened by interaction with members of the opposite gender (Maihan, Murrie, Gonzalez, & Jobe, 2006).

Research objectives guiding this research will focus on:

- Understanding current students' perceptions of physical education, levels of interest / enjoyment, perceived competence, perceived choice, and felt pressure and tension.
- Understanding students' ideas about enjoyment in physical education classes.
- Understanding if and how gender segregation impacts students' perceptions and enjoyment of physical education classes.

The gender of an adolescent's peers has a powerful influence on their actions and behaviours. Adolescents appear to operate within separate cultures identified by gender (Barton & Cohen, 2004). Given the importance of participation in physical education for health concerns, gender composition of

physical education might very well have a substantial influence on their level of physical activity, and impending health, later in life.

Physical education has changed over the years in terms of curriculum and student expectations with an overall intention to increase enjoyment levels and consequently increase participation (Morrow, 1983). However, little has changed in terms of gender composition (Morrow, 1983). Physical education in the Nova Central School District has traditionally been co-gendered. Therefore, little is known about the effects of gender segregated physical education on enjoyment levels, and therefore overall class participation. This alternative format of physical education might possibly be a means to combat the documented decline in physical activity among youth.

Researcher's Background

Given the dual-roles that I hold within the framework of this research project, it is important to clarify my background. I am a 26 year old, male, physical education teacher, currently in my third year of teaching. Thus far I have taught at one other school, in the same school district. This is my second year at my present school. I am the only physical education teacher at this school; therefore I am responsible for delivering the physical education program to students from grade seven to twelve. I am also the school's Athletic Director. In

this role, I am responsible for attaining teacher sponsors and coaches for all sports teams, organizing sporting events, making sure registration deadlines are met, as well as other sports and physical activity oriented tasks. In this role, I also coach a variety of sports teams at the junior and senior high levels.

Since I live in a rural area I also have teaching responsibilities at a neighbouring primary/elementary school. Teaching students from kindergarten to grade twelve also has impacted my teaching style. In dealing with younger students, kindergarten to grade six, a student-centered approach is nearly always necessary. In this case, participation is the entire goal of physical education. Sport specific skill sets are not applicable. Simple motor tasks such as projecting and receiving objects or using implements are included in the curriculum, but student exploration of these tasks is the emphasis. Therefore, a teacher centered teaching style is generally not appropriate. When students reach the junior and senior high school levels however, there is often an emphasis on sport specific skill development. This generally illustrates a need for a more teacher-centered approach. Since it is common for me to go from teaching a primary to a junior high physical education class, perhaps my teaching style has a tendency to carry over. In general however, I believe I am becoming fairly efficient in adapting my teaching style to the specific lesson and the grade of the class present.

REVIEW OF THE LITERATURE

There is a vast quantity of research readily available on the importance of physical education for the masses, the rise of physical inactivity and obesity among adolescents, and the influences of gender on the development of social attitudes and actions (Biddle, Fox, & Boutcher, 2000; Boutcher, 2000; Canadian Community Health Survey, 2010; Fox, 1999; Gray, 2009; McHugh, 1995; Physical and Health Education Canada, 2009; Rogol, Clark, & Roemmich, 2000; Winston, 2009). These are all very important and influential factors that have led to the proposal of gender segregated physical education classes.

A very strong argument for attempting to increase enjoyment levels of physical education and therefore participation is, of course, to combat rising inactivity and obesity levels among today's youth. To illustrate just how big this issue is becoming, physical inactivity has become one of the top ten causes of death and disability in the world (Winston, 2009; World Health Organization, 2011). In 2004, 26% of Canadian children (aged two – 17) were considered overweight or obese; one in four of the students in our primary, elementary, and secondary education systems (Gray, 2009). This indicates a 10% rise since 1979. It is proposed by many that this number will continue to rise unless the necessary precautions are soon put in place (Shields, 2005). The Canadian Institute of

Health Research (2004) published an article stating that the environmental reasons behind the increased rates of obesity are the availability of fast-food products and family eating practices and technological advancements. Due to these changes in the habits of society, people are turning to the education system to help combat the obesity epidemic (Gray, 2009).

According to the Canadian Community Health Survey (2010), Newfoundland and Labrador has the highest percentage of overweight or obese persons in Canada in every age category. Also, Active Healthy Kids Canada (2010) indicates that children in Newfoundland and Labrador are the least physically active in Canada. Only seven percent of children in Canada are meeting the Canadian guideline of sixty minutes of moderate velocity physical activity per day. Compare this to the six hours of screen time Canadian children take in on weekdays, and seven hours on weekends (Active Healthy Kids Canada, 2010). Canadian children and children in Newfoundland and Labrador more specifically, need to become more physically active.

Role of Physical Education

The importance of physical education to students in the education system is often overshadowed by core educational subjects, such as mathematics and language arts. Few members of society actually recognize the influence that

physical education can have on a child, while nearly everyone realizes the importance of literacy in other subject area (Mandigo et al, 2009). However, the United Nations (2002) released a report stating that literacy refers to the acquisition, by every child, youth, and adult, of essential life skills that enable them to tackle challenges they may face later in life, and is an essential step in basic education. Based on this definition, literacy is not solely focused on reading, writing, and mathematics. Literacy is concerned with how we communicate in society; social practices and relationships. It assumes both personal and social responsibility (Mandigo et al., 2009). Physical education utilizes cooperation and teamwork activities on a regular basis, providing excellent opportunities to foster this development in children. During physical education classes, students must take responsibility for their actions since the majority of learning comes via physical movement as well as interaction with peers. Therefore, classmates are often required to rely on one another to accomplish tasks and reach goals (Newfoundland and Labrador Department of Education, 2004).

Although physical education may sometimes be undervalued in society, it has a great impact on the social development of a child (Chorney, 2011). McHugh (1995) suggests that physical education is responsible for teaching children such

important life skills as respecting one's self and considering others, interpersonal negotiation, appropriate use of self-protection and self-disclosure strategies, and the application of conversational conventions, such as compliments, greetings, and inquiries. The relative informality of the gymnasium gives students a chance to relax and loosen up in ways that are often deemed unacceptable in other school curricular areas. Physical education classes become a great venue to learn social skills. Activity in the gymnasium is naturally socially different than activity in a classroom environment. This is primarily due to the utilization of movement. Because movement is generally the focus in physical education, the social environment is more casual. Also, behaviour that is unacceptable in a classroom is often permitted, and in some cases encouraged in the physical education environment. Touching or body contact is commonplace in certain physical activities, such as sports, noise and loud vocalizations are sometimes encouraged in terms of communicating with peers, and the ability to converse with classmates on a regular basis is often necessary in physical education. Physical education offers many social benefits to students including learning to depend on others, enhancing self-esteem and self-confidence, building a sense of responsibility, and instilling good sportsmanship. Given these qualities, and a

generally favourable informal atmosphere, physical education classes seem to be an ideal environment to develop social competencies (McHugh, 1995).

Hellison and Walsh (2002) outlined the goals that a physical activity based program, such as physical education in the school system, should aim to reach in terms of personal and social responsibility of youth. Individuals should learn to respect the rights and feelings of others. This can be accomplished through practicing self-control of temper and verbal comments, respecting everyone's right to be included, and becoming involved in peaceful and democratic means of conflict resolution (Hellison & Walsh, 2002). Individuals should develop a value for effort and teamwork through self-motivation, exploring, and being persistent with new tasks, as well as cooperating with peers (Hellison & Walsh, 2002). Through independent work and setting and reaching progressive goals, individuals should develop self-direction (Hellison & Walsh, 2002). Individuals should acquire leadership skills by being sensitive to others' needs and contributing to the total well-being of a group (Hellison & Walsh, 2002). Hellison and Walsh (2002) further suggest that lessons learned in a gymnasium environment must be taught so that they can easily transfer to other aspects of the learners' lives.

Impact of Physical Education on Physical Health

The Surgeon General (1999) states that physical activity helps to build and maintain healthy bones, muscles, and joints, control weight, build lean muscle, reduce fat, and prevent or delay the development of certain physical health problems. Quality physical education programs have the ability to increase the level of physical activity students receive, which can benefit each student's physical health (Chorney, 2011). It is important for physical education programs to provide continuous opportunities for students in junior high schools to be exposed to health-related interventions as they proceed to secondary schools (Chorney, 2011). This is one way to reinforce the importance of maintaining a healthy body and developing a lifelong commitment to health (Chorney, 2011).

Statistics show that children in Canada from ages five to seventeen are not active enough to meet international guidelines for optimal growth and development. The rate of physical inactivity among Canadian adolescents was 64% in 2000 (Craig, Cameron, Storm, Russell, & Beaulieu, 2001), and rose to 82% in 2002 (Craig & Cameron, 2004). Given that up to 97% of elementary aged school children participate in a physical education program, physical education is seen as an avenue for regular physical activity (Sallis & McKenzie, 1991). Ideally, for maximum physical health benefit, school physical education

programs should prepare children for a lifetime of physical activity (Sallis & McKenzie, 1991).

In a study by Sallis, McKenzie, Alcaraz, Kolody, Faucette, and Hovell, (1997) students from seven different elementary schools participated in a two-year physical education program in which students were assigned to one of three groups. Group A received 38 minutes of physical education lessons per week, Group B received 65 minutes of physical education lessons per week, and Group C received 80 minutes of physical education lessons per week. All students were assessed in five areas of physical health (mile run, skinfolds, sit-ups, pull-ups, and sit-and-reach) prior to, and after the two-year period. Students in Group C, the students with the highest physical education involvement each week, displayed the greatest improvement in each of the areas of physical health. Furthermore, students in Group B showed more improvements to their physical health than students in Group A. Clearly the amount of physical education a student receives has a positive correlation to the student's physical health (Sallis, McKenzie, Alcaraz, Kolody, Faucette, & Hovell, 1997).

Impact of Physical Education on Mental Health

To further illustrate the importance of physical education, it is beneficial to examine the effects that physical activity has on mental health. Physical

activity has been shown to relieve symptoms of depression and anxiety, improve mood, increase efficiency of cognitive functioning, and improve self-perception, self-esteem, and self-efficacy (Biddle et al., 2000; Skrinar, 2003). Biddle et al. (2000) argues that physical activity can be used as a method to treat depression and anxiety. In fact, this research suggests that physical activity can be equally as effective as using drugs with far fewer negative side effects, citing only injury or exercise dependence. This has vast implications to the world of education. Students who enjoy physical education and therefore actively participate, have a significant chance to feel better about themselves and will likely be better able to accomplish the tasks at hand in other academic subjects (Biddle et al, 2000).

Studies show that individuals who regularly exercise experience better moods than those who do not exercise (Dua & Hargreaves, 1992; Kritz-Silverstein, Barrett-Connor, & Corbeau, 2001; Slaven & Lee, 1997). The effects of regular physical activity on mood have mainly been studied using aerobic exercise, but evidence indicates that anaerobic physical activity, including body building or flexibility training, can also reduce depressive symptoms (Paluska & Schwenk, 2000; Salmon, 2001). Physical activity also aids in cognitive function and sleep quality. Boutcher (2000) and Etnier, Salazar, Landers, Petruzzello, Han, and Nowell (1997) reviewed the impact of physical activity on reaction time,

memory, and fluid intelligence in older people and a positive correlation was shown in all areas. Fox (1999) reported that insomnia affects nearly one third of the adult population and is associated with poor work performance. Studies show that exercise has been demonstrated to have a moderate positive effect on individuals struggling with sleep disorders (Fox, 1999). Collectively, these results suggest that students who actively participate in a physical education program are more likely to reach adequate levels of physical activity to benefit their mental well-being.

Impact of Physical Education on Social Health

Social health refers to the health of an individual with reference to his or her ability to interact with others (Wiesen, 2011). Being socially healthy is important since research has established how social interactions can assist in improving other forms of health (Wiesen, 2011). Physical education can be the ideal setting for adolescents to increase their social health (McHugh, 1995). Furthermore, physical education aims to develop positive values which can support the proper social development of students. Social benefits that stem from a well-developed physical education program include learning to depend on others, enhancing self-esteem and self-confidence, building an appreciation for

teamwork and responsibility, and instilling good sportsmanship (McHugh, 1995).

Physical education can be a useful resource in developing students' morality with proper development of plans for instruction and assessment of appropriate ethical and moral values (Tomme & Wendt, 1993). For example, cooperative games, one on the six themes outlined by the Newfoundland and Labrador Department of Education (2004) junior high school curriculum, are a logical means of teaching these positive character traits. The goals of cooperative games are met through the mutual interdependence of students. Cooperative games have been linked to an increase in the amount of positive social behaviors demonstrated by students; while competitive games actually increase undesirable behaviors such as cheating, fighting, and lack of concern for others (Tomme & Wendt, 1993). Although, another intended learning outcome of most physical education programs is to teach students how to win and lose properly during competitive activities (Newfoundland and Labrador Department of Education, 2004).

Curriculum Delivery

The method in which the intended curriculum is delivered can have an impact on the extent to which a student benefits physically, socially, and

mentally, from the physical education experience. A physical education teacher has a wide variety of teaching styles that he or she can choose from. Teaching style simply refers to the general pattern in which a particular set of strategies are utilized. One of the most significant advances in the physical education pedagogy comes from Mosston (1966), who developed and explained a spectrum of physical education teaching styles based on the interaction of teacher and student (Nixon & Locke, 1973). The spectrum establishes a variety of relationships possible between the teacher and learner and is centered on the importance of decision-making (Mosston & Ashworth, 1986). The teaching styles are command, practice, reciprocal, self-check, inclusion, guided discovery, divergent, individual, learner initiated, and self teaching. The spectrum of teacher-learner relationship ranges from the teacher making all the decisions, as seen in the command style, to the student taking full responsibility of the learning process, as seen in the self teaching style. This spectrum of teaching styles gives physical educators the ability to adapt to a diversity of learning styles. An effective physical education teacher is able to adjust his or her teaching style to best suit the individual needs of his or her students. This creates an optimum working environment, maintains discipline, sets high standards, facilitates students' cognition, and allows for successfully meeting the intended

curriculum outcomes taking place in Newfoundland and Labrador's gymnasiums (Coates, 1997).

Newfoundland and Labrador Physical Education Curriculum

The physical education program in Newfoundland and Labrador has been under scrutiny for the past few years (Physical and Health Education Canada, 2009). Physical and Health Education Canada (2009) released a statement saying that increased physical education time is needed for students in Newfoundland and Labrador. Currently, the Department of Education in Newfoundland and Labrador recommends that six percent of instructional time be devoted to physical education. This is the second lowest time allotment in Canada; only Prince Edward Island is lower (Physical and Health Education Canada, 2009). Most provinces recommend ten percent time allotment for physical education at the junior high level (Alberta Department of Education, 2011; Newfoundland and Labrador Department of Education, 2011; Prince Edward Island Department of Education and Early Childhood Development, 2011; Quebec Education Department, 2011). Yet, the six percent recommended in Newfoundland and Labrador is not being met in many schools (Physical and Health Education Canada, 2009). Also, physical education teachers in Newfoundland and Labrador have an unreasonably high number of students for whom they are responsible

(Physical and Health Education Canada, 2009). Physical education teachers are further expected to plan, organize, and implement school-wide physical activity programs. This is placing undue stress on many physical education teachers in the Newfoundland and Labrador school system and may in turn be impacting the quality of teaching and learning (Physical and Health Education Canada, 2009).

The junior high school physical education curriculum in Newfoundland and Labrador is based on teaching to the three domains of learning: psychomotor, cognitive, and affective (Newfoundland and Labrador Department of Education, 2004). The psychomotor domain involves knowing how to move, engaging in physical activities, and having an experience with movement that is intrinsic to any particular activity. The cognitive domain refers to using the cognitive process that is concerned with learning concepts, rules, and procedures. The affective domain stands in reference to the social skills that are to be achieved through cooperation, teamwork, competition, and other components of physical education (Newfoundland and Labrador Department of Education, 2004).

The current curriculum for junior high school physical education in Newfoundland and Labrador is oriented through a personal-global approach

(Newfoundland and Labrador Department of Education, 2004). It supports balanced priorities between personal and global concerns and acknowledges a need for social change. The personal-global orientation states that junior high students need activities that help them create their own identity. Therefore, the curriculum directs students toward success in learning self-control, involvement, self-responsibility and caring (Newfoundland and Labrador Department of Education, 2004).

The actual content that is delivered through the junior high physical education program in Newfoundland and Labrador is divided into six themes which provide varied movement experiences and active living opportunities. The themes include alternative activities, court and field activities, fitness activities, leadership/cooperative activities, outdoor activities, and rhythmic activities. Since activities from each of the themes can be chosen at varying grade levels, a wide variety and balance of activities is easily achieved (Department of Education, 2004).

All curriculum areas in Newfoundland and Labrador school systems share a set of essential graduation learnings. These are attributes that teachers attempt to instill in all students by the time they finish high school and become contributing members of society. The seven essential graduation learning include

aesthetic expression, citizenship, communication, personal development, problem solving, technological competence, and spiritual and moral development. It is under the discretion of the physical education teacher how he/she decides to accomplish this task. Table 1 illustrates how physical education can contribute to the essential graduation learnings.

Table 1: Contribution of Physical Education to the Essential Graduation Learnings.

Essential Graduation Learning	Physical Education Contribution
Aesthetic Expression	Multicultural, folk, creative and other forms of rhythmic movement provide opportunities for students to express themselves through the arts.
Citizenship	Court and field games and activities allow students to demonstrate an understanding of rules and regulations.
Communication	Listening is overtly and covertly learned in a physical education setting. Students must listen to instruction in a large, open space, often while engaged in activity.
Personal Development	A guiding principle of physical education is to provide the foundation, skills, knowledge, and understanding for students to pursue active, healthy lifestyles.
Problem Solving	Decision making is required during all activities either in response to a stimuli such as a Frisbee coming toward a person or the force required when curling.
Technological Competence	Fitness activities offer students the opportunity to use dynamometers, skin-fold calipers, fitness software, stereo and video equipment such as CD and DVD players.
Spiritual and Moral Development	Fair play concepts are a belief system which concentrates on the ethical and moral behaviour and treatment of players, coaches, parents, officials, and spectators. Physical education emphasizes these same codes in activities within the curriculum.

(Newfoundland and Labrador Department of Education, 2004)

Gender and Physical Education

In 1997, the President's Council on Physical Fitness and Sports in the United States, after the first Surgeon General's Report on Physical Activity and Health, suggested that men and women of all ages could improve their quality of life through a lifelong process of regular moderate physical activity. It stated that a thirty to forty minute bout of moderate physical activity, such as brisk walking, cycling, or dancing, will reduce serious health risks, regulate symptoms of depression and anxiety, help control weight, and help build and maintain healthy bones, muscles and joints. The President's Council on Physical Fitness then released a report stating that physical education programs should provide instruction and experiences that increase girls' self-confidence, offer ample opportunities for participation, and establish social environments that are supportive of a range of physical activities. This is due to the fact that girls are likely to have lower self-esteem about their physical capabilities as compared to their male counterparts (United States Department of Health and Human Services, 2000).

Throughout history, physical education students have been divided by gender (Zeigler, 1979). When physical education was first introduced in the early 1900's in Canadian schools, classes were not only segregated by gender, but the

curriculum delivered was also different for each gender. Boys participated in military drill activities while girls performed calisthenics (Martens, 1990). In the late 1960's and early 1970's, gender segregated educational practices were re-evaluated which spawned the development and passage of Title IX on the Educational Amendment Act in the United States. Title IX states that there shall be no discrimination based on sex, from any program that receives federal assistance. This became the landmark for gender equality in schools. Title IX led to new developments in gender neutral curricular programs and reconsiderations of how educational environments should be arranged to meet the needs of both boys and girls. The overall intention was to ensure that girls were receiving the same type of treatment with regards to teaching and learning as were the boys (Shearin, 2008). School districts today operate under the understanding that all classes, including physical education, integrate genders to ensure equal access and quality curriculum. Integration is believed to be a better method of delivery of instruction as compared to gender segregation since stereotypical views are challenged and students learn to appreciate and positively view the differences of others (Stidder & School; Vertinsky, 1992). The Ministry of Education in British Columbia (1995) identified issues with mixed gendered physical education, but their solution to these issues was not to

segregate the genders, but rather to define strategies to overcome the issues while keeping the genders together. These strategies included utilizing cooperative rather than competitive activities to deliver the required curriculum, communication strategies that examine the interaction between male and female students, the use of inclusive language, student input to activities, and the implementation of activities in which neither gender has had much past experience. The Ministry's approach to gender equitable physical education also included differentiating teaching strategies, such as avoiding delimiting special rules in order to accommodate the girls (Ministry of Education British Columbia, 1995). Nevertheless, there remains evidence suggesting that gender segregation would be more beneficial to both males and females.

Maihan et al. (2006) further addresses the issue of social discrimination that occurs between genders in physical education. Boys often stigmatize physically active girls by labeling them as 'tomboys'. Girls report that boys are influential barriers in shaping their beliefs about physical activity. The reciprocal however, does not apply; boys generally do not feel influenced by girls during physical education classes. Griffin (1985) states that a coeducational setting for learning physical education is neither equitable nor conductive for girls, as well as some boys. Girls' potential to learn and gain vital skills is limited by boys'

verbal harassments, display of physical contact, and impeding girls' progress. Boys sometimes make girls feel uncomfortable in physical activity environments by objectifying them based on their physical appearance (Fredrickson & Roberts, 1997). Girls however, did not impede the boys in any way; in fact, they stay out of the boys' way. This leads to further decreased levels of participation of girls. Students who experience negativity during interaction with peers in physical education classes may develop anxiety associated with involvement causing them to become non-participants (Kunesh, Hasbrook, & Lewthwaie, 1992). Moreover, physical education environments are critical to the development of positive or negative feelings toward physical activity, and research demonstrates that positive experiences with physical activity during adolescence affect participation levels of adults (Sallis & McKenzie, 1991).

Reports have shown that the most essential factor to participation in physical education is feeling comfortable in a supportive environment, free from harassment (Humbert, 2006). Requiring students to change their clothes and receiving negative comments from other students are often labeled as major sources of discomfort (Humbert, 2006). These issues are even more commonly reported among the female population of physical education students, who reported feelings of inadequacy relating to the "ideal" female body image

(Humbert, 2006). Because of these situations, female adolescent students feel "exposed" during physical education classes (Humbert, 1996). Compounded with the difficulty of disrobing in front of their peers, female adolescents also site verbal harassment from their male counterparts as being another chief source of discomfort (Humbert, 2006). The comments that girls receive from the boys consist of remarks regarding their physical appearance, criticisms of their athletic abilities, and well as sexual harassment, which may also be physical in nature (Humbert 2006; Singleton, 2006). For these reasons, girls report preferring gender segregated physical education classes, in which they feel safer, more comfortable, and more willing to participate (Derry & Philips, 2004, Lirgg, 1994; Ryan, Fleming, & Maina, 2003; Treanor, Graber, Housner, & Weingand, 1998).

A further reason for non-participation for girls in physical education is due to the level of competition created mainly by the boys during physical education classes (Singleton, 2006). The junior high physical education curriculum in Newfoundland and Labrador, as well as the rest of Canada, has a deep root in sports (Newfoundland and Labrador Department of Education, 1994; Singleton, 2006). Therefore, competition is inevitable. Competition can be an issue during mixed gendered physical education classes since males and

females interpret competition differently; specifically, girls are generally less competitive than boys (Singleton 2006).

When male and female students interact together during physical education classes, the level of intensity at which performance takes place has a tendency to be mediated by the girls, which can affect adolescent boys' physical education experiences (Derry, 2003). When boys reach the age of adolescence, noticeable physical advances in terms of physical prowess occur (Derry, 2003). Since girls do not experience the same type of physical development, they are sometimes not able to keep up with the boys' level of performance in physical activities (Derry, 2003). When adolescent boys and girls are integrated in physical education settings, girls hinder the boys' ability to perform (Derry, 2003). This, along with the safety concerns, is a major criticism of gender mixed physical education (Derry, 2003).

In Finland, adolescents are demonstrating higher levels of physical inactivity than anywhere else in the Europe (Samdal, Tynjala, Roberts, Sallis, Villberg, & Word 2007). Samdal et al (2007) reported that only forty three percent of girls and fifty six percent of boys engaged in vigorous physical activity at least four times a week. Research has also shown that physical activity levels of Finnish children quickly decline after the age of twelve (Telama & Yang, 2000).

As a method to combat these recent trends, grades five to nine physical education classes in Finland are totally divided by gender; male teachers teach the boys and female teachers teach the girls. The intended curriculum outcomes are the same for each group, yet the prescribed documentation requests that physical education teachers make allowances for the differing needs of boys and girls at this stage of development (Finnish National Board of Education, 2004). Although it is not outlined in the curriculum guides, teachers sometimes unite the gendered groups. However, this practice was typically used only to teach the boys good manners and courtesy toward girls. For example, a unit on dance would be joint, between groups, so that proper dance etiquette could be learned (Berg & Lahelma, 2010). There is a variety of rationale behind the gender segregation of physical education classes in Finland. Primarily, it is because of tradition; gender segregation is the way it has always been and no one has identified any reason to change. Beyond tradition though, physical education classes are divided by gender to allow boys and girls to accept the physical and mental differences that arise during puberty, without the social pressures of the opposite gender being present. The different needs of the genders, based on their varying rates of growth and development can be interpreted by the physical education teacher and appropriately catered to (Berg & Lahelma, 2010).

Furthermore, adolescent boys and girls are seen to have different strengths and weaknesses. Girls excel more at rhythmic activities such as gymnastics and dance, whereas the boys are seen to have a physical prowess over the girls. Many physical educators in Finland view this as the main reason for gender segregation (Berg & Lahelma, 2010).

Studies have shown that in mixed gendered physical education classes, teacher to student interactions have not always been equal (Koca, 2009, Napper-Owen, Kovar, Ermler, & Mehrohof, 1999, & Nicaise et al., 2007). Depending on the activity or lessons being taught, one gender sometimes receives bias over the other. For instance, Nicaise et al. (2007) stated that girls receive more teacher interaction during badminton lessons whereas boys are the focus during weight training. Furthermore, studies have indicated boys receive more positive, constructive feedback during mixed gendered physical education classes than girls. Girls are more at risk of having ineffective learning experiences in the mixed gendered environment due to gender role stereotypes, sexism, harassment, and the development of secondary sexual characteristics (Garcia, 1994). Monagan (1983) explained also that boys and girls play differently, and that the interaction of the genders in physical education does not produce the desired results as well as if genders were segregated. Girls had a tendency to

cater to the boys by giving away better quality equipment or letting boys have more turns as a means of appeasing the more aggressive nature of boys. This results in girls receiving less engaged time for skill development or physical activity (Monagan, 1983). Overall, there is an abundance of research stating that gender differences in the areas of attitudes, strengths and weaknesses, growth and development, and more suffice for the utilization of gender segregation in physical education.

Gender segregation of schooling in general has been used with great successes in recent years (Nikiforuk, 2005). In 1999, James Lyng High School, in Montreal, Quebec underwent a transformation to separate the sexes of grade seven classes. This process began as a trial with only the grade sevens being divided, but by the end of the school year teachers and students enjoyed the improved test scores and improved social atmosphere that gender segregation was introduced into grades eight and nine in the following school year. Today, the percentage of students passing final exams increased from 65 to 87 percent; and the percent of students continuing to post-secondary education has risen from 17 to 30. Furthermore, both discipline problems and absenteeism have decreased (Nikiforuk, 2005).

In 2000, the Australian Council for Educational Research released an investigation comparing the academic performance of over 250,000 grade 12 students. It reported that students who were taught in gender segregated classrooms ranked 15 to 22 percentiles higher in academic performance as compared to students at the same level who were taught in co-gendered classrooms. And again, students were better behaved and enjoyed the learning experience more (Nikiforuk, 2005).

The Growing Concern of Physical Inactivity in Newfoundland and Labrador

The serious effects that decreased physical activity levels can have on a child's physical, social, and mental health are immense (Active Healthy Kids Canada, 2010; Biddle, Fox, & Boutcher, 2000; Etnier et al, 1997; Fox, 1999; Tomme & Wendt, 1993). Children in Newfoundland and Labrador have the lowest physical health in the country (Canadian Community Health Survey, 2010). Physical education is a tool that can be used to combat this climbing health hazard. When a physical education teacher understands his or her role in delivering the curriculum prescribed by legislated documents, and understands student needs, he or she can have on positive impact on their lives (Hickson, 2003). However, if a student continues to feel uncomfortable in the physical education environment due to the presence of opposite gendered students, the

teacher has limited options to increase participation (Maihan et al, 2006). Currently there are no references or recommendations to gender segregated physical education classes within the Newfoundland and Labrador curriculum at the junior high level.

The setting for this project is a grade seven to twelve school with approximately 110 students and class sizes of approximately eighteen. This is an average size school in its school district. As is the case with other areas of Newfoundland, students who attend this school are bused from many small isolated towns in the vicinity. For this reason, after school extra-curricular physical activities become difficult for many students. Since the student body represents a conglomerate of small towns, and the outmigration of many out port Newfoundland families, organized sport such as minor hockey or soccer is also becoming nearly impossible (Higgins, 2008). Minor hockey has functioned in the past but it is now near extinction. Since this phenomenon is becoming more and more familiar in Newfoundland and Labrador, the findings that develop as a result of this research may be beneficial to many other schools in the district, or throughout other areas of the province.

This study will provide information to better understand current students' perceptions of physical education, levels of interest / enjoyment, perceived

competence, perceived choice, and felt pressure / tension. Also students' ideas about enjoyment in physical education will be explored. The impact of gender on students' perceptions and enjoyment of physical education classes will be evaluated. Perhaps being in physical education classes separate from the opposite sex will lower inhibitions and allow a higher percentage of students to actively participate more fully and to further enjoy the physical education experience.

RESEARCH METHODS

The current study is an exploratory, descriptive investigation designed to analyze the enjoyment levels of junior high physical education students after experiencing a series of gender segregated physical education classes. This study is also classified as applied research since it is possible that the findings may contribute to a future change in the physical education system. Thus, this study is aimed at examining an alternative intermediate physical education format compared what is presently in place in the vast majority of schools in Newfoundland and Labrador.

Theoretical Framework

The foundation of this study is based on the sociological theory of symbolic interactionism. From this perspective, people take the influence of others into account as they act (Stryker & Vryan, 2003). This theory suggests that interaction is symbolic of the reason why individuals act in a certain way. Individuals have the ability to perceive and manipulate symbols internally. They can think about themselves, and in doing so, create an action based on social interaction. Consequently, in order to comprehend human behaviours, the symbolic interactionism perspective attempts to explain the subjective

experiences of persons studied and incorporate those experiences into accounts for their behaviour (Stryker & Vryan, 2003).

Motivation has been identified as being of primary importance to a student deciding to participate in physical education, and a student remaining active in physical education (Gibbons, Humbert, & Temple, 2010). This study utilized the self-determination approach to motivation (Deci & Ryan, 1985; Deci & Ryan, 2000). The self-determination theory (SDT) suggests a three-part model to define how motivation progresses, and its effect on an individual's behaviour. It proposes that motivation is influenced by an individual's need for autonomy (a sense of choice), competence (a sense of ability), and relatedness (a sense of practicality). This theory proposes that individuals who perceive they have a sense of choice and ability, and the action in question is practical, then the individual will be intrinsically motivated to engage in the action (Gibbons, Humbert, & Temple, 2010). Deci and Ryan (1985) suggest that different types of motivation fall on a continuum from amotivation, through extrinsic motivation, to intrinsic motivation. Amotivation refers to a complete lack of interest toward the action. In other words, participation has little meaning to the individual. Extrinsic motivation occurs when an individual participates in activity because they value an associated outcome more than the activity itself. Finally, intrinsic

motivation refers to engagement in activities for their own sake, with feelings of enjoyment directly from participation (Gibbons, Humbert, & Temple, 2010).

Research Paradigm

This study consisted of participatory action research (PAR). PAR is a form of experimental research which focuses on the effects of the researcher's direct actions of practice within a participatory group, with the goal of improving the performance quality of the group (Kemmis & McTaggart, 2000). In the case of this study, the direct action was dividing the students in each class by gender. The ultimate goal was to increase the level of enjoyment by all students during physical education classes.

Susman (1983) describes PAR as a cyclic process with five steps: diagnosing, action planning, taking action, evaluating, and specifying learning. Diagnosing refers to identifying or defining a problem. With respect to this research study, the immediate problem is the declining participation rates during physical education that exist at the junior high level (Craig & Cameron, 2004). However, the increasing obesity and physical inactivity rates evident across Canada, particularly Newfoundland and Labrador, is the overlying reason for this study (Craig & Cameron, 2004). Action planning and taking action refer to considering all alternative plans of action, and then choosing the most

appropriate (Susman, 1983). Understanding that alternatives exist, such as differentiated instruction, curriculum changes, and altering class sizes, gender segregation was the chosen plan of action. Evaluating refers to studying the consequences of the chosen action (Susman, 1983). This research study utilized three methods of data collection in which to identify the impact of the gender segregated physical education classes upon the students, including the Intrinsic Motivation Inventory (IMI), focus group sessions, and field notes. Finally, specifying learning refers to identifying general findings which coincide with the results of this study (Susman, 1983).

Description of the Research Setting

This research study focused on junior high school students (grades seven, eight, and nine) at one school in Central Newfoundland. The school serves five surrounding isolated communities with a total of 120 students from grades seven to grade twelve. The school is equipped with many physical education resources. It has a very large gymnasium equipped with three badminton courts, volleyball, basketball, and floor hockey courts, and six basketball nets. The equipment room is stocked with materials to service the physical education program. There is also a moderately furnished fitness and strength training room located in the building.

Research Participants – Students

As previously mentioned, the participants consisted of grade seven, eight, and nine students at a selected school in Central Newfoundland. The grade seven class consisted of twelve boys and ten girls; the grade eights had fifteen boys and ten girls; and the grade nines had eleven boys and eight girls. In total then, there were sixty six students available to participate in this project.

Given my involvement at the school for the past two years I am able to comment on the students, the school, and the physical education environment. The decision to undertake this participatory action research study was based on the declining participation rates of junior high students in physical education classes. Generally, the grade seven students are not overly enthusiastic about physical activity and physical education. Although, they do not present any behavioural issues and are generally mild mannered, they constantly need encouragement to become involved in physical education classes. Some boys in grade seven have an interest in sports, hockey in particular, but do not like to stray outside of their comfort zone when it comes to physical activity. In contrast, the grade eight students are a very eager bunch. The majority of them, both boys and girls, are more than willing to participate in any physical activity offered to them. Many students have tried out for junior high sports such as volleyball,

basketball, table tennis, and badminton. Students in grade nine have very similar characteristics to those in grade eight; usually eager to learn new activities and always try their best. The junior high sports teams are predominately composed of grade nine students. In previous attempts to increase physical activity, very few students from grades seven, eight, and nine take advantage of other opportunities to be active in and around the school. An intramural program consisting of non-traditional sports, such as archery, Omnikin Ball activities, and cooperative games was offered to all junior high students, however due to limited enrollment, the program failed. Also, a curling club was proposed to students, which also failed due to non-interest.

Procedures

Prior to initiating this project, ethics approval was given by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University of Newfoundland, as well as by the school board in which this project took place. Students who participated in the study did so by means of passive consent. Parents and guardians were informed that the project would be taking place during regularly scheduled physical education classes via three forms of media; an automated telephone call from the principal, the school monthly newsletter, as well as a letter sent home only to parents and/or guardians of

junior high students. If for any reason a parent or guardian did not want their child included in the study, he/she had to contact the researcher.

This mixed-methods project aimed to determine if a gender segregated physical education environment is more conducive to increased participation rates of grades seven, eight, and nine boys and girls, than the current gender mixed environment. Across all three grades, groups based on gender and grade level, participated in a series of five physical education classes, each based on a separate theme from the Newfoundland and Labrador Department of Education Curriculum. Each of these themes relate to different aspects of physical education (Newfoundland and Labrador Department of Education, 2004). During each physical education class, field notes and observations were recorded, focusing on student behavior and enjoyment levels. After each of the five of the classes, students independently completed the Intrinsic Motivation Inventory (IMI) (Deci & Ryan, 1985). Copies of the IMI were distributed to each student, along with a writing utensil. When finished, students placed the completed IMI's in an envelope depending on their gender. After the completion of all gender segregated physical education classes, focus group sessions were held to discuss various aspects of physical education. These sessions took place during the lunch hour or after school, depending on the preference of each

specific group. Focus group sessions were audiotaped and later transcribed by the researcher.

This research study utilized activities from five out of the six themes from the Newfoundland and Labrador Department of Education Curriculum; outdoor activities were not included (Newfoundland and Labrador Department of Education, 2004). Specifically, students participated in a badminton tournament to satisfy the *court and field activities* theme, an instructional Tae Bo video covered the *rhythmic activities* theme, an extensive list of team building cooperative activities suited the *cooperative games* theme, circuit training for *fitness activities,* and stations of bowling, bean bag tic-tac-toe, and table tennis were utilized for *alternative activities*. Given that I held the dual role of physical education instructor and researcher for each physical education class, the classes were designed to minimize teacher involvement. Prior to dividing each class by gender, the class structure, organization, and expectations were highlighted for the students. Students were encouraged to ask questions during this time so both gender groups received consistent instructions. Once students separated into their gender segregated groups as little time as possible was spent giving instructions. However, if one group asked a question specific to the tasks at hand, questions and answers were addressed with both groups. The intent here

was to ensure that both groups received similar/consistent information during the class itself.

The participant observation data collected consisted of observational assessment of the enjoyment levels, attitudes, behaviours, and other characteristics of the students throughout the physical education classes. Field notes of student interactions and enjoyment levels as the physical education classes were in action were compiled. Detailed notes were taken at the end of each class relating to various participant behaviours which were expanded upon at a later time.

The IMI (Deci & Ryan, 1985) is a multidimensional measurement device intended to assess participants' subjective experience related to a selected activity. The instrument assesses participants' interest/enjoyment, perceived competence, effort, value/usefulness, felt pressure and tension, and perceived choice while performing a given activity, thus yielding six subscale scores. It enables the researcher to gain insight as to students' perceptions of the newly tested class structure – gender segregation. After each session of gender segregated physical activity, each participant remained in the gymnasium and was provided a copy of the IMI. Participants were given instructions to remain as quiet as possible and to respond to each statement as accurately as possible. Once

completed, students were asked to place the inventory in a specific envelope depending on their gender, prior to entering the changing rooms and getting prepared for their next class.

After all five sessions of gender segregated physical education were completed, students from each grade level who had the ability to stay at the school during lunch hour, or after school, became part of a focus group. This was not necessarily on the day of the last session of gender segregated physical activity. The focus group sessions provided an opportunity to explore student perceptions of physical education. Initially, participants communicated their willingness to be involved in a focus group. Given the limited number of students in each grade level, focus groups were formed by means of convenience sampling. Focus groups were gender segregated and divided by grade level. During the focus group sessions, open-ended questions were asked in an interview type manner to encourage students to provide more personal and descriptive information in responses. Sessions were audio taped. As it was noted that focus groups may increase anxiety, these sessions were held in a relaxing, comfortable manner to encourage participants to disclose ideas and feelings regarding physical education and increase participant comfort. Following

completion of all sessions, the recorded audio was transcribed and content analyzed for emerging patterns and/or themes.

Data Analysis

Intrinsic Motivation Inventory

The IMI (Deci & Ryan, 1985) has four sub-categories: interest / enjoyment, perceived competence, perceived choice, and pressure / tension. The mean score for each sub-category was calculated for each group. These overall results were then entered into a two-way analysis of variance to determine if there were any significant differences between grades, genders, or groups (Tsigilis & Theodosiou, 2003).

Focus Groups

Focus Group discussions were aimed at developing an understanding of the student current perceptions of physical education, their ideas on how to improve physical education, as well as their perceptions on how gender segregation influenced their physical education experiences. Once all sessions were completed, the data was reviewed in search of any common themes or ideas across grade levels and genders. These themes were then cross validated through an independent reviewer to ensure that content and interpretations were appropriately represented.

Field Notes

During each of the gender segregated physical education classes, field notes were compiled based on the attitudes, behaviours, and perceived enjoyment levels of students. These field notes were then analyzed in search of any common themes or ideas across grade levels and genders.

RESULTS

The central purpose of this study was to attempt to determine if enjoyment levels of students in junior high school physical education could be increased through the use of gender segregated classes. Data was collected through three methods to assess the level of interest / enjoyment, perceived competence, perceived choice, levels of pressure / tension of students during gender segregated physical education classes, as well as other dimensions of physical education. Grade seven, eight, and nine students took part in a series of five gender segregated physical education classes. After each class, each participant completed the Intrinsic Motivation Inventory (Deci & Ryan, 1985). Upon completion of all five classes, gender-segregated focus groups with a minimum of four students who were in the same grade were formed to discuss students' perceptions of physical education. The nature of the classes was such that the physical education teacher could deliver instruction to the students at the beginning of class, and students could progress through with little teacher intervention. This allowed the physical education teacher, also the primary researcher, to take field notes based on the aforementioned components of the IMI. The results are presented based on the following research questions; 1) What are the junior high school students' current perceptions of physical

education?, 2) What are the junior high school students' ideas surrounding enjoyment during physical education?, and 3) How does gender segregation impact student perceptions of physical education, in terms of level of interest / enjoyment, perceived competence, perceived choice, and level of pressure / tension? Since the emphasis of the study is on gender segregated physical education classes, the majority of the data collected will aim to answer the third research question.

Intrinsic Motivation Inventory (IMI) Data

The results of the IMI are divided into four components which relate to the overall experience of the gender segregated physical education classes: level of interest / enjoyment, perceived competence, perceived choice, and level of pressure / tension (Deci & Ryan, 1985). Students were given statements that reflect the previously outlined components and asked to determine how true the statements were for their experiences. For example, one statement read "while I was participating I was thinking about how much I enjoyed it". Students were given a scale from 1, meaning that they did not feel that the statement was true for them at all, to 7, meaning that they felt it was very true. After analysis, the results of the IMI allow for comparisons between genders, grades, as well as

interaction between grade and gender for each of these sub-categories; the results of these comparisons follow (Tsigilis & Theodosiou, 2003).

Interest / Enjoyment

The overall interest / enjoyment mean score for the grades seven, eight, and nine boys was 4.85 out of a possibly score of 7.00. The overall mean value for the girls was 6.12, statistically greater than the boys' score; $F_{(1, 24)} = 46.05$, $p < 0.01$.

A main effect of grade level was found for interest / enjoyment, $F_{(2, 24)} = 12.8$, $p < 0.01$ (see Table 2). The grade sevens scored the lowest with an overall mean of 4.83 out of a possible 7.0. Next, the grade nines had an overall mean score of 5.71. And, the grade eights scored the highest overall mean, with a 5.92. Based on the post hoc statistical analysis, the grade eights and nines scored significantly higher than the grade sevens, but were not statistically different from one another.

No significant differences were seen for interest / enjoyment between gender and grade level.

Perceived Competence

The girls (5.69) also scored higher in perceived competence than the boys (5.19) $F_{(1, 24)} = 10.11$, $p < 0.01$.

A main effect grade was found for perceived competence, $F_{(2, 24)} = 6.68$, $p < 0.01$. The grade eights once again scored the highest with an overall mean of 5.96. The grade nines came next with an overall mean of 5.52. And, the grade sevens scored the lowest with an overall mean of 5.05. Post hoc statistical analysis revealed that the grade eights ($p<0.01$) and nines ($p<0.05$) scored significantly higher than the grade sevens, but were not statistically different from one another.

An interaction between gender and grade level was found for perceived competence; $F_{(2, 24)} = 5.58$, $p < 0.01$ (see Table 2). Post hoc results suggested here that the grade nine girls scored significantly higher than the grade nine boys, as well as both the grade seven boys and girls. The grade eight girls also scored significantly higher than the grade nine boys, who had the lowest mean score.

Perceived Choice

In the area of perceived choice, once again the girls' (5.20) scored considerably higher than the boys' (4.76). $F_{(1, 24)} = 30.81$, $p < 0.01$.

A main effect grade was found for perceived choice, $F_{(2, 24)} = 49.7$, $p < 0.01$. The grade nines (5.43) scored the highest, the grade eights (5.28) were next in line followed by the grade sevens (4.36) (See Table 2). Similar to the data from interest/enjoyment and perceived competence, post hoc analysis, demonstrated

the grade eights and nines scored significantly higher than the grade sevens, but were not statistically different from one another ($p<0.01$).

An interaction between gender and grade level was also evident for perceived choice; $F_{(2, 24)} = 18.37$, $p < 0.01$. Post hoc results here suggested that the grade nine girls, with the highest mean, scored significantly higher than all other groups. The grade eight boys, with the second highest mean, scored significantly higher than the grade nine boys, and both grade seven genders. Furthermore, the grade eight girls scored significantly higher than both grade seven groups.

Pressure / Tension

Statistical differences were found for the pressure / tension sub-category of the IMI, the overall mean score for the boys was 3.45 and for the girls it was 2.17 $F_{(1, 24)} = 102.04$, $p < 0.01$.

A main effect of grade was found for the sub-component pressure / tension, $F_{(2, 24)} = 13.83$, $p < 0.01$. The grade nines scored the lowest with as overall mean of 2.5. The grade sevens scored the highest with an overall mean score of 3.27. And, the grade eights landed in the middle with an overall mean score of 2.66. Based on the post hoc statistical analysis, the grade eights and nines scored significantly lower than the grade sevens ($p<0.01$), but were not statistically different from one another.

Finally, an interaction between gender and grade level also existed for pressure / tension $F_{(2, 24)} = 5.58$, $p < 0.01$ (see Table 2). Post hoc results here suggest that the grade nine girls, who had the lowest mean, were significantly different from the grade nine boys, as well as the grade eight and seven boys. The grade seven and eight girls also scored significantly lower than all three groups of boys. In addition, the grade eight and nine boys scored significantly lower than the grade seven boys, who had the highest mean.

Table 2: Mean IMI Scores.

		Grade 7	Grade 8	Grade 9
Interest / Enjoyment	Girls	4.26	5.50	4.80
	Boys	5.40	6.34	6.62
Perceived Competence	Girls	5.10	5.54	4.92
	Boys	5.00	5.96	6.12
Perceived Choice	Girls	4.18	5.32	4.78
	Boys	4.54	5.24	6.08
Pressure / Tension	Girls	4.14	3.02	3.18
	Boys	2.40	2.30	1.82

Focus Group Data

Current Perceptions of Physical Education

In attempt to develop a picture of students' current perceptions of physical education, two basic questions were posed during the focus groups: First "what do you enjoy about physical education?" and second, "what do you dislike about physical education?" Responses from each gender are presented separately in order to develop a gender-specific view of current physical education experiences. It is important to develop an appreciation for the fundamental views on physical education for all students prior to attempting to understand the impact of gender segregated physical education classes. Themes that resound across grades are highlighted with each section.

Boys

Boys from grades seven to nine have an appreciation for the fact that physical education involves kinesthetic learning, whereas other subjects that they are required to complete in their junior high schooling does not. There are some very specific elements of physical education that allows it to be easily differentiated from other school subjects, such as mathematics or language arts. During the focus group interviews, boys from each grade were very quick to point out that they enjoy physical education since it is physical activity based:

Cody B, Grade 7: "You actually get to get up and move".

Noah, Grade 8: "It's the only class where we get to exercise".

Matt, Grade 9: "It's active".

In the educational environment, physical education is often viewed as a "soft", or "light", course in terms of academics. There is not usually much work that needs to be written, very few notes taken, and seldom are there written tests or assignments. Evaluation is based on observation of each students progression in each of the three domains of learning; psychomotor, cognitive, and affective, referred to in the Newfoundland and Labrador Department of Education curriculum as "In Movement", "About Movement", and "Through Movement", respectively (Newfoundland and Labrador Department of Education, 2004). For this reason, physical education is even more appealing for the boys.

Kyle, Grade 7: "You don't have to do work".

Cruz, Grade 8: "It's a break".

Sheldon, Grade 9: "You don't have to write stuff down".

When specifically asked if there is anything about physical education that they disliked, the boys had only positive feelings toward the subject. No comments surrounding negative feelings toward physical education surfaced.

Kyle, Grade 7: "[Nothing] really".

Jordan, Grade 8: "I don't really know [of anything]".

Brandon, Grade 9: "Not really. I always look forward to physical education classes".

Girls

Similar to boys, the majority of girls from grades seven to nine also hold a positive view towards physical education because it involves kinesthetic learning. It became evident through the focus groups that girls enjoy this active component to physical education.

Jenna, Grade 7: "We get to run around".

Brianna, Grade 8: "It's a chance to run around".

Shania, Grade 9: "It's a chance to be [physically] active if you do not have time at home".

Furthermore, girls also tend to value the notion that physical education is seen as a "soft" or "light" academic subject. Other subjects that students are required to complete in junior high school entail writing assignments, written testing, and other forms of formal evaluation, whereas the evaluation in physical education is mainly informal / observational.

Katie, Grade 7: "Not having to write things down".

Kyla, Grade 8: "It's a break from doing work".

Courtney, Grade 9: "A chance to get out of class".

In contrast to the boys, the girls were very outspoken regarding some factors in physical education classes that they did not enjoy. These were based around negative peer interactions, mainly with boys. However, these issues were only identified by the grade eight and nine girls; grade seven girls did not seem to have any issues with peer influence, but they did point out minor concerns with the curriculum being delivered.

Kaitlin, Grade 8: "People yell at you for doing something wrong".

Brianna, Grade 8: "When you're trying to do your best and [the boys] make fun of you".

Emily, Grade 9: "How the boys are so competitive".

Jasmine, Grade 9: "The guys are always fooling around".

Miranda, Grade 7: "Sometimes I do not like to do the exercises".

Students' Ideas about Enjoyment in Physical Education

In trying to determine what might lead to increased enjoyment of physical education classes, the researcher asked "what kinds of changes could be made to physical education to make it better?" as well as "are you ever uncomfortable during physical education?".

Boys

In response, to the first question, the boys' main responses centered around the curricular content course organization. Particularly, the boys would like to see the activities covered in class move from a multidimensional model in which a wide range of activities, including cooperative games, court games, alternative activities, fitness, movement education, and rhythmic activities, into a more sport oriented program. Also, the boys saw time allocation as an area in which the current physical education program could be improved upon.

Cody B, Grade 7: "Play different sports instead of the playing the same ones".

Riley, Grade 8: "More sports instead of games".

Shane, Grade 9: "All sports instead of gymnastics and stuff".

Tristan, Grade 7: "More time for more activities".

Noah, Grade 8: "More classes".

Matt, Grade 9: "Make the classes longer".

When asked if they are ever uncomfortable during physical education, a theme emerged. The boys responses suggested a general acceptance of the nature of physical education activities. In other words, they have a general positive

attitude toward physical education, thus they have a tendency to accept situations that have the potential to be uncomfortable.

Daniel, Grade 7: "No, I just do [the activities] anyway".

Jordan, Grade 8: "Nope".

Matt, Grade 9: "No, not really. It's no big deal".

Girls

When asked about possible changes that could improve the physical education experience, the girls' responses differed slightly from the boys'. Whereas the boys were concerned with curricular content and time allocation, the grade eight and nine girls' priority was increasing participation rates of students during physical education classes. Although, the grade seven girls responses were more similar to the boys; dealing with infrastructure.

Kaitlin, Grade 8: "It would be nice if everyone participated".

Courtney, Grade 9: "Find a way to get [all the girls] to participate".

Katie, Grade 7: "Make [physical education classes] longer".

Jenna, Grade 7: "Don't play hockey".

The grade eight and nine girls voiced their concerns regarding negative peer interaction when asked if they ever felt uncomfortable during physical education classes. The grade seven girls' responses to the same question were

primarily based around personal abilities, or to the effect of never being uncomfortable.

> *Kaitlin, Grade 8: "[Not] as long as nobody makes fun of you if you do something wrong".*
>
> *Keisha B, Grade 9: "With the boys I am, but not with the girls. [The boys] are always staring at you".*
>
> *Miranda, Grade 7: "Like gymnastics and stuff yeah … because I can't do it".*
>
> *Katie & Jenna, Grade 7: "Not really".*

How Gender Segregation Impacts Student Perceptions and Enjoyment in Physical Education

During the focus groups, a series of questions were asked to highlight the impacts of gender segregation on student perceptions and enjoyment during physical education classes: 1) "how do you feel when [the opposite gender] are present, or watching you, during physical education classes?", 2) "how do you feel when there are only [same gender] present during physical education classes", 3) "was there anything about gender segregated physical education that you really enjoyed?", and 4) "was there anything about gender segregated

physical education that you really disliked?" The following section summarizes the students' responses based on emerging themes.

Boys

The presence of girls during physical education classes is a non-issue for boys from grades seven, eight, and nine. When asked if there was anything about gender segregated physical education that they really enjoyed, the boys' responses did not present a common theme. The responses ranged from increased participation rates, to increased competition level, and others stated enjoying the experience but could not identify any real reason for it. When asked if there was anything about gender segregated physical education that they really disliked, a notion of general enjoyment was presented, but again no real, definitive reasons were given as to why. Overall, the boys did not seem to care if their physical education classes are gender segregated or mixed gendered; they were indifferent.

Cole, Grade 7: "It doesn't really bother me".

Kyle, Grade 8: "[It's not a big deal], we're in the classroom all the time together anyway".

Shane, Grade 9: "I don't think it makes any difference".

Girls

When asked how they felt when boys were present, or watching them, during physical education classes, the grade seven girls' responses differed greatly from the grade eight and nine girls'. The grade eight and nine girls had issues with the level of expectations placed upon them by the boys. The grade seven girls seemed to prefer gender mixed physical education as opposed to gender segregated.

> *Kaitlin, Grade 8: "It's the boys who get mad at you sometimes when you do something wrong".*
>
> *Jasmine, Grade 9: "[The boys] expect you to do everything right all the time".*
>
> *Jenna, Grade 7: "It's too quiet when the boys are not there".*

The grade eight and nine girls made it clear through the focus groups that they feel nervous while participating in physical education when boys are present.

> *Cheryl, Grade 8: "I'm nervous all the time because I know if I make a mistake, [the boys] are going to yell at me".*

Cecilia, Grade 9: "Very nervous. When it was just the girls we could be ourselves, we didn't have to worry about [the boys] watching us and making fun of us".

Miranda, Grade 7: "I don't care [if boys are present, or watching me]".

The grade eight and nine girls felt more comfortable, more relaxed, and had more fun when there were only girls present for physical education. However, the grade seven girls' feelings were in sharp contrast.

Cheryl, Grade 8: "Makes me feel more confident and relaxed".

Shania, Grade 9: "I found it a lot better; there was better cooperation and everything".

Emily, Grade 9: "I felt more comfortable".

Katie, Grade 7: "[It is] kind of boring [when there are only girls]".

Jenna, Grade 7: "I didn't like it because it was too quiet".

The grade seven girls agreed with the grade eight and nine girls when asked if there was anything about gender segregated physical education that they really enjoyed; all three grades liked the fact that the level of cooperation increased and competition decreased.

Miranda, Grade 7: "With the girls, they're not as competitive. With the boys, you have to do everything their way".

Kaitlin, Grade 8: "Girls just relate easier with girls than with guys".

Cecilia, Grade 9: "It was more like you were just hanging out with friends. It was easier".

When asked if there was anything about gender segregated physical education that they really disliked, the grade eight and nine girls merely voiced concerns relating to the infrastructure of the classes; mainly with class size. Coming from a small school already, once the junior high classes were split based on gender, class size was down to approximately eight people. This presents a problem when attempting certain activities that are commonplace in physical education, such as volleyball and basketball. For other activities, such as gymnastics, wrestling, or badminton, small class size is not an infrastructural threat. The grade seven girls however, had different views on gender segregated physical education than those of the grade eight and nine girls.

Kaitlin, Grade 8: "Probably that there wasn't very many of us".

Jasmine, Grade 9: "There really wasn't enough girls".

Katie, Grade 7: "All of it. I didn't like it at all".

Field Notes Data

Grade Seven

One underlying concept that came as a result of the field notes taken during grade seven classes was that the grade sevens lacked a certain maturity level that the older participants appeared to possess. This presented issues pertaining to the process of gathering information through research.

> *Grade 7, Class 2: Both boys and girls having issues with staying on task. More teacher direction and guidance was needed.*
>
> *Grade 7, Class 3: Both boys and girls disrespecting the process of research by attempting to peek around gymnasium divider.*
>
> *Grade 7, Class 4: Both boys and girls are again disrespecting the research process by attempting to initiate conversation over the divider with the opposite gender.*

Another theme that was evident through the research field notes was a general lack of effort or enthusiasm shown by both the grade seven boys and girls.

> *Grade 7, Class 1: Boy leader mainly just watching for completion of tasks; not really getting involved.*
>
> *Grade 7, Class 3: Girls seem very uninterested; boys a little.*

Grade 7, Class 4: Nearing the midpoint of class, the girls begin to seem uninterested. The boys never really apply themselves.

No significant differences between genders were evident.

Grade Eight

When looking at the field notes for the grade eight gender segregated physical education classes, the theme of enjoyment rises to the surface for both boys and girls.

Grade 8, Class 1: Girls seem to be having fun while completing tasks efficiently. Although some mild behaviour issues arose, boys seemed to be having fun while interacting with one another.

Grade 8, Class 4: Both boys and girls seem to be enjoying the activities.

Grade 8, Class 5: Both boys and girls begin class very well; great effort and having fun.

The boys in grade eight had a tendency to become fairly competitive while participating in gender segregated physical education classes. This sometimes led to unwanted behaviour issues. Teacher intervention was often needed.

Grade 8, Class 1: Some mild behavioural issues arose while the teacher was not physically present.

Grade 8, Class 2: Boys have a tendency to take tasks seriously and become competitive.

Grade 8, Class 3: Aggressive tendencies shown by the boys.

The girls however took part the classes in a very cooperative manner; seldom were there competitive tendencies shown. Very little teacher intervention was needed.

Grade 8, Class 1: Girls working very well together.

Grade 8, Class 2: Girls very calm and uncompetitive.

Grade 8, Class 3: Very good sportsmanship exhibited by the girls.

The grade eight field notes show evidence that the boys often have a tendency to sway off task, while the girls are very task-oriented and driven.

Grade 8, Class 2: Boys tend to sway from the rules of the games.

Grade 8, Class 4: After a short while, boys begin to sway off task.

Grade 8, Class 5: Boys have a tendency to goof off, but yet get back on track after a short period of time.

Grade 8, Class 1: Girls finish up tasks way ahead of time. They continue to play a cooperative game for the remainder of the class.

Grade 8, Class 4: Girls show much more focus on tasks than boys.

Grade 8, Class 5: Even girls who are not having as much success as others are not getting discouraged; simply taking short breaks and rejoining the activities.

Grade Nine

As was seen with the grade eights, both the grade nine boys and girls seemed to thoroughly enjoy the gender segregated physical education classes.

Grade 9, Class 1: Both groups seem to be enjoying the class.

Grade 9, Class 2: Although there were issues with the organization of the class, both boys and girls did seem to enjoy the physical education period.

Grade 9, Class 3: Both boys and girls very anxious to begin class.

There is evidence of the grade nine boys not taking the classes as seriously as the girls throughout the grade nine field notes. This had a tendency to manifest itself into behavioural issues for the boys.

Grade 9, Class 1: Girls seemed to figure out logical ways of completing tasks much quicker than boys.

Grade 9, Class 2: Mild behavioural issues arose with boys, possibly due to length of time spent at each station was too long.

Grade 9, Class 5: Boys seem to be having fun, but possibly due to off-task behaviours. Girls actually enjoying activities.

DISCUSSION

The general inspiration for completing this project was to determine if the level of enjoyment in physical education classes by junior high students could possibly be increased through gender segregation. Other factors, such as perceived competence, perceived choice, and level of pressure / tension were assessed, since they contribute to the overall enjoyment of physical education classes (Deci et al., 1994). Symbolic interactionist theory suggests that our actions are a direct result of our interactions with others. Therefore, by changing the people with whom we interact, we can possibly alter our actions (Stryker & Vyran, 2003). Using an exploratory, descriptive investigation, the enjoyment levels of intermediate physical education students were examined after experiencing a series of gender segregated physical education classes, an alternative setting to the vast majority of schools in Newfoundland and Labrador and the rest of Canada. This study might also be classified as applied research since the findings may contribute to a change in the current physical education system. To fulfill this possibility, recommendations for modifications to the physical education environment are included at the end of this research.

After experiencing five gender segregated physical education classes, students in each of grades seven, eight, and nine, attended gender segregated

focus groups with four to seven participants. The teacher/researcher asked questions to probe participants to share their views relating to three research questions: 1) What are the junior high school students' current perceptions of physical education?, 2) What are the junior high school students' ideas surrounding enjoyment during physical education?, and 3) How does gender segregation impact student perceptions of physical education? Further, the IMI questions were arranged to directly assess the level of interest / enjoyment, perceived competence, perceived choice, and level of pressure / tension felt by participants while participating in gender segregated physical education. The field notes provided an overall perspective of participants during the gender segregated physical education classes including information about enjoyment levels of participants, behavioural issues, participant attitudes toward the research process, and other elements important to the study.

From the focus group sessions, current student perceptions of physical education were observed. All students, both boys and girls, expressed a general enjoyment of physical education, primarily due to the fact that physical education involves different elements than the other school classes students are required to complete. Physical education class provides an opportunity for students to be physically active; a chance for them to get up and move. In many

ways, it is a break from the everyday stresses of other academic classes. For some students who are bused to school from neighboring communities, physical education classes are their only chance for organized recreation. Many of these students do not have the support needed from parents and others to provide transportation to enable them to participate in extra-curricular activities including sports teams. Unfortunately, the population of bused students does not warrant an extra-curricular bus run. Therefore, it is not hard to see why physical education is rather positively viewed by junior high students.

Additionally, physical education classes were noted as requiring less structured academic evaluation. Other courses taught in school, including mathematics, science, and social studies, involve tests, assignments, projects, journals, and other forms of written evaluation. In many cases, physical education programs have very few written assignments. That is not to say that there is no evaluation in physical education, rather evaluations are generally of an observational nature. This evaluation structure is another factor contributing to the enjoyment of physical education.

Many differences were noted between the boys' and girls' current perceptions of physical education. The boys were not able to verbalize anything they disliked about physical education, whereas the grade eight and nine girls

were very quick to identify that they were unhappy with the way boys treat them during physical education classes. The grade eight and nine girls stated that if any of the girls make a mistake, or do not perform up to the boys' standards, the boys are quick to point it out and ridicule them for their errors. The girls state that this ridicule is especially evident when participating in team activities such as volleyball, orienteering, or team-building, but also true for individual activities such as aerobics, badminton, or archery. These activities cover the entire spectrum of physical education activities outlined by the current prescribed curriculum document (Newfoundland and Labrador Department of Education, 2004).

Another objective of the focus group sessions was to gain an understanding of students' ideas regarding how to make physical education more enjoyable. Since the boys had nothing negative to say about physical education, their only ideas were to increase the number of physical education classes and to increase the duration of physical education periods. Basically, according to the boys, the only way to make physical education better is to have more physical education. These comments were also voiced by most grade seven girls. In contrast however, the grade eight and nine girls were concerned with the girls participation rates during physical education classes. They were interested

in identifying ways to get all the girls in their class to participate. Their feelings appeared to stem from the negative social interactions involving the boys. The grade seven and eight girls commented that if their classes were gender segregated, both the participation rates and the enjoyment levels would be much higher. Evidence for these feelings was revealed through the questionnaires, focus groups, and field notes.

Being comfortable during a physical education class is imperative to student enjoyment (McHugh, 1995); a student is very unlikely to participate if he/she does not feel comfortable. This is another area where the boys differ from the girls, or at least the grade eight and nine girls. Across the grades examined, no boys stated being uncomfortable during physical education classes. The grade seven girls acknowledged being uncomfortable when they lacked confidence in their ability to perform successfully. But, the grade eight and nine girls' reasons for feeling uncomfortable reflected back once again to their perception of the boys in their classes. The grade seven and eight girls indicated they were sometimes uncomfortable since the boys had a tendency focus on them for one reason or another; possibly assessing their skill level and ridiculing the girls if it is not up to their standards. The grade eight and nine girls also sometimes expressed that the boys had a tendency to stare at them while they were

participating in physical education. These comments are supported by the body objectification theory, which suggests females typically perceive an observer's perspective as a primary view of their physical appearance (Fredrickson & Roberts, 1997). For these reasons, the girls claim to feel uncomfortable during physical education classes. This, in turn, can lead to performance anxiety, further failure, and increased reluctance to participate.

The final stage of the focus group sessions focused on assessing how gender segregation impacted student perceptions and enjoyment in physical education. For the boys, the gender arrangement of physical education classes did not appear to matter; the boys reported not caring if girls were present of not. However, the grade eight and nine girls suggested that they preferred their physical education classes to be gender segregated. Again, they saw the boys as a negative influence on the level of enjoyment they received from physical education. In sharp contrast to these feelings though, the grade seven girls felt that the gymnasium was too quiet without the boys; they expressed that the boys' presence added to their level of enjoyment.

One downfall of gender segregated physical education classes noted by the girls however, was class size. Since the research took place at a relatively small junior high school, once the physical education classes were divided by

gender, class sizes became very small. In some cases, the numbers were less than ten in each group. This made it difficult for the physical education program to include a wide variety of activities within each theme. Also, socialization might indeed suffer with such a small number of students, ultimately impacting the long-term social health of students (Tomme & Wendt, 1993). This fact is significant since the affective domain, which is one of the three domains of learning in physical education along with the psychomotor and cognitive, is largely characterized by social interactions (Newfoundland and Labrador Department of Education, 2004).

In summary, during the focus group sessions, the boys, along with the grade seven girls, expressed no major concerns with the current physical education program; the only suggestion to improve the physical education program was to increase both the number and duration of classes scheduled. These groups did not seem to care if their classes were gender segregated or gender mixed. The grade eight and nine girls however, expressed concern with the way they were treated by the boys in their classes, and for that reason, they would like to see a change in way that their physical education experiences are organized; namely gender segregation.

Results from the IMI (Deci & Ryan, 1985) suggest that girls experienced more interest / enjoyment from gender segregated physical education classes than the boys. These results were reinforced through the focus group sessions. Here, the grade eight and nine girls made their feelings about gender mixed physical education very clearly known; they were very unhappy with the way boys treated them. Therefore, gender segregated physical education was a welcomed experience for these groups.

When comparing the results of the boys' IMI data across grade level in terms of interest / enjoyment, the grade eights scored significantly higher than the grade sevens, and slightly higher than the grade nines. These results are not surprising as throughout the focus group sessions, the grade seven boys were adamant regarding their dislike for gender segregated physical education. Furthermore, they seemed bored and demonstrated disrespect for the research process as evident in the field notes. Although the grade eight and nine boys scored higher than the grade sevens on the IMI, data gained through the focus groups and field notes suggest that the level of enjoyment was not entirely different than an average, mixed gendered physical education class.

The girls' IMI data in the subcategory of interest / enjoyment showed that the grade nine girls scored significantly higher than the grade sevens, and

slightly higher than the grade eights. The grade eights' and nines' results represented an extremely high level of interest / enjoyment in the gender segregated physical education environment. And, although the grade seven girls' scores were significantly lower, their data still maintain and fairly high level of interest / enjoyment, comparable to the boys'.

In terms of perceived competence, the girls once again scored significantly higher than the boys. The grades seven, eight, and nine boys expressed competence in their abilities to participate in gender segregated physical education, however, the junior high girls reported even more competence. It is possible that if the girls were asked to reflect on their competence level during gender mixed physical education, their scores may be significantly lower. Throughout the focus group sessions, many of the grade eight and nine girls reported feeling very nervous when boys were present during physical education classes. This no doubt has a negative effect on the girls' perceived competence levels. The grade seven girls would rather their physical education classes included both genders, but their reasoning was centered on the fact that the boys bring more excitement. It is unlikely that the grade seven girls' competence levels are affected by the gender organization of their physical education classes. In the focus group sessions, the boys reported that their

physical education experiences remain relatively constant regardless of whether or not the girls were present. Therefore, their level of competence is also unlikely to change based on the gender segregation.

Across all three grades the boys' IMI results reflected a moderate level of perceived competence. This finding was consistent with the focus group information. The data suggests therefore, the level of perceived competence of boys while participating in gender segregated physical education activities remains constant throughout junior high school for the group of students examined.

When comparing the girls' IMI results for perceived competence, both the grade eights and nines scored significantly higher than the grade sevens. Once again, these results are not surprising considering the feelings expressed by the girls during the focus group sessions. The grade eight and nine girls commonly reported feeling nervous or uncomfortable giving their best efforts while the boys were present in fear of being verbally harassed. When in a physical education environment with members of their own gender however, they expressed feeling much more competent in their abilities. In the subcategory of perceived competence, the grade seven girls' IMI results were very similar to the boys in grades seven, eight, and nine.

Perceived choice was the third sub-category of the IMI (Deci & Ryan, 1985). Data from each grade and gender was not different here; however, it is likely that the research design may have impacted the validity of perceived choice. Perceived choice reflects the level to which the students feel it was their choice to participate. Since this study took place during regularly scheduled physical education classes, participation in the physical activities was not a choice at all. In order to receive a passing grade, at the least, students must actively participate during physical education classes. Therefore, students did not have a choice but to participate. However, students did have a choice in participating in the study. Students were under no obligation to complete the IMI, or to be a member of a focus group. However, active participation was required in the physical education classes.

There was an interaction for perceived choice between grade and gender which suggested the grade eight and nine boys' perceived greater choice than the grade seven boys, and with the grade eight boys higher than the grade nine boys. Considering the lack of maturity that the grade seven boys demonstrated during the research process, as evident in the field notes, the absence of perceived choice is not surprising. On occasion, boys from grade seven would question why they had to experience gender segregated physical education classes.

The grade nine girls had higher perceived choice levels than the grade eight girls, who in turn scored significantly higher than the grade seven girls. As previously indicated, it is likely that the research design had an effect on the validity of perceived choice. Based on the grades eight and nine girls' overwhelming support for gender segregated physical education, it is likely that if the granted the choice, they would choose such a physical education format compared to a mixed gendered one. The grade seven girls' attitude toward the research process however, mirrored that of the grade seven boys; disinterest.

With reference to the level of pressure / tension felt by students while participating in gender segregated physical education, girls scored significantly lower than boys. Although it was not tested, it is quite possible that if the girls were asked to reflect on their level of pressure / tension when participation in gender mixed physical education, it is likely that their scores would be much higher. However, since the majority, if not all, the pressure that the girls reported came from the boys' presence and actions, this pressure is alleviated with the introduction of gender segregated physical education. A number of boys reported during the focus groups that they particularly enjoyed the heightened degree of competition during gender segregated physical education classes. For these students, it is conceivable that this elevated competition could result in a

higher level of pressure / tension. Girls did not report any increases in competitiveness during the gender segregated classes which may also contribute to their lower levels of pressure / tension. The reason the boys reported a higher degree of competition when placed in gender segregated physical education activities may be explained via the Symbolic Interactionist theory (Stryker & Vryan, 2003). This suggests that social behaviours are a result of how an individual interprets the influence of others (Stryker & Vryan, 2003). The boys individually may have seen their like-gendered peers as being more aggressive and competitive and therefore may have adopted those characteristics themselves, resulting in an overall competitively heightened atmosphere.

The grade eights and nines scored significantly lower for pressure / tension than the grade sevens. Evidently, the older boys (grade eights and nines) felt less pressure while participating in gender segregated physical education than the younger grade sevens. This result relates to evidence seen and recorded in the field notes. Recall that the grade eight and nine boys displayed much more enthusiasm compared to the grade seven boys, who at times looked unsure of what their peers felt about the research setting, and therefore showed greater personal inhibitions.

All three grades of girls scored extremely low under the pressure / tension subcategory of the IMI; no significant differences were shown between grades. This is not surprising as the grade eight and nine girls expressed their positive feelings toward gender segregated physical education on every occasion; however the grade seven girls' results were unexpected. Nonetheless, the majority of the grade seven girls' negative comments during the focus groups referred to the enjoyment level of the research setting, not whether or not they felt pressured.

When comparing the results of the girls' IMI data across grade level in terms of interest / enjoyment, perceived competence, and perceived choice, the grade eights and nines scored consistently higher than the grade seven girls. The IMI data from all the boys' remained relatively stable and not as significantly different from one another. Looking at the results of the focus group sessions, as well as the field notes these data appear to coincide. Four out of six groups (grade seven, eight, and nine boys along with the grade seven girls) either had no preference in the gender organization of their physical education classes or would prefer to have their classes gender mixed. Only the grade eight and nine girls enjoyed gender segregated physical education more than gender mixed. This finding is backed by the results of the IMI across grade levels in terms of

interest / enjoyment, perceived competence, and perceived choice. In terms of the level of pressure / tension felt by students during gender segregated physical education, the same is true. The grade eights and nines scored the lowest, followed by the grade sevens. In this case, the lower scores reflect a more positive view of the physical education experiences.

When comparing each group individually, there was no significant difference reported on the basis of interest / enjoyment. In the other sub-categories however, the fact that the grade eight and nine girls had a more favourable view of gender segregated physical education becomes even more apparent. These two groups scored the highest in perceived competence and perceived choice, as well as the lowest in level of pressure / tension. The other four groups' scores constantly reflect a less favourable view.

The final method of data collection was field notes taken during the gender segregated physical education classes. Based on these notes, the grade sevens seemed to lack the maturity level necessary to properly complete the research process. Many of the boys and girls in grade seven were seen behaving in ways non-conducive to the process including peeking around the dividing surface, distracting classmates, and attempting to seek attention from classmates of the opposite gender on the other side of the dividing surface by shouting.

Likewise, the grade sevens did not seem to give their best efforts and were not enthused with the gender segregated physical education classes. This possibly resulted from the majority of the grade sevens feeling that the gender segregated environment was not an improvement to their regular physical education classes. Studies show that one of the largest stressors in an adolescent's life is attempting to fit into their peer group (McHugh, 1995). When an adolescent is confronted with such a stressor, his or her adaptation is through the process of coping, which involves cognitive and behavioral strategies directed at eliminating or reducing extraneous demand set upon them (Patterson & McCubbin, 1987). Therefore the grade sevens might have begun to display immature behaviours as a coping strategy. In other words, the students may have become complacent because of the gender segregation and decided to act out.

Very few differences were noted between the grade seven boys and girls. This is quite possibly related to the maturity level of the students. At this age, gender differences are not as predominant as they become by grade eight and nine, largely due to the onset of pubertal changes (Patterson & McCubbin, 1987).

Contrary to the field notes taken from the grade seven gender segregated physical education classes, all grade eight students seemed to thoroughly enjoy

the gender segregated physical education classes. This does not come as a surprise for the grade eight girls considering the results of the focus group sessions. However, these results are not reflected by the focus group sessions with the grade eight boys. In the focus group sessions, the grade eight boys stated that gender segregated physical education was not any different than gender mixed physical education. They reported no benefit or hindrance. Yet, it appeared that the boys were enjoying the gender segregated physical education to the fullest; they were laughing, smiling, and seemed to be having fun for the majority of class time. Alternatively however, it might simply be that the grade eight boys fully enjoy physical education regardless of the gender organization.

During the gender segregated physical education classes, the boys in grade eight had a tendency to become overly competitive and aggressive which sometimes led to unwanted behaviours that warranted teacher intervention. The grade eight girls displayed a very cooperative and friendly demeanor; quite the opposite of the boys. In gender mixed physical education classes, these two attitudes sometimes have a way of modifying one another; mainly, the boys become less aggressive. However, other times, this clash of attitudes and actions can present an issue if the two groups were combined for physical education. This issue was addressed in the grade eight girls' focus group sessions. The girls

reported that the boys "took things too seriously", which brought their level of enjoyment down much lower than that of gender segregated physical education. Also in the grade eight field notes, evidence showed that the boys often had a tendency to initiate actions incondusive to the learning environment, while the girls are very task-oriented and driven. This could further lead to the physical education experience not living up to its potential for the girls. However, in all likelihood, based on the focus group sessions, the grade eight and nine girls enjoyed the gender segregated physical education environment much more than the traditional gender mixed classes.

While the grade nine girls showed no evidence of unwanted behaviours, the grade nine boys seemed to take the gender segregated activities a little too lightly at times in terms of not following general physical education class rules, not always giving their best efforts, and sometimes distracting peers from giving theirs, and for this reason, the boys sometimes displayed behavioural issues. This reinforces the fact that girls have a positive influence on the behaviour of boys; however the reverse is not the case (Singleton, 2006). Once again, this was a similar case to the grade eight gender segregated physical education classes.

Summary

Current junior high students at the school where this research project took place, generally enjoy being a part of a physical education program. However, some groups of students identified ways to improve the physical education experience. Specifically, the girls in grade eight and nine were adamant regarding their negative treatment from peers of the opposite gender. They reported issues of verbal harassment which often led to severe anxiety.

Upon completing a five period series of gender segregated physical education classes, the boys, in company with the grade seven girls, did not report any great improvements to the physical education setting, nor did they express feelings of dissatisfaction. In contrast, the grade eight and nine girls communicated with great enthusiasm their approval of gender segregated physical education classes. These results can be explained using the Symbolic Interactionist theory. This theory suggests that people react in a certain way to a certain situation depending on their own perception of how they are viewed by others (Stryker & Vryan, 2003). During mixed gendered physical education classes, grade eight and nine girls perceived themselves in a negative way due to the influence of boys. However, when placed in a gender segregated physical

education setting, the grade eight and nine girls reported increased enjoyment and were much more willing to actively participate in the physical activities.

The chosen form of research method for this study was participatory action research (PAR), in which the effects of my direct actions of practice with a participatory group had a goal of improving the performance quality of that group (Kemmis & McTaggart, 2000). Reflecting back, this method of research suited the research very nicely. The majority of the data collected on current student views of physical education, as well as their views on gender segregated physical education classes came directly from the source; the students themselves. The PAR method allowed for the diagnosis of a problem; specifically, a decline in physical activity levels of junior high students. It allowed for planning and preparation of a desired plan of action, which was a block of five gender segregated physical education classes. Throughout the use of focus groups in gathering information from the students, the PAR method enabled me to see that alternatives to gender segregation – other ways of increasing participation rates during physical education classes – may exist to help solve the problem of a decline in physical activity among young teenagers. Additionally, the PAR research method allowed for the findings of this research study to be applied to a greater scale picture, such as the possibility of

introducing gender segregated physical activity in schools where educators see fit.

Limitations

The results of this study are promising and provide strong evidence for the positive impact of gender segregation at the grade eight and nine levels. However, future studies need to explore a longer duration of gender segregation, as five classes might not have been sufficient for students to truly determine how they feel about the environment. Also, studies at larger schools with larger classes of students would be beneficial to the concept of gender segregated physical education. Perhaps if class sizes were larger the level of enjoyment might be even further enhanced. An investigation of how students learn in a gender segregated physical education environment as opposed to a mixed gendered one would shed light on any further benefits for, or arguments against it. The gender of the physical education teacher along with the gender of the students in the class could also be explored. Finally, the way in which information is gathered from students to report their feelings could be altered; one-on-one interviews, peer evaluations, and open ended questionnaires are just a few suggestions, since these methods may elicit more and different types of information. Although the focus groups in this study consisted of small groups

of students, between five and eight, some students might have been hesitant to reveal all of their true feelings about physical education due to peer influences. One-on-one interviews with an external researcher, as opposed to the physical education teacher, would alleviate these pressures. Having students evaluate the level of enjoyment other students were experiencing might account for a more accurate assessment that from the viewpoint of the physical education teacher. Finally, the IMI that was used for this research project did not allow students to express their opinions as well as a survey that entails open ended questions would have.

The methodology of gathering information might also have been improved upon by having groups complete the IMI prior to initiating the series of gender segregated physical education classes. It would have been beneficial to have more concrete data on how students felt about physical education prior to the study.

This research study has been limited by the size of the school in which the research took place. There were only sixteen students in grade seven, sixteen in grade eight, and twenty in grade nine, for a total of fifty-two in the junior high school. Once grade levels were divided by gender, very small groups were left; averaging approximately nine students. For this reason, enjoyment levels of the

gender segregated physical education classes may not have been impacted by gender segregation, but other factors such as smaller class sizes, or removal of certain problem students may have significantly impacted student perceptions.

Class size may have also impacted the data collection process. With such low numbers, the ability to include some physical education activities which the students have a prior knowledge of, and have grown accustomed to, was not possible. Therefore, some activities presented throughout the research were newly introduced to the students. Specifically, Tae Bo was a new activity utilized since it allowed the teacher to focus on observing the students rather than instructing the class. Also, games used during the alternative activities class may not have been played since primary or elementary school, with some modifications, such as bowling and bean bag throwing.

It is also possible that the novel testing environment impacted the data collection. Although all physical education sessions were offered in student's regular physical education time slot, with their same classmates, with the same gymnasium environment, the novelty of gender segregation itself may have influenced student's perception. Future studies ideally would incorporate more gender segregated classes, over a longer time period, to determine if the class structure itself or the novelty impacted student's perception. Due to the scope of

this project it was not feasible to include more gender segregated classes over a longer time period, as the school district currently mandates non-segregated classes.

Overall, however this study revealed positive provisions of gender segregated physical education for grades eight and nine students. Boys in these grades did not express any disadvantages of having only classmates of the same gender in their physical education classes. The biggest advocates for gender segregated physical education were the grade eight and nine girls. They expressed, with great enthusiasm, their positive feelings toward gender segregated physical education classes. It is therefore conceivable that gender segregated physical education classes may be a successful tool to counteract the decline in physical activity often noted during the junior high years.

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APPENDICES

Appendix 1: Parent / Guardian Consent Form.

Study Purpose: The central purpose of this study is to attempt to determine if enjoyment levels of students in junior high school physical education can be increased through the use of gender segregated classes.

General Procedure & Time Commitment: Grades 7, 8, & 9 students will be split according to gender for five of their sixty minute physical education periods. Both the boys and girls will be completing the same activities at the same time, but will not be visible to the other group. The physical education teacher will give instruction, feedback, and any other educational direction needed both groups. However, while students are participating in the activities, the physical education teacher will take on the role of researcher, observing and taking notes on student behaviours. Upon completion of the five period block of gender segregated physical education, all students will complete a brief questionnaire relating to their level of enjoyment. Participants will be given the same questionnaire after another five period block of regular, co-gendered physical education.

Participants in the study will also provide information to the researcher via focus groups. Groups of four to six will be formed to meet and discuss

various elements of the gender segregated physical education classes, as well as co-gendered physical education, with the researcher. During this time, participants will be asked open ended questions and encouraged to share their thoughts and feelings. These sessions will be audio recorded and take a maximum of 20 minutes each.

Foreseeable Risks & Benefits: Risks that can be assumed during the testing procedures are equal to the risks associated with a regular physical education class. Students will be expected to become physically active in a variety of ways. They will need to interact with classmates of the same gender, as well the physical education teacher. Students may possibly benefit from participating solely of their own gender. Any anxiety possibly felt through physical interaction with peers of the opposite gender may be alleviated.

Confidentiality: Any information obtained by the researcher will be kept private and confidential. Questionnaires will be completed in the gymnasium so that participants can keep their responses private. Focus group data will be collected in a private environment, most likely a vacated classroom or school cafeteria. Any recorded information will be kept in a secured drawer, or on the person of the researcher himself. No other party will have access to any information. Students in the study will not be anonymous outside of the study;

all will come from junior high students. However, any information given by specific students will be confidential to the researcher; other students will not have access.

In the case that you would not wish for your child to be involved in this study, please contact the researcher, Mr. Marc Toms.

Marc Toms

Cape John Collegiate

(709) 675-2510

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University 's ethics policy. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Appendix 2: Intrinsic Motivation Inventory.

(Tsigilis & Theodosiou, 2003)

Participant Questionnaire

Circle Your Grade: 7 8 9 **Circle Your Gender: M F**

Task Evaluation:

For each of the following statements, please indicate how true it is for you, using the following scale:

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

1. While I was participating I was thinking about how much I enjoyed it. 1 2 3 4 5 6 7
2. I did not feel at all nervous about participating. 1 2 3 4 5 6 7
3. I felt that it was my choice to participate. 1 2 3 4 5 6 7
4. I think I am pretty good at participating with peers of my same gender. 1 2 3 4 5 6 7
5. I found the physical education class very interesting. 1 2 3 4 5 6 7
6. I felt tense while participating. 1 2 3 4 5 6 7
7. I think I did pretty well at this activity, compared to other students. 1 2 3 4 5 6 7
8. Participating in the physical education class was fun. 1 2 3 4 5 6 7
9. I felt relaxed while participating. 1 2 3 4 5 6 7
10. I enjoyed participating very much. 1 2 3 4 5 6 7

11. I didn't really have a choice about participating. 1 2 3 4 5 6 7

12. I am satisfied with my performance in this class. 1 2 3 4 5 6 7

13. I was anxious while participating. 1 2 3 4 5 6 7

14. I thought the class was very boring. 1 2 3 4 5 6 7

15. I felt like I was doing what I wanted to do while participating. 1 2 3 4 5 6 7

16. I felt pretty skilled. 1 2 3 4 5 6 7

17. I thought the class was very interesting. 1 2 3 4 5 6 7

18. I felt pressured while participating. 1 2 3 4 5 6 7

19. I felt like I had to participate. 1 2 3 4 5 6 7

20. I would describe the class as very enjoyable. 1 2 3 4 5 6 7

21. I participated because I had no choice. 1 2 3 4 5 6 7

22. After participating for a while, I felt pretty competent. 1 2 3 4 5 6 7