Exploring Female Students' Perceptions of a Tailored Physical Education Program

by

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BPE/BEd., University of Alberta, 2004

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ABSTRACT

A substantial number of adolescent girls are insufficiently active to achieve the health benefits and well-being associated with physical activity (PA). Physical education (PE) classes can provide part of the solution, yet most girls opt out of PE when it is no longer mandatory. Improvements in PE course content and learning environments can motivate adolescent girls to participate. Self-determination theory (SDT) provides a framework to examine the motivational processes of girls in PE. This qualitative case study explored female students' motivation towards physical activity in one elective PE 10-12 course tailored to meet their interests and needs. A secondary objective was to determine if the pre-requisites and outcomes of their motivation were consistent with the constructs of SDT. Emerging themes reflected the elements of SDT. The students expressed that their needs were supported by the teacher through the PE course content and learning environment. Many stated that they felt motivated because they now enjoyed PE. Positive outcomes included PA participation, positive affect towards PE and PA, meaningful learning, and a sense of well-being. This study provides physical educators with insight to improve physical activity motivation and participation of female students in elective PE.

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Dedication

This thesis is dedicated to my parents.

Chapter 1

Introduction

It is well accepted that regular physical activity is associated with numerous physical and psychological health benefits. Physical activity can effectively reduce the risk for developing disorders such as cardiovascular disease, osteoporosis, some forms of cancer, and type 2 diabetes (Warburton, Katzmarzyk, Rhodes, & Shepard, 2007). Being active during childhood and adolescence is especially important as physical activity is essential for the healthy development of musculoskeletal tissues, cardiovascular systems, social and mental well-being, and for the maintenance of healthy body composition (Hills, King, & Armstrong, 2007). Unfortunately, it appears that Canadian children are not reaping the benefits of physical activity. The 2005 Canadian Community Health Survey found that 26% of Canadian children and youth were overweight or obese (Shields, 2006), and that 35% of girls and 23% of boys, ages 12 to 19, were classified as inactive by engaging in less than 1.5 kcal/kg of activity per day (Canadian Fitness and Lifestyle Research Institute, 2005).

Female adolescents appear to be particularly vulnerable to the health risks associated with inactivity. The same survey conducted by the Canadian Fitness and Lifestyle Research Institute (CFLRI) in 2005, found that only 15% of girls between the ages of 12 to 19 are meeting the international guidelines for optimal growth and development of ≥6 kcal/kg/day, compared to 28% of boys.

Even more problematic is evidence shows that these low physical activity levels will decline as adolescents get older. Studies indicate that age related physical activity declines are occurring and are more prominent for females (Boreham & Riddoch, 2001; Frankish, Milligan, & Reid, 1998). Between the ages of 12-14 and 15-19, physical inactivity increased among females from 30% to 38%, whereas inactivity among boys in the same age groups increased from 20 to 25% (CFLRI, 2005).

There is evidence that this decrease in physical activity in adolescence can continue into adulthood. Tammelin, Näyhä, Laitinen, Rintamäki, and Järvelin, (2003) surveyed over 7000 participants

at age 14 and again at age 31. The authors found that female adolescents who participated in sports once a week or more continued to be active in adulthood. In general, a greater amount of physical activity participation in adolescence resulted in a greater amount of physical activity as an adult (Tammerlin et al., 2003). Thompson, Humbert, and Mirwald (2003) investigated attitudes and behaviours towards physical activity in childhood and adolescence and compared them to the attitudes and behaviours the participants had as adults. The authors found through interviews with female adults that as the participants increased in age, their participation in physical activity decreased; this decline began in secondary school. It is critical to increase physical activity levels in adolescents, especially young women, to ensure healthy lifestyles in adolescence as well as in adulthood.

School based physical education programs are well-situated to help children and youth realize many of the health benefits associated with physical activity. Physical education can help students develop necessary skills for lifetime physical activity, as well as an overall awareness of the importance of physical activity. The aim of the BC curriculum for physical education is to allow students to develop "knowledge, movement skills, and positive attitudes and behaviours that contribute to a healthy active lifestyle" (BC Ministry of Education, 2008). Given this intention, physical education is a potential venue for adolescent girls to realize both the immediate and long term benefits of physical activity. Yet the majority of adolescent girls in Canadian schools tend to opt out of physical education when it is no longer mandatory (BC Ministry of Education, 1995). For example, a large Ontario survey found that enrolment for males and females in physical education dropped from 97.9% in grade nine to 35.9% by grade 12 (Dwyer, Allison, & LeMoine, 2006). In the United States, Pate, Ward, O'Neill, and Dowda (2007) surveyed a large sample of American adolescent girls and found that less than 10% of 12th grade girls were enrolled in optional physical education.

There has been significant research addressing the low participation levels of high school girls in physical education. Several common reasons for the loss of interest in physical education have emerged

from the literature. Team sports tend to make up the bulk of typical physical education programs, while lifetime activities with greater likelihood of carrying over into adulthood are often ignored (Fairclough, Stratton, & Baldwin, 2002; Gibbons, Wharf-Higgins, Gaul, & Van Gyn, 1999). Both middle school and high school girls identified a dislike of competitive team sports, particularly when they felt unskilled (Brooks & Magnusson, 2006; Couturier, Chepko, & Coughlin, 2007; Gibbons & Humbert, 2008; Ntoumanis, Pensgaard, Martin, & Pipe, 2004; Olafson, 2002). As well, the public nature of typical physical education class lead to negative affect and girls felt uncomfortable when required to perform skills in front of their classmates (Brooks & Magnusson, 2006; Gibbons & Humbert, 2008; Ntoumanis et al., 2004; Olafson, 2002). Adolescent girls also identified feeling self-conscious about their abilities and their looks while dressing in uniforms or athletic gear for physical education (Couturier et al., 2007; Ntoumanis et al., 2004; Olafson, 2002).

The lack of choice in activities and insufficient practice time to improve skills also appeared to contribute to girls' lack of motivation for and enrolment in physical education (Gibbons & Humbert, 2008; Gibbons et al., 1999; Ntoumanis et al., 2004). Many of these factors contributing to the girls' dislike for physical education appear in the early middle school grades. It is not surprising that the majority of adolescent girls opt out of elective physical education when they have the choice in high school.

In addition to documenting what girls dislike about physical education, several researchers asked girls to share their ideas about how to make physical education better. In turn, the researchers incorporated their ideas in the re-design of several physical education courses. Girls have identified that choice and variety of activities, including those meaningful to the participants, such as lifestyle or fitness activities, would improve physical education class by making it fun (Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Gibbons, 2009; Smith, Green, & Thurston, 2009). Allowing the students the opportunity to feel success and self-improvement has also been identified as a way to enhance physical education

(Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Gibbons, 2009). Gibbons and Gaul (2004), Gibbons (2009), and Brooks and Magnusson (2006) found that the re-designed programs were meaningful to the students and were successful at attracting and maintaining participants.

The effect of more broad based, school wide physical activity interventions have also demonstrated success in increasing participation of adolescent females in physical education class. For instance, The Lifestyle Education for Activity Program (LEAP) intervention (Felton, Saunders, Ward, Dishman, Dowda, & Pate, 2005) altered the school and community environment to encourage physical activity participation. Webber et al.'s (2008) Trial of Activity for Adolescent Girls (TAAG) intervention had similar promising outcomes for adolescent girls. Both interventions aimed to increase the number of minutes students were active during physical education class. By the end of the studies, the TAAG intervention resulted in a significant four minute increase in moderate to vigorous physical activity in intervention physical education classes, and the LEAP intervention also significantly increased activity among intervention schools.

Common guidelines for building these programs included a supportive learning environment, creating a sense of personal accomplishment or self-efficacy, and promoting active lifestyles (Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Gibbons, 2009; Felton et al., 2005; & Webber et al., 2008). Felton et al. (2005) used these guidelines in a "girl-friendly" physical education format, which provided opportunities for students to participate in a girls' only, noncompetitive environment, and to engage in lifestyle activities. Outcomes of LEAP included enhancing girls' physical activity self-efficacy, enjoyment, and minutes of moderate to vigorous activity during physical education class. In all studies, choice and the opportunity for input into activities were highly valued by the participants. Creating a fun environment was accomplished by having a variety of activities to prevent boredom. In addition, the opportunity for the participants to build social relationships was crucial in attracting and motivating participants (Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Felton et al., 2005; & Webber et al.,

2008). Both physical activity levels and feelings of self-confidence increased among the participants when programs were created to meet their needs (Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Pate et al., 2007; & Webber et al., 2008).

These studies demonstrated that an emphasis on positive and enjoyable physical education experiences can motivate adolescent girls to change their attitudes about physical activity and take responsibility for their health by increasing their activity levels. Understanding the motivational processes of young women in physical education, such as what factors cause them to choose or choose not to engage in certain behaviours, may provide some solution to the problem of declining activity levels.

Through qualitative research, adolescent girls have identified some components of successful and motivating physical education program. To optimize the motivation of adolescent girls in physical education, a theoretical approach may be useful. The motivating factors identified in previous research parallel the needs identified by self-determination theory. This theory examines the links between social factors and psychological mediators that precede motivation to engage in a particular behaviour and the resulting outcome variables, such as well-being and physical activity behaviours (Standage, Gillison, & Treasure, 2007). Self-determination theory provides a promising framework to investigate female student motivation and the corresponding outcomes in physical education (Deci & Ryan, 2000).

Ryan and Deci (2000) suggested that people have three basic psychological needs that must be satisfied in order to achieve intrinsic motivation, which involves engaging in behaviours out of pure enjoyment. The need for autonomy refers to having a sense of choice, the need for competence involves feeling a sense of efficacy, and the relatedness need entails a sense of social attachment and belonging. The extent of need fulfillment will determine if an individual is motivated internally or externally, or is amotivated. The type of motivation experienced as a result of the level of need satisfaction will govern certain outcomes, including an individual's well-being, affect, behaviour, and

learning. For example, a social environment like a physical education class can impact the participants' motivation and resulting outcomes depending on the degree to which the three psychological needs are met.

The outcomes of self-determination theory demonstrate how meeting the needs of young women can intrinsically motivate them to participate, enjoy, and achieve meaningful learning in physical education. This appears to be congruent with previous research. The themes identified as motivating for adolescent girls in previous physical education research, such as choice and variety, personal accomplishment, and social support, parallel the antecedents of autonomy, competence, and relatedness in self-determination theory. There is a need to examine meaningful physical education programs using a theoretical framework, as this has been lacking in previous literature.

Purpose of the Study

It is evident that carefully designed physical education programs can meet the needs of young women and can actively engage female students in meaningful learning. Gathering information directly from participants themselves allowed for greater understanding of how their motivation affected their participation in physical education. The purpose of this study was to examine a new elective physical education course that has successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Insight was gained into the features of the course that paralleled the antecedents of motivation identified in self-determination theory and how those elements impacted the students' perceptions of physical activity. The links between motivation and the outcomes of self-determination theory, including students' attitudes towards physical education, their perceived well-being, and their physical activity behaviour were also explored.

Research Questions

Two research questions were addressed in this study:

1. How did the course content and the learning environment of the Girls Getting Active Physical Education 10-12[1] program affect the female students' perceptions of physical activity?
2. Could the antecedents of motivation identified in self-determination theory be used to examine the components of a physical education course that successfully attracted and maintained young women's interests in physical activity?

Assumptions

1. The participants will respond truthfully to the focus group and personal journal questions.
2. Participants will behave as they normally would during participant observation periods.
3. The researcher's past experiences will become part of the research process.

Limitations

1. Small sample size (N=23) limits the generalizability of results.
2. A more dominant member of the focus group may have influenced the quality of responses.
3. The researcher may have biased the results or influenced the interpretation of the responses.

Delimitations

1. The study was limited to five focus groups of four to six female participants.
2. The study was limited to the participants of one physical education class in one school.

Operational Definitions

Adolescent girl: a female student currently between the ages of 14 to 17.

Physical education: a subject that allows students to acquire the knowledge, skills, and attitudes to enhance their quality of life through active living (BC Ministry of Education, 1995).

Physical activity: any endeavour in physical education that involves bodily movement produced by skeletal muscles that requires energy expenditure (World Health Organization, n.d.).

Motivation: the energy, direction, and persistence of activation and intention (Ryan & Deci, 2000).

[1] pseudonym

Learning environment: the class setting and student interaction with the teacher and their classmates.

Course content: class activities the students participate in during the elective Physical Education 10-12 program.

Chapter 2

Review of Literature

This literature review has been divided into four sections. Section one examines what is known regarding female students' dislikes toward physical education. The second section reviews the effectiveness of physical education programs that have been re-designed to better meet the needs of female students. Section three is an overview of self-determination theory, including a review of studies that apply self-determination theory in a physical education context. The fourth section concludes with future areas of research.

Quality physical education programs provide the necessary knowledge and skills to foster the development of positive attitudes towards physical activity and incorporate activity into daily life (BC Ministry of Education, 2008). Mandatory physical education classes reach nearly all students and can positively impact student physical activity levels. Yet despite the health benefit achieved from participation in physical education, the majority of adolescent girls develop an aversion to physical education, often starting as early as middle school, and choose not to enrol in physical education once they reach high school.

What Adolescent Girls Dislike About Physical Education

Previous research has identified several common aspects of the learning environment and course content of typical physical education courses that adolescent girls' dislike. Olafson (2002) found through interviews with grade seven and eight girls that they disliked the public display of physical education learning environments, which made them embarrassed and self-conscious. Publicly displaying skills in class, particularly skills they felt they lacked, was also disliked by adolescent girls' interviewed by Gibbons and Humbert (2008). Adolescent girls also felt self-conscious and experienced pressure to look good (Olafson, 2002) and identified sweating and changing as barriers to participation in physical education class (Couturier et al., 2007; Olafson, 2002; Ryan, Fleming, & Maina, 2003).

Other common aversions to physical education identified by adolescent girls involved the course content and structure of typical physical education programs. A main dislike was the lack of time provided in class to practice skills (Gibbons et al., 1999). Olafson (2002) found that certain activities, such as competitive team sports and running, made the girls feel weak and unsuccessful. Ryan et al. (2003) surveyed male and female students in grades six to eight, and found that their aversion towards physical education class arose from students feeling unskilled at sports and that their class periods were not long enough to learn skills and to be physically active. These low capacity sentiments were also reflected in a qualitative study with middle school girls by Gibbons and Humbert (2008) and when Ntoumanis et al. (2004) interviewed amotivated students, both male and female, participating in a typical physical education program.

Aside from the lack of time to practice and master skills, the types of activities offered in physical education have also caused young women to feel unsuccessful and disinterested. Many adolescent girls feel typical physical education course contents tend to emphasize competitive team sports too frequently, which allows classmates to see students' mistakes (Brooks & Magnusson, 2006; Couturier et al., 2007; Gibbons & Humbert, 2008; Ntoumanis et al., 2004; Olafson, 2002). Adolescent girls also identified that a lack of choice in activities also lead to their dissatisfaction with physical education. Smith et al. (2009), Ntoumanis et al. (2004), and Olafson (2002) found through their interviews that students felt they had little or no choice in activities, while Gibbons and Humbert (2008) discovered that students felt that the teachers always selected activities.

Physical educators have started to use adolescent girls' input to develop new course content and to improve learning environment. These programs are demonstrating that by making physical education programs meaningful to adolescent girls, not only will they participate but they will also enjoy physical activity.

Changing the Physical Education Course Content

Changing the course content has been a focus of many new physical education programs. Felton et al. (2005) examined the Lifestyle Education for Activity Program (LEAP) intervention which advocated a female focused curriculum by offering noncompetitive activities and emphasizing lifelong physical activity. Skills for physical activity were taught and students were active during the class. Results of this study included significant increases in physical activity among intervention classes and increased enjoyment in physical education. This is essential as both Fraser-Thomas and Beaudoin (2004) and Ntoumanis et al. (2004) found that many adolescent girls understood that the purpose of physical education is to maintain health and fitness and to learn skills, but this was often not realized in their typical classes.

Choice and variety of activities was a main component in the Women's Only Physical Education 11 (WPE 11) class examined by Gibbons and Gaul (2004). This new class was developed with the current WPE 11 students' input and was based on previous research (Gibbons et al., 1999) into the physical education likes and dislikes of adolescent girls. The course was designed to allow girls more choice and control over activities. Emphasis was placed on lifetime physical activity, health-related knowledge, and personal physical activity goals. By meeting the participants' needs, Gibbons and Gaul (2004) found that the young women in WPE 11 participated willingly and enthusiastically. Similarly, Gibbons (2009) found that PE programs with high female enrolment tended to focus on lifetime physical activity and use student input in course design which allowed students to take ownership over their learning.

A large broad scale intervention aimed at increasing physical activity levels of adolescent girls also made changes to physical education course content. The Trial of Activity for Adolescent Girls (TAAG) study by Webber et al. (2008) was designed to improve the students' self-efficacy via skill building and goal setting activities. Teachers were encouraged to provide the girls' with choice into activities and to promote engagement in physical activity for greater than 50% of class time. At the

conclusion of the three year intervention, daily moderate to vigorous physical activity levels modestly increased by about 1.6 minutes. Girls in the intervention schools also became more aware of TAAG concepts than girls in the control schools. These concepts included learning how to be active outside of physical education class, how to set goals, and how to monitor their own activity levels.

In a smaller intervention, Dunton, Schneider, and Cooper (2007) examined an alternative physical education class designed specifically for sedentary adolescent girls. Activities had a more lifetime focus and students' were also taught goal-setting, barrier breakdown, time management, and motivation. The selection of activities was based on focus groups with the target population. The intervention resulted in significant increases in vigorous leisure time physical activity, particularly for participants with higher cardiovascular fitness levels at baseline. Participants with lower fitness levels did increase their weekly minutes of moderate activity, but these results failed to reach significance.

Fraser-Thomas and Beaudoin (2004) qualitatively assessed the new physical education curriculum in Nova Scotia that had a greater focus on lifelong physical activity. The adolescent girls stated that activity type was related to their enjoyment of their physical education class, indicating a preference for individual, recreational activities. Also contributing to the girls' enjoyment of the new physical education curriculum was having the choice over which activities and competition level were offered in the class. Some less positive outcomes also arose from this study, including fewer opportunities for girls to participate, which partly resulted from implementation obstacles including a lack of teacher training in the new activities.

The tailored physical education programs previously mentioned had several common factors that resulted in more meaningful learning for the participants. Helping girls learn the necessary skills, a variety of lifetime activities, and psychological tools including goal setting and reducing barriers, can significantly influence their perceptions and physical activity levels. The focus on more lifestyle physical activities is crucial to combat the trend of declining physical activity levels and may help adolescent girls

succeed in remaining active during the transition into adulthood. Adults will often engage in activities that fit into their lifestyle, that they can do in a small area, with few people, and little equipment or facilities (Mohr, Townsend, & Pritchard, 2006). By shifting to these activities in physical education class, students will learn the skills to participate in these activities as they get older, positively affecting their health (Mohr et al., 2006).

Choice of activities, mentioned in previous research (Brooks & Magnusson, 2006; Gibbons & Gaul, 2004; Gibbons, 2009) was found to be particularly motivating for adolescent girls, indicating that allowing student input into the course content of a program can also positively affect the learning environment. Both the course content and the learning environment need to be addressed when re-designing physical education programs in order to successfully attract female students. Recent physical education interventions have examined how changing the learning environment to meet the needs of adolescent girls can improve their participation in physical activity.

Changing the Physical Education Learning Environments

Adolescent girls have identified attributes of the type of learning environment they'd prefer in physical education. The learning environment of a physical education course is comprised of different aspects, including the social environment, the personal environment, and the instructional strategies used by the teacher.

Social Environment

Recent studies have examined single gender physical education programs designed for adolescent girls. Research has shown that secondary school girls feel their social environment can be discriminating because they perceive that boys have more choices in and out of the gym (Azzarito, Solmon, & Harrison, 2006; Gibbons & Humbert, 2008; Smith et al., 2009). Fraser-Thomas and Beaudoin (2004) found that when they had the option in the new curriculum, grade eight and nine girls preferred female only physical education class because it allowed them increased opportunities to participate and

to feel more comfortable. Hurtes (2002) observed the behaviour of adolescent girls within an adventure education setting. Social acceptance was a need that manifested in the girls' behaviour. The girls' expressed relief that no males were present, as this would have made the girls feel even more insecure and self-conscious. Olafson (2002) found that without pressure from their male counterparts, female students expressed they felt they could attempt new activities with less fear.

Gender can also influence how the teacher interacts with students in the learning environment. Hannon and Ratliffe (2007) observed one co-educational and one single-gender physical education class. They found that female students in the single gender class had a higher frequency of participation than they did in the co-educational class. Teachers were also found to have a higher rate of verbal interaction with female students in a single-gender class than when the girls were in a co-education class (Hannon & Ratliffe, 2007). Providing a safe, female only, learning environment can encourage participation and self-confidence.

Other interventions also focused on creating learning environments specifically geared towards adolescent girls. Gibbons and Gaul's (2004) examination of the WPE 11 class and the Dunton et al. (2007) study involved female only classes to make participating in physical education more enjoyable. A modified physical education program evaluated by Brooks and Magnusson (2006) and the TAAG study by Webber et al. (2008) were also focused towards adolescent girls, yet classes remained co-educational. The LEAP study examined by Felton et al. (2005) had classes that remained co-educational, but increased the number of opportunities for gender separation in intervention classes. When the participants were asked for the comments regarding the new female specific programs, they identified that it was more fun to be in girls-only physical education and that their participation levels increased (Felton et al., 2005). These findings support previous recommendations for single-gender physical education programs (Hannon & Ratliffe, 2007; Olafson, 2002).

In addition to gender aspects of the social environment, relationships with peers can also affect physical education outcomes. Dunton et al. (2007) found that a school-based physical activity intervention that emphasized group learning was beneficial for students with lower levels of friend support. Felton et al. (2005) also found adolescent girls expressed a preference for working in groups because it made physical education more enjoyable. If a student feels comfortable and safe within the social environment of a course, it is likely to also affect their personal environment in physical education.

Personal Environment

It is evident that providing adolescent girls with a supportive and positive learning environment can influence their participation. Gibbons and Gaul (2004) and Gibbons (2009) found that by creating a respectful and supportive environment, the students felt the class was fun and this encouraged them to improve and participate. A relaxed and positive atmosphere resulted in students' feeling motivated to do their best. This reflects similar findings in the Felton et al. (2005) study, where students identified a positive environment lead to increased enjoyment and participation. Brooks and Magnusson (2006) determined that when the environment in the physical education class they examined shifted to be more cooperative and supportive, previously marginalized girls felt greater self-confidence. These students felt empowered, both psychologically and emotionally, to become involved in community based sport and activity programs. Improving social support to foster greater physical activity was also a key component in the TAAG intervention (Webber et al., 2008). It is apparent that altering the personal environment to encourage students to feel better about themselves lead to changes in their perceptions of physical education. To change the learning environment in a positive way, physical educators also need to implement the proper teaching strategies.

Teaching Strategies

Other modifications to the learning environment included having teachers use instructional methods identified as enjoyable by adolescent girls. Small group interaction was found to be enjoyable in the Felton et al. (2005) study. Brooks and Magnusson (2006) found that students' physical self-confidence was improved when teachers used praise and encouragement. Physical educators in several studies also placed greater emphasis on participation and effort, rather than competition, which helped encourage participants to be active during class (Brooks & Magnusson, 2006; Dunton et al., 2007; Gibbons & Gaul, 2004; Webber et al., 2008). Brooks and Magnusson (2006) suggested that shifting the focus away from winning and being the most skilled allowed all students to feel successful and encouraged to participate.

Changing the learning environments' equipment and uniforms was also important. The new physical education programs examined by Brooks and Magnusson (2006) and Dunton et al. (2007) improved the change rooms and allowed students to choose what type of uniform to wear to class, creating a positive and enjoyable environment in which the girls could participate. Updating equipment to allow students to engage in new activities was mentioned in the TAAG intervention and in the Brooks and Magnusson (2006) study. This was not done in Fraser-Thomas and Beaudoin's (2004) evaluation of the new physical education curriculum in Nova Scotia, and was identified as a weakness in the study. Having a lack of facilities, training, and equipment prevented teachers from implementing many new activities, which lead to fewer opportunities for girls to participate.

In summary, the participants' physical education classes were changed to be more female friendly by changing the course content, the social and the personal learning environment, and some teaching strategies used. Increasing opportunities to be active and altering instructional styles to promote choice, self-efficacy and personal competence, had positive effects on attitudes towards physical education and physical activity levels. Female students will participate enthusiastically in

physical activity if they feel respected and supported. If physical education classes are to be used as an avenue for change by endorsing healthy lifestyles, these programs provide evidence of how to be more appealing to young women. Promoting active lifestyles may ensure students leave high school with the necessary knowledge, skills, and attitudes to be healthy adults.

To increase physical activity levels, adolescent girls must be motivated to participate. Motivated students participate with confidence, are eager to learn new skills, and are determined to accomplish a task (Lee, 2004). Students who are motivated in physical education will have personal value to physical activity and perceive it as enjoyable (Lee, 2004). If physical education programs are to succeed at drawing in young women and increasing their physical activity levels, insight can be gained by examining the motivational processes behind their physical education participation and enjoyment. This motivational approach can be accomplished using Deci and Ryan's (1985) self-determination theory to examine physical education.

Overview of Self-determination Theory

The previous studies have examined the re-design of physical education programs' course content and learning environments, but have not examined student motivation from a theoretical framework. Self-determination theory can be used to examine the pre-requisites and the consequences of different types of motivation.

Self-determination theory is a multi-faceted approach used to examine the processes of motivation (Hagger & Chatzisarantis, 2007). The theory, developed by Deci and Ryan in 1985, posits that humans have innate psychological needs that influence behaviour. Depending on the level of need fulfillment, humans can be motivated intrinsically, extrinsically, or experience amotivation, which will impact their attitudes and behaviour (Ntoumanis et al., 2004).

Deci and Ryan (1985) suggested that the three pre-requisites of motivation in self-determination theory are the need for autonomy, competence, and relatedness. Autonomy refers to the natural desire

humans have to choose their behaviours according to one's sense of self. If people perceive that they are being controlled by external rewards, such as punishment or material goods, the cause for their behaviour shifts from internal to external and they will experience extrinsic motivation. Competence involves a sense of efficacy; how an individual perceives their ability to accomplish a task. Relatedness involves a sense of security and interaction with social groups. Belonging to a group and feeling confident in one's abilities may be motivating, even if the activity is not enjoyable.

According to Deci and Ryan (2000) intrinsic motivation will be maximized if the task provides optimal challenge and allows people to feel successful. If an individual's needs are unfulfilled, they will dislike the activity and have no intention of participating, becoming amotivated. If an individual feels coerced to participate or does so for external rewards, he or she will experience extrinsic motivation. On the opposite end, if an individual's needs are satisfied, he or she will engage for the love of the activity and experience intrinsic, or self-determined motivation.

In physical education context, a student who finds excuses to avoid participating or skips class is amotivated. If she feels forced to participate, for fear of punishment or to receive a reward, the student is motivated extrinsically. Only when a student enjoys physical education and participates without thought because the class is fun, will she experience intrinsic motivation.

Meeting students' psychological needs in an effective physical education class could contribute to their well-being by motivating students to engage in activity intrinsically. Bryan and Solmon (2007) suggested that students are more likely to be physically active in and outside of school, as well as across the lifespan if high levels of motivation are developed in physical education programs. They further point out that if an autonomy supportive choice-based PE environment is established, where students feel they belong, and the course's emphasis is on self-improvement and optimal challenges, a PE teacher may foster intrinsic motivation by meeting the students' needs. Autonomy supportive teaching strategies include planning activities that align with students' interests and competencies (Reeve, 2006).

Standage, Gillison, et al. (2007) suggested autonomy support in physical education can involve a social environment supportive of choice, initiation, and understanding. Students' relatedness needs can be fulfilled through opportunities to work cooperatively in groups and with friends. Positive outcomes of intrinsic motivation in a physical education context, according to self-determination theory, can include increased physical activity, a positive attitude towards activity, increased learning, and an overall improved sense of well-being (Standage, Gillison, et al., 2007).

Studies using self-determination theory to examine motivation in physical education have supported the notion that need fulfillment results in self-motivation, which corresponds with sought-after positive consequences in physical education, such as positive attitudes towards physical activity. Correlational studies used to examine various models of student motivation have shown that physical educators' need support can directly influence students' psychological need satisfaction. For example, Ntoumanis (2005) surveyed British physical education students and found that when physical educators provided need support, this correlated with greater perceptions of autonomy, competence, and relatedness satisfaction among students. This need fulfillment predicted self-determined motivation, which indirectly predicted participation in optional physical education and was positively correlated with student effort.

Lim and Wang (2009) found similar results in their descriptive study. Perceived autonomy support in physical education related positively to intrinsic motivation and negatively to amotivation. Intrinsic motivation was found to correlate positively with intention to be physically active outside of school while amotivation was negatively associated with physical activity.

In a similar descriptive study, Ommundsen and Kvalo (2007) found that a learning environment where teachers supported students' needs and emphasized a mastery climate, where students felt the focus was on learning, improvement, and participation, positively influenced students' perceived competence and autonomy in physical education. This in turn was positively associated with intrinsic

motivation and negatively with amotivation. Self-determined motivation predicted high levels of interest and enjoyment towards physical education and greater levels of leisure time physical activity participation.

Standage, Duda, and Ntoumanis (2003) assessed physical education motivation of secondary school students. The authors had similar findings to other correlational studies. They found that autonomy-supportive and mastery climates positively influenced autonomy, competence, and relatedness, which fostered self-determined motivation. Self-determined motivation positively predicted and amotivation negatively predicted leisure-time physical activity intention. These studies supported self-determination theory by demonstrating that intrinsic motivation can lead to positive outcomes, such as increased well-being. Motivating students in physical education has been shown to translate into greater physical activity participation outside of school.

Standage and Gillison (2007) surveyed secondary school students to test a model used to predict student motivation in physical education. The authors found that perceived autonomy support from the physical education teacher positively predicted autonomy, competence, and relatedness. Need satisfaction was related to autonomous motivation, which in turn positively influenced students' self-esteem and health related quality of life. This supported the notion in self-determination theory that there are links between motivation, physical activity levels and well-being (Deci & Ryan, 2000).

While these studies supported Deci and Ryan's work on self-determination theory, one weakness was the studies used self-report methods to assess physical activity levels or only examined students' intention to be active. A few authors have used more objective measures to examine the relationship between motivation and physical education outcomes. For example, Vierling, Standage, and Treasure (2007) conducted a cross-sectional study with low socioeconomic Hispanic middle school students in the United States of America. Again, a relationship was found between perceived autonomy support and need satisfaction. The authors objectively measured physical activity behaviour with

pedometers, and found a positive relationship between intrinsic motivation and the average number of steps per day. A positive association was also found between autonomous motivation and positive attitudes towards physical activity. Although the relationships were modest, this research has shown that intrinsic motivation accounts for some variance in attitudes towards physical education and physical activity levels which could be further explored.

Shen, McCaughtry, and Martin (2006) used a cross-sectional design to investigate the links between urban adolescents' perceptions of autonomy and competence in physical education and leisure time physical activity. Although self-report was used to assess physical activity levels, Shen et al. (2006) did objectively measure cardiorespiratory endurance using the Progressive Aerobic Cardiovascular Endurance Run (PACER) test. The results of this study revealed significant positive correlations between perceived autonomy and competence in physical education and attitudes towards physical activity, physical activity levels, and cardiorespiratory fitness.

The results of the correlational studies supported Deci and Ryan's theory that autonomy support from physical educators can positively predict need satisfaction, which can influence students' motivation levels. Students with greater levels of need satisfaction had higher levels of intrinsic motivation which lead to positive outcomes in physical education, such as increased activity in and out of physical education class, positive attitudes, and greater effort.

Studies in self-determination theory have been primarily descriptive and cross-sectional. Few intervention studies have been conducted on self-determination theory in physical education. In one experimental study, Prusak, Treasure, Darst, et al., (2004) randomly assigned female physical education classes to a choice group or a no-choice group. The authors found that the adolescent girls' intrinsic motivation was higher in the choice group, where as extrinsic motivation and amotivation was significantly higher in the no-choice group. Ward, Wilkinson, Vincent Graser, and Prusak (2008) examined the effects of choice on female student motivation and found that when the students

participated in a choice condition during physical education, they had higher self-determined motivation. The authors also investigated the effects of choice manipulation on pedometer step count during physical education class, and found no significant differences between groups. Contrary to this, Lonsdale, Sabiston, Raedeke, Ha, & Sum (2009) found that when offered a free choice portion of a PE class, students responded with higher step counts when compared to the number of steps taken during the structured portion of the lesson. While these three studies have examined the aspect of choice or autonomy in physical education, there has been little experimental research on the other pre-requisites of self-determined motivation.

Few qualitative studies have investigated student motivation, indicating that this could also be a promising area for further research. McBride, Xiang, and Bruene (2007) did use qualitative techniques, and collected data through individual interviews with secondary school students. The students revealed that having choices in activity selection, location, intensity, and type of workout positively impacted their motivation to participate in physical education. The importance of choice has emerged in physical education (e.g. Gibbons & Gaul, 2004; Smith et al., 2009) studies not examining self-determination theory directly.

Other qualitative evidence has supported relationships between amotivation and physical activity behaviour. Ntoumanis et al. (2004) found through interviews with physical education students that amotivated students had low participation, passive or disruptive attitudes and behaviour, and low future intention to participate in physical activity. A low mastery climate that had little focus on learning and improvement contributed to the students' amotivation and poor learning outcomes. These students were not gaining anything from physical education which resulted in their amotivation and low involvement, whereas the authors found conversely that motivated students do not feel bored or pressured to participate in physical education.

Additional qualitative research can provide insight into how satisfying the needs of autonomy, as well as competence and relatedness, can influence the students' perceptions and motivation towards physical education. The majority of the studies have used typical, co-educational classes as the research setting. Tailoring an intervention to the meet the needs of the participants, such as self-determination theory recommends, may be more effective to increase physical activity. There is a lack of theoretical research looking at the effects of modifying physical education programs based on the needs of adolescent girls. Qualitative examination of re-designed, female only, physical education courses from a self-determination theory approach is needed. Through this literature review, the opportunity for qualitative assessment of tailored female only physical education classes using self-determination theory lead to the purpose of this study.

Chapter 3

Methods

The purpose of this study was to examine a new elective physical education course that had successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Insight was gained into the features of this course that paralleled the antecedents of motivation, and into the links between the participants' motivation and outcomes of self-determination theory. This chapter presents the methodology used to answer the research questions, including a description of the design of the study, the participants and setting selection for the study, and a description of how data was collected and analyzed. The background of the researcher concludes the chapter.

Design

A case study design was selected for this research. Case study design is suitable if the researcher is interested in unique or atypical features of a case and what sets it apart from other cases, including the case's atypical happenings, relationships, and situations (Daly, 2007). This type of research is conducted in a setting natural to the participants, and focuses on their perspectives and meaning (Creswell, 1998). This was deemed appropriate as the purpose of this study was to gain meaning and understanding about physical activity motivation in a specific physical education context. Rather than focusing on the outcomes or confirmation, case studies are used to gain insight into process, content, and discovery (Merriam, 1998).

Case Description

The "case" for this study was one female only elective PE course for students in grades ten through 12, Girls Getting Active (GGA), occurring during the fall 2008 semester in the Southern Vancouver Island area of British Columbia. This class was selected for this study for several reasons. GGA was designed as an alternative to the traditional co-educational PE courses for grades 11 and 12

offered at the school, which tended to have low female enrolment. While all of the other physical education courses at the school were co-educational, this class was unique as it was designed for only female students. It was a unique program because the teacher made a considerable effort to incorporate input from participants into the content of the physical education course, while adhering to the BC curriculum. The focus of this course was to encourage young women to be active by participating in activities they enjoy, and many of these activities selected were more lifestyle based. This was the second year the course had been offered and it had attracted and maintained a large enrolment of high school girls, setting it apart from other elective physical education classes in BC with low female student enrolment. Another key factor was that the participants in grades 11 and 12 had the choice to enrol in this optional class, as PE in BC is no longer mandatory after grade ten. Grade ten students had the choice to enrol in GGA or in regular co-educational PE 10. The majority of the participants chose to enrol in GGA, while a small number were placed into the class by the school administration.

A typical week in GGA included team building lessons on Monday, field trips on Tuesday as it was a double block, followed by an activity unit on Wednesday, Thursday, and Friday. The units would vary in length depending on the activity and the number of votes the activity received from the students. For example the dance unit lasted three weeks as it was one of the more popular choices of activities among the students in GGA. There were no additional school fees required to enrol in GGA. Any money required to pay for field trips or guest instructors was raised through fundraising events such as bake sales, and through personal donations of $25 from parents. Costs for field trip transportation were kept to a minimal amount as the teacher and students walked or took public transit to various locations.

GGA was implemented in a public secondary school for grades nine through 12 with approximately 700 students. The school was located in a rural community, a 40 minute drive from a larger urban center. The main industries in this community included forestry, fishing, and tourism. The

majority of students were Caucasian and typically from a lower middle class to middle class background. The school's surrounding area population was approximately 10, 000 people. The teacher of GGA, in her third year of teaching, held a full-time appointment split between PE and another compulsory subject.

The purpose of this intrinsic case study was to explore how the unique factors of this course paralleled the antecedents of motivation and to explore the links between motivation and the outcomes identified in self-determination theory.

Recruitment and Data Collection

School district and ethical approval from the Human Research Ethics Board was obtained prior to visiting the site. The study was presented to the superintendent, the principal, and the teacher involved, and then to the potential participants. Parental and participant consent was sought via a form that described the purpose of the study and addressed the confidentiality of the participants and any known risks and benefits associated with participating (see Appendix A). Participants were informed of their right to withdraw from the study at any time. The researcher was available to address any questions or concerns regarding the study.

Purposive sampling was used to recruit participants. The study was limited to the participants enrolled in GGA, the female only elective physical education 10-12 course. Every student in the class was invited to participate in the study. There were 32 students enrolled in GGA and each student agreed to participate in the study. The final sample size (N=23) was determined by the number of students who had their parental consent forms signed. This within-site study took place in their natural setting, the school they attended. Data collection through participant observation and personal journal entry occurred in the physical education class, while focus group interviews occurred in the quiet setting of the teacher's homeroom. A combination of the participants' natural setting during observation and a private setting for focus groups made the observations more realistic and increased the participants' comfort levels resulting in higher quality information (Hancock & Algozzine, 2006).

Data collection in this study involved four different methods. Focus groups and the participants' personal journals were utilized to gain insight into the participants' experiences during the course. Periodic participant observation and content analysis of course materials, such as outlines and handouts, were used to examine the learning environment and course content. Merriam (1998) suggested that using certain data collection techniques, such as personal journals, should not be the sole method for collecting data in a qualitative study as they can be highly subjective. Using three independent sources of data, such as focus groups, observations, and personal journals, to draw and support conclusions, known as triangulation, improved the validity of the study (Thomas, Nelson, & Silverman, 2005).

Focus Groups

Focus groups were used to gain insight into the participants' perceptions of the course of interest, including the content and the learning environment, and how these factors affected their motivation towards physical activity. Stewart and Shamdasani (1990) stated that in case studies and motivation research, focus groups are often used as the main source of data because they are a cost effective method of acquiring data on a particular topic of interest. During a focus group, individuals participate in a discussion under the direction of a moderator. In this case study, the moderator was the principal investigator, and she was able to observe for non verbal responses and probe for clarification of responses, which allowed for deeper levels of meaning and conclusions (Stewart & Shamdasani, 1990).

Questions in the focus group interview guide were based on the constructs of self-determination theory and were designed to answer the research questions. General questions were asked first, leading into specific questions by the conclusion of the meeting. The focus groups were semi-structured, with the researcher using a list of potential questions but allowing time for participants to further explore each other's responses. The focus groups for this study were approximately 45

minutes in duration to fit into regular class time, and involved four to six participants per group. The number of participants was not as important as the potential insight and understanding each person could offer (Merriam, 1998). Five focus groups were conducted near the end of the term. Participants received a copy of the focus group questions prior to participating in the focus groups (see Appendix B).

Upon entering the quiet classroom where the focus groups were conducted, healthy snacks and drinks were provided to make the participants feel more comfortable. The participants were then seated around a table, introduced to the volunteer note taker from the University of Victoria, and reintroduced to the purpose of the study. Participants were assigned numbers for identification which provided some anonymity and the note taker made sure she could clearly see each participant's number to record the corresponding comments. An audio recorder was used with the participants' permission, and data recorded was supported with the notes taken. The note taker was directed to write down as much of the conversation as possible, but primarily focus on recording the order in which the participants spoke. Upon completion of the focus group transcription, members of each group received a copy of the transcript. Each participant signed the transcript, signalling that they agreed their responses during the focus groups were correctly typed.

Personal Journals

Personal journals were used to gain further insight into the participants' physical education experiences. Primary source, personal documents used in qualitative research are subjective accounts written by the participants, and can describe an individual's attitudes, beliefs, experiences, reactions, and world views (Merriam, 1998). These first-hand narratives, generated by the researcher, can provide insight into the daily life of a participant, their situations, or events (Merriam, 1998). Personal journals were used as participants may feel more comfortable sharing personal thoughts in a journal format than discussing their feelings with an unfamiliar researcher.

With permission from the teacher, the participants wrote in their journals on a bi-weekly basis, describing how they felt about the class, physical activity in general, and their well-being (see Appendix B). Six out of the seven journal topics were predetermined by the researcher to help address the research questions. The final journal entry was used to clarify any of the participants' previous responses, including any questions arising from the focus groups. This type of member check meant that journal entry seven was personalized to most students. Participants' received a typed question and responded in the same journal each session. Writing took place during the last 15 minutes of class, after the participants were permitted to change out of their gym strip. Participants were encouraged to complete their journal entry in quiet contemplation, spread out in the gym away from their friends. The journals were collected and transcribed after each entry.

Participant Observation

Participant observations were used to gain insight into the course content, the learning environment, and the physical education experiences of the participants in the course of interest. The purpose of participant observation is to clearly see firsthand how the participants are in everyday life (May, 2002). Daly (2007) suggested that by becoming a part of the course, the researcher can learn how the participants move and interact in their social environment. This provides additional insight into the participants' behaviours, as observation can be more objective than other data collection methods. Access can be gained through participant observation to events and discussion among participants that may otherwise not be achieved (Daly, 2007). Participant observation is the best data collection technique in case study research when an activity, event, or situation can be observed firsthand, when participants are not able or unwilling to discuss a certain topic, or when a fresh perspective is desired (Merriam, 1998).

For this study, participant observation commenced approximately three weeks into the term and continued randomly, at minimum one class per week and approximately one observation per

activity, until the semester came to an end. The focus of the participant observation was to examine the participants' behaviours and how they navigated the social environment of GGA. The participant observation was helpful to determine how certain teaching strategies influenced the learning environment. An observation guide was created for this study with a list of features to record specific behaviours that answered the research questions. Specific observable behaviours were pre-determined in relation to the research questions and an observational protocol was used (see Appendix B and C). To make the observations as unobtrusive as possible the investigator developed a relationship of trust and goodwill with the participants by blending into participants' routine, by helping out the teacher, and by being friendly and showing interest in the participants' activity. During the observations, the investigator participated in the course activities and interacted with the participants. No notes were taken during the observations, field notes were completed immediately after the observations session and later transcribed into a Microsoft Word document. Sixteen participant observations were completed.

Content Analysis of Course Materials

The course outline was used to determine the objectives of the course and what activities were to be done throughout the term. Utilizing the course outline and other materials, such as assessment rubrics, assignments, and handouts, assisted in gaining insight into the course content, answering part of the research questions. Often used in an educational context, a public document, such as course outlines and lesson plans can provide information about a program. Merriam (1998) suggested the researcher can also use these public documents to gain ideas about types of questions to ask participants during direct interviews and observations. The course outline was photocopied at the beginning of the term and was used as a guide of what activities to expect throughout the duration of the course and whether the participants did indeed have input into the activity selection for this course.

Other course materials, such as assignments and assessment tools were collected and photocopied through out the term.

Data Analysis

Qualitative content analysis was used to identify patterns in the data set. The content of documents, memos, written transcripts, and field notes were reviewed for categories and themes (Merriam, 1998). This section will discuss general steps used to analyze data and steps specific to each data source.

The first step in analysis involved transcription of all data sources. Field notes from the participant observation sessions were transcribed into a Microsoft word document immediately upon returning to Victoria from the case study site after each data collection session. Personal journal entries were transcribed into a word document after each session. Audiotapes from the focus groups were also immediately transcribed, and these were verified with the written notes to ensure comments were correctly associated with each participant's number. This helped to ensure the data was trustworthy. Participants were asked to verify transcripts once they were completed. Copies of the course outline and other documents given to the class were also collected throughout the semester. Transcripts from focus groups, participant observations, and personal journal entries were imported into a qualitative software program, NVivo 2.0, to manage the data and to conduct thematic analysis. Creswell (1998) recommended using computer programs in qualitative research as it allows for easier ways to store, organize, and locate data.

Once data was transcribed it was important to review the purpose and the research questions of the study before continuing with analysis, as suggested by Merriam (1998). Data was read and re-read, while the researcher reflected and made notes in the margins of the text near any pieces of data that were potentially relevant, interesting, and important to the study. Once the researcher had gone through the first set of transcribed data, she looked over the comments and grouped the items that fit

together, describing any tentative or speculative themes, hunches, and ideas to pursue (Merriam, 1998). A case record that includes the edited and organized information was kept so specific data could be easily accessed either chronologically or topically (Merriam, 1998).

Data was continually analyzed as it was collected. Coding started after the first few observation sessions to function as a foundation for further data collection and analysis (Corbin & Strauss, 2008). Each document was coded separately. Anything that the researcher wanted to ask, observe, or look for was noted for the next data collection activity. The constant comparative method was utilized by comparing incidents from the first set of data to the second, the third, and so on (Merriam, 1998). Once all the data was collected, the researcher organized and refined categories and subcategories that supported the purpose of the study. Triangulation of each data source was done to determine if the patterns and codes were consistently found in each data source. Once categories were established in all of the data, they were grouped together into recurring themes. This analysis provided a rich, detailed description of the participants' perceptions in the context of the case (Creswell, 1998). The final assertions, or interpretations of the data, were discussed in terms of the constructs of self-determination theory. Common themes were organized into a table, all bits of data fit under one of the constructs. For each construct, broad theme names were identified using language similar to that of the participants, and comments and observations were grouped within these themes. Detailed descriptions of the themes are found in the next section.

Assessment of Data Quality

Credibility

The context, participants and settings must be clearly understood for the study to be believable and for readers to make connections to their own situations (Thomas et al., 2005). Thomas et al. (2005) provided the following techniques for endorsing credibility that were used in this study:

1. Prolonged engagement: the researcher periodically observed the class over four months to develop an in-depth understanding of the course setting and the participants.
2. Triangulation: three independent sources of data were used in the study (focus groups, observation, and personal journals) to support the conclusions.
3. Peer debriefing: the research supervisor questioned the researcher's findings to ensure the conclusions were sound.
4. A rich, thick description: the setting and the participants were described in detail to increase credibility and transferability.

Transferability

Transferability refers to evaluating whether the results of the study could be applied in other contexts, such as other physical education settings, or in similar types of research (Thomas et al., 2005). Recommendations for future research and implications of the study were discussed after the findings were analyzed to increase transferability.

Dependability

This concept involves being flexible to deal with change when collecting data, particularly in interview contexts (Thomas et al., 2005). To ensure the quality of the data is high, the focus groups conducted in this study were semi-structured; a few questions were pre-determined, but follow up questions were utilized to make adjustments to previous answers. Field notes from participant observations were used to guide subsequent observations. An audit trail was used to keep track of any changes that occurred and how these changes improved the quality of the study.

Confirmability

Qualitative research should allow for "readers to have faith in the results of the study" (Thomas et al., p. 359, 2005). To address researcher bias, negative case checking was used. This involves noting

results that were not expected to happen during observations or focus group discussions. Researcher bias was managed and clarified in the following section.

Background of the Researcher

Qualitative inquiry is subjective as the researcher is the primary data collection instrument (Thomas et al., 2005). The manner in which the researcher interacts with the participants, and the way in which the researcher processes observations and responses influences the quality of the data and conclusions. Experience in qualitative research is helpful to ensure high quality work.

As a female physical educator, I have first hand experience participating in physical education as a student and as a teacher. Both positive and negative high school physical education experiences have shaped the way I view physical education programs. I believe that adolescent girls have different needs than their male counterparts and students of a younger age, and realize that increasing physical activity levels in this population presents a unique challenge. From an early age I was active in sports and physical education. I have always been highly motivated to participate in physical activity because it is something that I enjoy, partly because certain skills came easily to me early on. My parents exposed me to a variety of different sports and lifestyle activities as they are both highly active people.

Through my experiences participating in sport, as well as teaching physical education and coaching school sports, I understand that many young women differ from me and are not motivated to be active and often dislike physical activity. I am familiar with the physical education curriculum and have experienced the traditional way it has been taught, from a competitive sport perspective. However I do know that there are plenty of opportunities for other types of activities in physical education, as the curriculum is fairly flexible to accommodate more lifestyle based activities, which may prove to be more interesting to adolescent girls. For these reasons I choose to examine the motivational process of young women in physical activity to hopefully gain insight into how to target adolescent girls who are inactive and dislike physical activity. Using self-determination theory as a

framework for my study seemed like a logical fit as the theory is straightforward and I could see that I was already using some of the constructs, particularly relatedness, when I was teaching adolescent girls' physical education in the past. As an experienced teacher I also understand the responsibilities of a teacher, including the challenges of trying to motivate all students to be physically active while adhering to the curriculum.

To gain experience with qualitative research techniques prior to my study, I worked as a researcher facilitating focus groups with girls of approximately the same age as targeted in my study. Through that contract I also gained practice using content analysis to look for patterns in the data I had collected for the project. I have also increased my knowledge on case study research techniques through course work in graduate school.

Being physically active has influenced me in positive ways, both physically and psychologically. With this study, I hope to improve the health and well-being of adolescent girls by sharing the knowledge gained from this study with other teachers, changing future physical education experiences in a positive way.

Chapter 4

Results

Chapter 4 has been organized based on the constructs from Deci and Ryan's (1985) Self-Determination Theory (SDT). The theory was used to frame the focus group and personal journal questions, as well as the observation protocol. Data was therefore analyzed according to these constructs. Data sources included five focus groups, seven personal journal entries, and 16 participant observation sessions. Four distinct themes emerged from the data sources. Themes were supported with data from each source.

Deci and Ryan (1985) addressed motivational processes and outcomes with self-determination theory. The authors argued that a need supportive environment can facilitate need satisfaction. Need satisfaction, in turn, fosters intrinsic motivation. Intrinsic motivation directly leads to desirable outcomes. Table 1 displays the emerging themes from this case study and their corresponding construct from SDT.

Table 1

Recurring Themes from Qualitative Data Analysis

Self-determination theory construct	Theme
Autonomy support and satisfaction	Theme 1: My say, my way: how having choices means doing what I like
Competence support and satisfaction	Theme 2: Optimal challenge for optimal participation
Relatedness support and satisfaction	Theme 3: Comfort, cooperation, and confidence: when it's just girls it's just fun
Outcomes of motivation	Theme 4: New skills, new friends, new attitudes: How I learned to be healthy in PE
Positive outcome: PA behaviour	Subtheme 4a - Let's move it: from PE to the real world
Positive outcome: affect	Subtheme 4b - From drab to fab: working out doesn't have to be boring
Positive outcome: cognition	Subtheme 4c - Healthy bodies, healthy minds: I actually learned something in PE
Positive outcome: well-being	Subtheme 4d - Get up and go! PE makes me excited and energized

SDT Construct: Autonomy Support and Satisfaction

According to SDT, students are active learners in their classrooms and require supportive resources from their teacher and class environment to nurture their psychological needs for autonomy, competence, and relatedness (Reeve, 2006). An autonomy supportive teacher can directly nurture students' needs and indirectly foster intrinsic motivation by offering course content that students' enjoy. Autonomy support involves enhancing students' freedom to choose their behaviour in the classroom. This can be accomplished by taking students' preferences, interests, choices, sense of challenge, and competencies into account when planning a PE course (Reeve, 2006). Reeve (2006) suggested that a student's need for autonomy is satisfied when she feels in control of her behaviour,

accomplished by having choice in the PE context. The following theme explores how the teacher supported the participants' need for autonomy and how this support made them feel.

Theme 1: My Say, my Way: How Having Choices Means Doing What I Like

The participants' comments about choice resembled aspects of autonomy satisfaction. They discussed in the focus groups and wrote in their journals how their teacher allowed them to have input into the class (autonomy support) and how these different choices over the term made the class enjoyable (autonomy satisfaction). Theme one highlights the different choices participants made throughout the semester. First the participants chose to enrol in Girls Getting Active (GGA), and then had input into the course activities. Other opportunities for choice included selecting their partners during group work, specific PE attire with specific guidelines, and the type of music to be played in class. Finally the participants also had some choice in terms of assessment. For example, the participants had opportunities for self-assessment. According to the participants, having these choices led to a motivating and enjoyable experience in GGA.

The first choice most participants had was choosing to enrol in GGA, as it was an elective PE course. The participants discussed how PE was mandatory in grades 9 and 10, but it was optional in grades 11 and 12. They felt GGA was a good alternative to regular co-ed PE for grades 10-12. The following conversation between three participants in the first focus group (FG1) reflected this element of choice.

> *In grade 9 you have to do co-ed, but not now because of this new class. But after 10, grades 11 and 12 you can choose and it's just a really nice alternative.*
> *There's a co-ed class up to grade 12.*
> *But you get to choose because it's an elective. (FG1)*

The teacher, Ms. Smith[2], encouraged student choice in several ways throughout the term. According to the participants and content analysis of a survey document, Ms. Smith actively sought student input into the course content. Ms. Smith gave each student a survey at the beginning of the term, from which they could choose what activities they wanted to do throughout the semester. A space was provided for students to add any additional activities not included on the sheet. There was also space on the survey for the students to list their top three motivating songs. As described below, Ms. Smith gathered the surveys and planned the course, including activities and music, according to the results of the survey.

> *In the beginning of the course Ms. Smith hands out sheets that had the selection [of possible course activities] and you each choose a certain amount from each, from the dance unit you chose some out, the indoor unit you choose some out, and then she puts them all together and she chooses the highest. (FG1)*
>
> *Because if the teacher picks for us it may not be what we want. And then after we pick our courses she has a spot where we got to put songs we like, so she actually made a CD just for our class. So it's really personalized. (FG1)*

The participants expressed during the focus groups and personal journal entries (JE) how they enjoyed being able to choose their activities because it meant that they generally were able to do activities they liked. Participating in activities they liked, in turn, motivated them because it made the class more fun.

> *The other class we didn't really have any choice in what we were doing, it was just like 'we're doing this now', and now we do and it's more fun when you get a say. (FG4)*
>
> *Input in what we do is one of the best parts of this class. Because of our input we can build a class filled with activities we enjoy... Since I get to pick what I want to do in this class I tend to look forward to my A block more than any other. Because of this I'm much more motivated in this class than my other 2 classes (I have one spare). (JE3)*

Ms. Smith was also autonomy supportive by introducing her students to unique and innovative activities to spark their interest. She listened to her students, allowed them input, and then created

[2] pseudonym

lessons that would appeal to her students. Using student input encouraged the participants to feel in control over their PE experience and also exposed them to a wide variety of activities. The participants expressed how the variety and the unique experiences made the class enjoyable.

> *It's a fun class! Ms. Smith always thinks of new ways to have fun and lets us have a lot of freedom in what we choose to do to be active! (JE2)*

> *I like [the class], it's like you get to try a bunch of new things and like really awesome people come in, like we had kick boxing and gymnastics, we had field trips to the gymnastics arena and got to jump in a foam pit (FG2)*

> *Having an input motivates me because I can look forward to doing the activities because I chose them, which means that I like the activity. Also, having the other girls' input is nice to know too, because I get to try things that I haven't tried before, or that I never thought of trying. (JE3)*

Participants could also make other choices, including PE attire and creating their own dances and games. The course outline stated that during active classes, participants had to wear "lace-up athletic shoes and a comfortable, active outfit." Students could choose their attire as long as it fit those guidelines. The teacher also incorporated activities into her lesson that provided opportunities for participants to be creative and design dances, as was described in the following participant observation (OB) field note.

> *It is unique that high school students are given the opportunity to create their own dance routines and perform. They were also allowed to choose their own costumes and music. (OB14)*

Assessment during the class also was quite autonomous. The students were aware of the marking criteria, that they were assessed on their effort, attitude, and participation, as evident in their course outline. How a student chose to behave, such as how much effort they exerted during the class, influenced their grade in the course. This was evident during the participant observation sessions, and during the focus groups the participants discussed how they understood their grades were based on the level of effort they chose to exert during the lesson.

> *There's this thing called BEAP marks, like your participation marks, like your attitude and if you come in strip. (FG1)*

The BEAP scores are written in supportive language, a 5/5 reads something like "I deserve a 5 today because...I came early to class, was changed, and help set up the equipment..." (OB7)

Today the substitute teacher told the students that they would give themselves their BEAP mark for the lesson. So the students didn't choose how to be assessed, but they got to choose what mark to give themselves. (OB9)

Other opportunities for choice also arose during the term. The teacher allowed participants to frequently choose their partners during group work. The students felt that choosing their groups also made the class more fun because the participants could be with their friends.

Sometimes you have the option [to do individual activities], like with the dance. Yesterday a couple kids did it by themselves, but most people are going to group up anyway. It's pretty much an option, she notices that we're going to group up if we have the option (FG5)

As described above, the participants' felt having choices made the class more fun and was motivating because they could often do what they liked. Deci and Ryan (1985) suggested that participating because the activity is fun parallels feeling intrinsically motivated, as intrinsic motivation means engaging in behaviours out of sheer enjoyment. However there were a few instances where participants' did not get their choice, resulting in decreased motivation. For example, a small number of participants did not choose to enrol in GGA and were placed in the class by the school administration because it was the only class that fit their schedule. Their comments reflected this lack of choice.

I just ended up in [GGA]. I didn't choose it.
Moderator: who put you in it? The school? The principal?
Yah (FG3)

[I had] no other choice. Everything else was full. (FG4)

Some participants also felt that their preferred activities were often not selected. However because they did get their choice on occasion, this seemed to compensate for the occasions where they did not get their choice. Often the participants who were placed in GGA felt their choice of activities were not selected.

[Having choice] doesn't really affect how much I want to participate in GGA. I never get my choice of activity. It pisses me off slightly and makes me not want to [participate] but I usually do anyway. I would rather do more active, hard-core sports (basketball, soccer). (JE3)

It's easy to get motivated over something you enjoy rather than something you don't. Sometimes my choice doesn't get chosen and I just put up with it. I'm generally just bored then. (JE3)

The majority of the evidence in this case study points to the need for autonomy being generally satisfied. Choice was a major contributor to meeting this need. Table 2 provides additional support for Theme 1.

Table 2

Additional Evidence Supporting Theme 1

Focus Group	Personal Journal	Observation
We had at the beginning of the semester we had a sheet of paper, there was a bunch of activities, like huge lists, and we chose off like ten, like a couple from every category and if it wasn't written on the page we got to write down our own(FG3) Instead of having games that most of the people don't like, it's mostly the majority of the class likes it, so mostly everyone will have fun (FG4) I love the completely random field trips, like one minute we're going to gymnastics, the next we're kayaking, the next we're kicking the living daylights out of a punching bag (FG5)	I want to do it more because I get to say what activities I don't want to do. For example I like four corner but I don't like games outside in the rain. (JE3) I like that in GGA we get to choose a lot of what we do, even though sometimes we do things I don't especially like. If that's what everyone else likes then I'm happy to try. (JE2) Because if I like what I'm doing I'll participate better and stronger than if I hate or dislike what I'm doing. [When I don't get my choice I'm not] mad but kind of 'bleh'. I knew I wouldn't have fun so I didn't do much. (JE3)	Participants chose badminton in the survey of activities at the start of the term. But Ms. Smith selected the games to play during the badminton unit. Students also get to choose what to do during warm up and who to pair up with when it is their day to lead the class in a warm up. (OB1) In the warm up Ms. Smith said "ok, get in groups of five or six and line up on the end line." There were two groups with seven and one group with four. Ms. Smith allowed them to stay like that and didn't separate the groups. (OB11)

It's such a variety, you get like introduced to new stuff, like the dancing and the gymnastics Like Tae-Kwon-Do Yeah, like at Fun Fitness, it was like weird It was fun, it was different (FG3) I like it because we always get to do new stuff and different things, like other PE classes are really straightforward and you have to do the same things over and over again, but Ms. Smith makes it like interesting and she has fun games and stuff (FG2) It's the opposite [from regular PE]. Double blocks used to be the worst day and now it's the best day because of what she's done with it. Instead of making us run down the road, we're going to go somewhere and try something that we don't do everyday (FG1)	One thing I like about this class is how Ms. Smith lets us vote on games we like at the beginning of the year. This system makes sure everyone gets to play games they like, and games you don't like you only have to play for a week or two. (JE2)	Participants can choose what to wear, but must be active wear. When students forget their gym strip they know it means completing an assignment in the library. (OB3)

SDT Construct: Competence Support and Satisfaction

Competence involves a feeling of self-efficacy, that one is confident in their ability to complete a task (Deci & Ryan, 1985). These authors suggested feelings of competence can be supported and satisfied in a context that offers optimal challenge and opportunities for improvement. Optimal challenge is met when one perceives her skill level to be equal to the skill level necessary to accomplish the activity (Mandigo, Holt, Anderson, & Sheppard, 2008). Through observing the class activities and from the students' comments, it was evident that the participants' need for competence was supported by their teacher.

Theme 2: Optimal Challenge for Optimal Participation

Theme Two describes how the participants' need for competence was supported by their teacher through a class environment that provided optimal challenges. Ms. Smith instilled a sense of optimal challenge by planning inclusive lessons where students could learn new skills and by offering a class climate that was not too competitive, but rather focused on effort and participation. She also was verbally encouraging and participated with her students. The participants responded with positive comments in regards to the class environment and discussed how they felt motivated to participate.

Ms. Smith fostered competence by planning lessons full of inclusive games that were new to all students. One of the many examples occurred during the soccer unit. Ms. Smith planned a lesson that used skills all students could do to teach the concept of moving to an open space.

> *The games were meant to encourage everyone to participate equally because they had to pass the ball down the field and could not run with it, putting players on a more level playing field. (OB3)*

Many activities were new to all students which meant less comparison between classmates because they were all doing something for the first time. Two participants discussed how Ms. Smith planned activities that were unique which made them more fun.

> *Ms. Smith always comes up with some different way of doing the activities. Ways you've never really seen before. It's not passing a ball back and forth, it's passing a ball back and forth blindfolded while spinning backwards...*
> *The [activities are] really goofy. She'll take a game usually you wouldn't think is goofy, that's straightforward and she'll twist it in a way that's really weird and it's a lot more fun that way (FG5)*

Another way the teacher created inclusive lessons was to occasionally divide the class into pre-determined teams. When activities called for teams even in skill and number of players, she divided the teams fairly to allow all students a chance to get involved. She also occasionally created groups to encourage students to work with other classmates.

> *Sometimes she'll make up the groups in soccer and stuff to mix it up*
> *It makes it fair (FG2)*

The participants in the case study described feelings of competence and improved participation because the class was the right level of difficulty. Most participants in GGA found the class challenging without being too competitive or too easy. The following comments reflected this sentiment.

> *[GGA is] just more relaxed in general. So it's easier to have fun. It's not so serious like 'let's win!' (FG5)*

> *The [games] are not challenging but they're fun. Well some are challenging, it's like a good combination (FG3)*

Participants with less perceived competence enjoyed the relaxed atmosphere. These participants expressed how they felt more confident in their abilities and participated more because there was less pressure to be the best and more focus on overall effort and improvement.

> *Normally like playing soccer, I hate soccer because I can't do anything, but in this class when we play it doesn't feel like there's any pressure, at all. (FG1)*

Other participants who felt they were already quite competent enjoyed having time to just use their skills and play for fun. They also felt the class offered the right level of challenge which was motivated them to try harder.

> *This week in GGA I was excited because we started soccer, and I've played soccer for 11 years. So during the soccer unit I get to use my skills. (JE2)*

A sense of competence was also created through the teacher's assessment. Grades were not based solely on skill testing or skill comparison between classmates, but rather on individual effort and participation. The participants appreciated this and it motivated them to put in greater effort, as described in the following focus group conversation.

> *In the other classes they usually mark you based on well this person's the best so you're compared to them, but I always try and do my best, and I never did that great. Usually I end up with a C or something, but in this class...You're marked more individually so everybody works their hardest.*

> *This is the first year ever since I was in school that I've ever got an A in PE, so I'm obviously doing pretty well*

It makes you want to try harder because they like appreciate you and you feel like you're appreciated (FG1)

Ms. Smith's involvement in the class through demonstrating skills and participating with her students also supported competence. The students responded well to Ms. Smith's participation and revealed how seeing her do something made the participants less afraid to try something new. They also valued that she was active with them, and this motivated them to try a bit harder. The effort Ms. Smith put into the class was noticed and appreciated by her students.

I think she puts a lot of effort in, a lot.

She doesn't just stand there, she participates with us. She doesn't stand there marking us, just judging us. (FG1)

My last reason why my motivation in this class is good is because of Ms. Smith. She's really fun! She doesn't mind making fun or herself by showing us how to speed walk! (JE1)

Ms. Smith also got involved by providing verbal encouragement. The participants discussed how Ms. Smith cheered them on during class activities, which boosted the girls' confidence and also motivated them to participate.

If she thinks I can do it I feel better about it and try a bit harder. She's a great teacher too so I want her to be happy about what I can do. (JE7)

The teacher's encouragement was also evident during observation sessions. She generally encouraged everyone, and occasionally singled out a few students who were participating with full effort.

Ms. Smith cheered on the groups today. She mentioned to everyone how "it is so hard to get up and dance in front of your peers, much harder than in front of strangers." She also singled out one group who created a more complicated dance "great job! I can't believe you did a whole song!" (OB14)

Despite Ms. Smith's effort to build inclusive lessons, a few participants felt the class was not optimally challenging. They felt the class was too easy and would have preferred activities where they could use and improve their skills by competing against others of the same or better calibre. Often the

same few girls who did not choose to enrol in GGA wanted more competition. This small group of participants (n=5) were highly competitive and had more advanced skills that their classmates, particularly in team sports. They mentioned how they played after school sports and enjoyed the challenge of participating at a high level. A few of these young women were placed into the class by the school administration, while the others enrolled in GGA because their friends were also enrolled. For these participants, the lack of optimal challenge affected their motivation and enjoyment of GGA. Some of the more competitive participants also expressed that they missed having boys in the class, because they enjoyed competing against them.

> *I get along with guys better, so in that way, it makes it more interesting when there are guys in the class. (FG4)*

> *I prefer regular PE because I like hard core sports. This class is too easy. (JE1)*

> *Those previous classes were fun because they were more competitive. Although this class may not be that competitive, it is still fun that doing some of the funny activities motivate me. I don't find as much motivation in this class though because I find it more relaxed and I need energy to be motivated. I guess my motivation in this class changed because it is too relaxed. (JE1)*

In the few instances where some of the more competitive girls missed having boys in the class, having their friends to participate with seemed to balance the cases where some participants wanted boys or more skilled classmates to compete against.

> *I've always been an active girl so PE is always something I've enjoyed... I play well with the guys, like I can keep up to them, so that was always fun because it's like a challenge. Here in GGA I find it not very hard at all to be honest, I see it as a class for girls who don't want to go on a run and harder things like that, like a slack class...I didn't choose to be in this class I just got put in. BUT I have all four of my best friends in this class so it's a blast and all the games are really fun. (JE1)*

Aside from these few participants, the majority expressed feelings of competence and optimal challenge because of the non-judgemental and inclusive environment. This had positive effects on their skill improvement and participation in the class. Table 3 supports Theme 2 with additional evidence.

Table 3

Additional evidence supporting Theme 2

Focus Group	Personal Journal	Observation
Plus even if you don't like the sport, in some way Ms. Smith makes it fun and you actually enjoy it...I don't enjoy soccer but this one was fun. Just that we actually had games this time instead of just running around (FG5) What we figure the main purpose of this course is not to be good at a sport, succeed at a sport, kick off all your opponent, it's more about introducing different ways of looking at sports and physical activity, introducing things you might enjoy. (FG5) For me it was the kickboxing, my dad has always been big into the random fighting thing, and I noticed halfway through the instruction that I knew what she was talking about. It just sort of clicked in my head and it was so much more excitement in it. It was just like 'yeah I can do this!' (FG5)	I love GGA, we don't play football and other sports for 3 weeks straight. We play those games for a few days then we move onto other sports. All of the girls share the equipment (most of the time!) and we all get along (bit of clickyness some days, but that always happens with a large group of girls). But for the most part this class is full of happy people! In this class we play games because they're fun, not because we need to win and rub it in the other teams' faces. (JE1) Grade eight and nine were fun, but I hated how competitive it was just for a simple game like dodge ball. My motivation to go to class was so I don't fail and have to repeat it, and seeing my friends. The PE in eight and nine was alright, not as fun as GGA though. With the PE class I'm in now it's so fun, and I don't have to worry about embarrassing my self in front of people, because this class is full of my friends. (JE1) GGA is way better [than previous PE classes], everyone participates and no ones angry if their team looses. It's just a whole lot funner that way. (JE1) This week in GGA I felt like it was really boring. I'm good in soccer and playing games like that just doesn't excite me, because I play more intensely three times a week. I liked that we were doing soccer though. (JE2)	An interesting way she motivated the girls today in one particular activity was to say "I'm doubting our ability to do the next activity...women tend to have less upper body strength." This bit of challenge encouraged the girls to really try hard. Most of the groups did succeed, and they really wanted Ms. Smith to see them accomplish this task. She responded by praising them for accomplishing it. "Great job everyone." (OB10) At first only a handful of students were motivated to play the modified soccer game. The class was divided into four teams with two games going at once. Some students did not seem motivated to participate, they hung out in one spot for most of the game and would only try if the ball came near them. The game that Ms. Smith joined went at a much faster pace then the other game. Eventually Ms. Smith noticed this and left that game to encourage the other game to move faster. The girls who seemed the most skilled at soccer tried really hard, but a few less skilled girls did also try hard. By the end of the lesson the majority of the class seemed motivated to play. (OB3)

I like competitive more than this kind of thing, but it hasn't altered how much I participate, I just would prefer more competitive, rough things Moderator: is there an option for you to do more competitive things? But it was just that they never put PE into my timeline, and by the time I had figured that out and had dealt with it, this was the only one [PE class] left (FG3)	In physical sports I can channel all my pent up frustration into pushing myself physically. When it's not competitive, I have the anticipation of releasing negative energy, but then it doesn't work very well because non competitive sports aren't very physically demanding. (JE7) I didn't enjoy other PE classes as much as GGA because it's not so competitive and you can just have fun. The games are fun that we play in GGA and I really didn't like going on runs in regular PE. Also in GGA we get to go on awesome trips every Wednesday morning. Ex. mini golfing and kayaking. I didn't have much motivation in regular PE as I do in GGA. (JE1)	Ms. Smith praised the teams that won or scored during the basketball game. "Purple scored" not who scored individually. Praised both teams for trying hard "both teams have scored so many baskets it's hard to tell who won, next basket wins" (OB6) Participants were motivated to do the activities. They did not complain about anything. The jumped right in and participated fully in each game. (OB6)

SDT Construct: Relatedness Support and Satisfaction

According to SDT, the need for relatedness is satisfied when one feels a sense of belonging or social attachment (Deci & Ryan, 1985). Reeve (2006) suggested that the teacher can support relatedness by creating a learning environment that is welcoming, comfortable, and by being a positive example to her students. It was clear that the participants' need for relatedness was supported by Ms. Smith.

Theme 3: Comfort, Cooperation, and Confidence: When It's Just Girls It's Just Fun

The participants' comments reflected a sense of belonging in their PE class, indicating fulfillment of relatedness. Several factors contributed to this need satisfaction, including belonging to an exclusive, all girls' class, having an understanding teacher, and participating in group activities with friends.

Having a girls' only class allowed the participants to feel comfortable and less self-conscious when participating in physical activity. Some girls felt the female only environment was motivating and they could participate without fear of being judged.

> *When you're in a class with boys they just kind of pass to each other and don't really think about the rest of the team, in a girls' class you're actually a team and you actually play together and pass to each other. (FG2)*

> *I don't feel pressure since it's an all girls PE and there are no guys trying to show off or something like that. Now I feel comfortable participating in PE. (JE1)*

The participants' sense of belonging was supported by the effort Ms. Smith put into making the class feel special. GGA felt exclusive because the girls were allowed privileges, including weekly field trips, guest instructors, special equipment, and longer time to change out of their PE strip and get ready for their next class. The following focus group conversation described how the girls felt about Ms. Smith's effort to make GGA special.

> *She bought ribbons and she buys like extra, what the school doesn't provide she buys extra just for GGA... She buys blindfolds for partner activities*
> *She bought a parachute*
> *And she does buy like stuff for our class that doesn't get put in with the regular PE class*
> *We had a bake sale because she wants to make us all T-shirts...*
> *I don't think this class would be half as fun if she wasn't our teacher (FG1)*

Aside from the all girls' environment and exclusive aspects of the course, Ms. Smith supported relatedness by listening and understanding their needs and concerns. The participants felt she understood them, appreciated them, and felt they belonged in the class. It was apparent from listening to the girls that because Ms. Smith went out of her way to care about them and the class, the girls could relate to her, which in turn led to positive PE experiences.

> *Ms. Smith is hilarious and she always tries to make it so you can relate to what's going on, relate to her as well (FG5)*

It makes you want to try harder because [she] like appreciates you and you feel like you're appreciated...She notices who gets along so she pairs people according to working together and attitudes and all that, so it makes participating easier and you feel really comfortable. (FG1)

Ms. Smith fostered feelings of relatedness by planning mainly group activities, including weekly team building lessons, where students could be with their friends and make new friends. The participants enjoyed making up their own groups without restrictions in terms of the number of members in each group. This ensured no one was left out of the group.

She always makes it fair, it's usually like us as a group because we're mostly friends, and she'll say that amount of people, like if there's 4 of us there she'll never say like make a group of 3 people.

Or she'll make exceptions if there's like an uneven number, she's like 'that's fine', you'll just have to do the run twice or something (FG3)

The participants enjoyed having opportunities to work with their friends. Engaging in group activities with their friends and relating to their classmates motivated them to participate willingly in class. The girls mentioned how being with their friends allowed them to participate without fear of being judged, which made them feel more comfortable and confident.

My motivation to participate in GGA is so much higher, it is hard to calculate. I enjoy every class and can't wait to come. There can be easy class discussions where everyone feels safe to express their feelings because we will have almost all experienced similar things. Being able to relate to each other changes the atmosphere completely. (JE1)

I always find that I'm more motivated with my friends. I can run faster. (FG5)

There were a few examples where some girls occasionally did not feel connected to some of their classmates. A few girls described that they did not get along with everyone in the class. They tended to avoid interacting with some other girls, but having at least one friend in their group made up for this lack of connection.

There are students in this class I don't get along with, I can cooperate with them, but sometimes it becomes difficult. It does make the class less enjoyable because sometimes they don't act like very nice people. (JE5)

The participants expressed feelings consistent with the relatedness construct. Belonging to an all girls' class, participating with friends, and making new friends was motivating and fun for the participants. Theme 3 is supported further with evidence in table 4.

Table 4

Additional Evidence Supporting Theme 3

Focus Groups	Journal Entries	Participant Observations
Like the other day my shoes were soaking wet from the day before and I couldn't put them on. And I found out my feet were the same size as Ms. Smith's so she let me borrow her shoes! It was really nice. (FG1) Usually she'll say groups of four, groups of five, just find you're group If you need big teams and you need to have even groups and some [girls] are better than others she makes the groups. But like in dance she says pick a partner And she makes sure you're in a group with one of your friends so you're not all alone (FG2) It's easier to be yourself in this class than in like regular PE because you don't have to worry about guys like picking on you and stuff, when it's just girls it's just fun (FG2) I like the class, I like that it's meant for girls, that we do stuff that girls tend to like more.	I felt better about the unit [soccer] because Ms. Smith makes soccer fun and tries to put you in a team with a friend! (JE3) I get along with every single individual in this class. It makes me want to get to know the people I don't know that well. It makes me want to come to class more and enjoy activities (JE5) The atmosphere in GGA is very supportive, non-judgemental, and easy going. I really like it that we don't feel pressure to do more than we are comfortable with and we don't feel bad if someone is better at something. (JE7)	Today the students had gym in the theatre, where it was quiet and no disruptions of students walking in and out of the gym. It felt like a special place where they could do their exercise video without any outsiders watching. (OB10) Getting to take a city bus to the gymnastics club for a private lesson with your PE class was pretty unique. A special privilege for being in GGA. (OB12)

It makes you feel a little less self-conscious if there's not guys in the class because then you don't have to worry about what they see or I don't know, doing whatever they do, watching, whistling in some cases. But it's just good because, yeah, you don't have to be self conscious and you can just focus on what you're doing (FG4)

Pretty much when you're an all girl group you have time to get closer and there's someone you can relate to so it's not usually as bad. (FG5)

We all look goofy at the same time anyways, so like when we were doing yoga and doing the cat stretch and like the workers would burst into the room and we're all stretching like kitties. We all looked goofy so we couldn't really judge. (FG5)

I like group [work], it's like funner (FG3)

There's a couple of people that annoy me in the class, but I try to not make it seem like I'm not annoyed, I kind of like don't bother with them if it's the same people, or I go to a different group or something (FG5)

It's easier to be around people you are comfortable with and know. Fun to be with friends makes it more motivating to go to class. A lot of people skip PE but when most of your friends are in it they encourage you to go. (JE7)

There are only a few students I don't feel comfortable working with. It affects my enjoyment a lot. If I perhaps get paired up with any of those students I will either not try my best or just not do the activity or not show up. So it has a big effect on my enjoyment. (JE5)

According to SDT, need fulfillment can result in intrinsic motivation (Deci & Ryan, 1985). The focus group discussions, journal entries, and participant observations sessions revealed qualitative evidence that the teacher's supportive behaviours and effort into the class was appreciated by the participants. The course content supported the students' needs for autonomy, competence, and relatedness by offering activities the participants' selected, were capable of doing, and opportunities to work in groups. The participants' needs were also supported by the caring and encouraging learning

environment. The participants' sentiments reflected need satisfaction, with a few exceptions. Many also expressed feeling motivated to participate in GGA.

SDT Construct: Outcomes of Motivation

Deci and Ryan (1985) suggested that intrinsic motivation leads to desirable outcomes, including behaviour. SDT proposes that need satisfaction has indirect effects on behavioural outcomes in PE contexts, including physical activity behaviour, affect, cognition, and well-being (Standage, Gillison, et al., 2007). The participants' in this case study commented on how they felt motivated in GGA, a mixture of intrinsic ("its fun") and extrinsic ("I want to get a good mark") self-determined motivation. According to the young women in the study, being motivated to participate in GGA resulted in positive outcomes consistent with SDT. Theme 4 is organized into four sub-themes, each reflecting outcomes indicated by SDT.

Theme 4: New Skills, New Friends, New Attitudes: How I Learned to be Healthy in PE

Subtheme 4a - Let's move it: from PE to the real world.

Ryan and Deci (1985) argued that if needs are satisfied in PE, participants will engage in physical activity behaviour. This was congruent with this case study's findings. Subtheme 4a is framed by the behaviour outcome of SDT. Some participants felt more active and some who were already quite active felt they had remained active. Numerous participants expressed that exposure to activities in PE encouraged them to participate outside of school.

Participants who expressed that they used to avoid PE were now more active in GGA. Some were more active because they now attended PE class. Others felt that the class allowed them opportunities to be active during school, which was particularly important for those who felt they had little time to be active after school due to a part time job or home work. The following comments reflect how GGA has affected their physical activity levels.

Before GGA I used to skip out on PE so I had almost no physical activity at all (FG5)

I think [my PA level will] go down just because when you're in PE you do PE every day, and then when you're not in PE it's harder because you have lots of stuff to do out of school to actually find time to go and do something active (FG4)

Girls who were already active continued to be active during the class and felt like they got a good work out. They felt they were exposed to new and different activities.

I actually noticed something this year. Mostly in physical stuff I wouldn't really feel my muscles working. But in this class I'll like actually come to school all sore and feel like I actually worked out and stuff. So it was a great change (FG5)

I've always been an active person, so I'm active in different ways now, but I've always been active and enjoy it (FG5)

The participants were also introduced them to activities they could do outside of school. Not only were they introduced to new activities, some participants expressed they started to engage in some of the activities outside of school. They indicated that they hoped to continue to participate in these activities after the term was over.

I started [GGA] last year, and ever since I started that I've been doing stuff outside of school. I've been trying different styles of yoga and going on walks regularly and stuff like that. (FG1)

After we went to Fun Fitness I started going there with my friend from the class, and we started working out more because of it. (FG4)

The participants' felt that GGA provided them with opportunities to be active in class, by actually getting to exercise during school hours, which was beneficial to those girls who perceived they had no time to be active after school. The participants also felt capable to do some of the class activities outside of school, many indicating that they would try to be active on their own. Table 5 provides additional support for Subtheme 4a.

Table 5

Additional Evidence Supporting Subtheme 4a

Focus Groups	Personal Journals	Participant Observation
I wouldn't be in PE right now because it's an elective, you don't actually have to do it but I am doing it because I want to. You have to have a certain number of hours in physical education to graduate. [GGA] is better than being by yourself jogging everyday, you're having so much fun everyday (FG1) Yeah the work out is great (FG5) I was actually wanting to try it on my own (FG3) See for me, I live by every stretch of the imagination in no man's land, in the middle of nowhere. So actual team sports programs are really hard for me to get too, most of the time I can't show up for them. So for me this is not so much enjoying physical activity, it's finding different ways to stay fit with what I have. Things like the yoga and Pilates that Ms Smith kind of introduced us to, you can do around the house, just easier to get a hold of. Me: so you think you'll do those when the class is done? Yeah (FG5) I would sit on the couch and watch Sponge Bob Square Pants. I've got really strong thumbs from all that clicking. Now I'm taking yoga on Mondays, so that's fun (FG5)	Yes [my motivation changed]. I didn't want to do anything at the beginning, but now I want to try different things. (JE6) The personal fitness aspect is a huge appeal to me and makes me want to be more active. (JE1)	Physical activity behaviour ranged from low to vigorous intensity, depending on the activity. (OB16) The participants were engaged in physical activity for the majority of the gymnastics lesson. One girl was lying on the floor by the end of class and said "I'm so tired!" It was evident she had worked hard. (OB12) Moderate levels of physical activity. The participants were moving but stopping often to learn new choreography. (OB13)

Subtheme 4b - From drab to fab: working out doesn't have to be boring.

In addition to the physical activity behaviour outcome, a change in the participants' affect was also discussed. The girls felt that participating in GGA positively changed their attitudes towards physical activity.

Many participants explained that they used to feel PE and physical activity was something negative, and now felt positive about both. Participants indicated that their positive attitudes were caused by elements in the course content and in the learning environment, such as having enjoyable alternatives to running.

> *Like before it kind of seemed like 'agh I have to go for a run' and now I always go home all excited and I'm like dancing in the living room. I am telling everyone what we did that week and I'm like yelling at my mom and everyone about everything we did like 'yah! We're going to gymnastics today!' Everyone knows. (FG1)*

> *My motivation and attitude towards being physically active has changed. I see being active as having fun instead of a chore, all the field trips helped me in finding fun ways to be active. (JE6)*

Girls who previously enjoyed PE continued to have positive attitudes during GGA. All but one participant in the case study expressed they enjoyed the class and had fun engaging in physical activity.

> *The participants seemed to really enjoy the class. There was a lot of laughing, screaming, as they were trying to lift their teammates through the spider web and in the pyramid activity (OB16)*

> *In the co-ed class we had a run day, so once a week we had to run, and I didn't look forward to that day at all, but now we don't have a day that we don't look forward to (FG1)*

Overall most participants felt that being in GGA changed their attitudes towards physical activity from a negative perspective to one that viewed being active as something they could enjoy. Subtheme 4b was further supported with data in table 6.

Table 6

Additional Evidence Supporting Subtheme 4b

Focus Groups	Personal Journals	Participant Observations
Comparing it to the other PE, it's like a relief that you're not in it (FG3) Yeah, like doing the dance unit showed me that working out doesn't have to be boring stuff, it can actually be fun (FG4)	Yes it [my motivation] did change, I like [physical activity] more and more every class. I like it when we played games I enjoy. (JE6) I have always enjoyed being physically active, this course for me was just another way at looking at PE. (JE6) My attitude did change. I now actually like working out now. I now work out more with my friends. (JE6)	The participants were enjoying this class. They were laughing, screaming a bit, and encouraging each other. Some comments I heard included "this is the best class ever!" The only complaint I heard was from one girl who said "I'm tired. When is it my turn to kick?" She was tired of holding the blocker for her partner and wanted a chance to try the kick. The participants were excited to partake in the activities, focused on what was being taught, and were laughing and smiling. You could tell that the girls who were praised by the instructor really enjoyed standing out. (OB5)

Subtheme 4c - Healthy bodies, healthy minds: I actually learned something in PE.

A third outcome identified by Deci and Ryan (1985) is cognition. The authors suggested that meaningful learning involves being intrinsically motivated to learn, often arising out of putting the material to use in a way that is interesting and of personal value to the students, rather than just being examined. The participants' comments were consistent with this outcome, as they felt they had experienced meaningful learning over the term. The participants commented on how they had learned new social skills and physical skills, and information about their bodies and being healthy.

Group work and weekly team building lessons allowed many participants to practice how to cooperate with and trust their classmates. Many expressed that learning social skills was beneficial as it allowed them to make new friends.

> *Like I learned skills that don't necessarily have to do with gym, but like skills learned outside...like talking to people you don't know (FG2)*

I've learned to trust my classmates more with the Monday team building (JE5)

New skills and new activities were also learned. Many participants discussed how they had improved their skills in certain sports. Most participants felt that they had learned skills they could take with them after the semester is over.

I learned a lot of things this term. One thing I learned was Pilates, I've never done them before yesterday. I also learned the basics of soccer and some rules in badminton that I had forgotten. (JE4)

In WAL this year I have actually improved my indoor 4 corner soccer skills. I felt proud of myself because now I know I can play it and I enjoy it. (JE5)

Others stated that they had learned more about their bodies, such as learning some anatomy and general health knowledge. Many participants commented that they now knew how to be healthy, which some expressed they had put into practice.

Today I learned that yoga is very relaxing, and calms you down. I will have to try it on my own. I've also learned what joints and muscles are stretched while doing certain stretches. (JE4)

For the warm ups we had to make up we had a book with all the muscles and stuff and we had to label them and find out how they work, like what we're stretching (FG3)

I learned more about balance. I will admit I like burgers, I like chocolate, but it's more of a balance. If I eat this I need to do some exercise later. I know that and now I have easier access. (FG5)

Overall, the participants felt that they had learned new skills, from communication to specific sport skills, and learned more about being healthy. This meaningful learning is further supported in Table 7.

Table 7

Additional Evidence Supporting Subtheme 4c

Focus Groups	Personal Journals	Participant Observations
[I've learned] a bit, like I like that you can do yoga and it's still physical activity and stuff, I never would have considered doing yoga before (FG2) Like I didn't learn about different foods in the class, but because the class is all about active and being healthy, I tried to learn about it. (FG4) I think at the end of the body image, we had a sheet that we did about body image, and the games she makes us create with the skills we learned, she makes us do things like that. We have to create our own dance for this unit, which will be like our project. (FG1) Social skills. I've become friends with girls I probably would never have talked to, not being in this class (FG5)	I try harder because I enjoy it. For example four corner, it's fun and I'm good at it so I try harder and have more fun (JE7) I am improving and learning, and I find I like everything we do even if I thought I didn't before. I really want to participate so that I have fun, improve, get healthier, and do well in the class. (JE1) I've improved in participating in sports, and I'm happy that I did because it really is fun. (JE5) I have learned there are many different kinds of physical activity, there's different things you can do. Also, how to work more as a team. (JE4) In GGA this term I learned how to make a game and use creativity to make it fun. I've learned a lot of cool little games, especially on Monday, teambuilding. (JE4) Well I've been able to find many awesome ways to have a healthier lifestyle. (JE5) Well I used to HATE soccer, but now that I played it and I can actually get the ball I enjoy it more. (JE5)	The participants were very focused today as they were trying to get all the steps of their dance. Observers were also focused during the performances as they had to do peer assessment. (OB14)

Subtheme 4d - Get up and go! PE makes me excited and energized.

Deci and Ryan (1985) argued that outcomes of intrinsic motivation also include broader areas of development, such as a sense of psychological well-being. The participants discussed how being a

member of this class affected their well-being. Their statements reflected a sense of overall well-being, as participating in GGA made them feel good. They also revealed how they felt energetic, happy, and more self-confident in GGA.

Participants mentioned that being physically active in class gave them energy that lasted throughout the day. If they were having a bad day, participating in GGA calmed them down by reducing their stress.

> *Or in the morning when you're all like dead, and we have to go do PE, and it kind of wakes you up and it's like 'yeah! We can take on the day' (FG2)*

> *If I have a really tired day, then we'll do it [GGA] and it'll like wake me up for the rest of the day, and then next semester if I have a tired day I'll just be tired all day because I don't have anything active going on, just sitting in a desk (FG3)*

Many participants indicated that they felt happy during and after the class, and that they took this positive energy with them to other classes throughout the day.

> *I like going to the classes because it makes me feel happy and energized after (FG3)*

> *I'll be in like an upset mood before I come to the class and then like #1 and #3 over here, they just like brighten up my day when I see them. I feel like I'm in a better mood, that's why I like it the first day, the first block, because then I have the rest of the day and I'm all happy (FG5)*

Some participants felt better about themselves after taking GGA, whether it was from becoming more self-confident in their abilities or by losing weight and feeling healthier.

> *I lost of bit of weight. It made me feel good. (JE5)*

> *My confidence grew and my enjoyment of being physically active. I love this class and how it has made me feel, both physically and mentally. (JE6)*

The participants felt a sense of well-being from being a part of GGA. Some felt better about themselves and most felt they had more energy throughout the day. This subtheme is further supported by evidence in table 8.

Table 8

Additional Evidence Supporting Subtheme 4d

Focus Groups	Personal Journals	Participant Observations
I feel a lot healthier, like even outside of school I plan on doing more (FG1) [GGA is] my coffee basically, it gets me psyched up for the rest of the day, even if it's at the end of the day I feel much better when I go home (FG1) [GGA] made me realize quite a while ago that so long as I eat healthy and I'm active it doesn't matter what I look like at all (FG1) I feel I have more energy, um losing weight, I have more energy inside me now (FG2) You're not so afraid, you see that everyone is the same after being in classes with them, the team building and stuff. (FG2)	I've always looked forward to PE classes. It makes me feel like I have more energy throughout the day. (JE1) What motivates me is because I like to run around or do physical activity to wear off some of my energy or anger. (JE1)	For the most part the participants seem happy and positive during GGA. (OB9)

Chapter 5

Discussion

The purpose of this study was to examine the features of a new elective PE course that had successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Applying the constructs of Deci and Ryan's (1985) Self-Determination Theory (SDT), focus groups, personal journal entries, and participant observation sessions explored how the features of the course paralleled the antecedents of motivation identified in SDT and how those elements impacted the participants' perceptions of physical activity. The links between motivation and the outcomes of self-determination theory were also explored

Themes emerging from this study indicated that the students' needs were being met. The participants expressed having their teacher's support, choices, optimal challenges, and interaction with friends in class motivated them in PE. The girls' motivation to attend and participate in class allowed them enjoyable opportunities to be physically active and they learned different ways to be active outside of school. The features of this class also affected their well-being by improving their self-confidence and making them feel more energetic. This chapter will discuss each theme in relation to the constructs of SDT and conclude with future research recommendations and practical implications of the study for policy makers and teachers.

Theme 1: My Say, my Way: How Having Choices Means Doing What I Like

SDT construct: Autonomy support and satisfaction.

Theme 1-My Say, My Way: How Having Choices Means Doing What I Like provided insight into how the teacher in Girls Getting Active (GGA) was autonomy supportive, and how this satisfied the students' need for autonomy and fostered intrinsic motivation. Deci and Ryan (1985) proposed that an autonomy-supportive social environment, like a PE class, can satisfy individuals' needs for autonomy where one chooses their behaviour according to their preferences and interests. Autonomy-supportive

teachers allow students to work according to their own volition by encouraging them to make decisions and by providing informative feedback. They avoid controlling their students' behaviour through the use of external rewards, punishments, and pressure. According to Deci and Ryan (1985), teachers who create these environments, where students learn and explore without being controlled, can satisfy their students' need for autonomy, or volition, and foster intrinsic motivation.

The participants in GGA discussed how they had a range of choices. The first choice grade 11 and 12 students made was to enrol in GGA, as it was an elective class. Once enrolled in the class the teacher supported students' autonomy by using the participants' input to design the course content. The choice aspect of GGA paralleled the need for autonomy. The participants expressed they often had choices, such as choosing class activities, and they enjoyed this because it meant able to engage in activities they liked. One focus group participant commented how having input into course activities "makes it more about what kids want, the students in the class, than [what] the teacher or the board [wants]."

Research in SDT has examined the relationship between students' perceived autonomy support from their PE teacher, and the students' level of autonomy satisfaction. Standage, Duda, and Ntoumanis (2003) found that secondary school PE students' perceptions of an autonomy-supportive PE climate that was low in controlling features positively impacted the students' feelings of autonomy. Additional correlational research by Ntoumanis (2005), Standage & Gillison (2007), Ommundsen and Kvalo (2007), and Vierling et al. (2007), established that perceived autonomy support in PE predicted autonomy satisfaction. These same studies also concluded that there were positive relationships between autonomy satisfaction and intrinsic, or self-determined, motivation.

Theme 1 explored how having input was intrinsically motivating because it made the class enjoyable. Deci and Ryan (2000) stated that intrinsic motivation involves freely engaging in activities individuals find interesting, enjoyable, and new. The participants commented that they found the

activities interesting and fun, which motivated them to participate in class, reflecting a sense of intrinsic motivation. For example, in a personal journal entry a student stated that “a say in what we do makes me feel like I’m part of the class more. So I’m more inclined to participate since it seems like more fun.” Other researchers have examined the impact student choice had on their motivation in PE. Ward et al. (2008) manipulated the PE environment where students were in a choice group or the no choice group with a high element of teacher control. The authors found that the female students in the choice group had higher levels of self-determined motivation than those who did not get to choose their activity. Similarly, Prusak et al. (2004) found that when offered choices in PE activities, students responded with greater levels of intrinsic motivation.

Researchers examining the re-design of PE for young women also found that students valued having choices. Felton et al. (2005) interviewed adolescent girls who participated in the Lifestyle Education for Activity Program (LEAP) intervention. An essential element of LEAP included a choice based curriculum. The girls responded positively to having choices in activities, and explained the importance of having a variety of activities from which to select. Similarly, the participants in GGA commented on how variety was important to them, because it meant they had a greater chance of participating in activities they preferred, and when it occasionally came to an activity they did not like as much, the overall variety through out the course meant they would only have to do the activity for a short period of time. Gibbons and Gaul (2004) interviewed participants from a female only PE class with a choice-based curriculum, and they too found that the girls valued having choices and variety because it made the class more meaningful and enjoyable.

This theme of choice was reflected in a study by Gibbons (2009) that examined the course content and structure of 32 PE classes across British Columbia with a high enrolment of high school girls. A commonality of the classes included a choice aspect and the opportunity for student involvement in the class development. This is consistent with the BC Ministry of Education’s aim of the PE 11/12

curriculum (1997), that students should be able to focus their learning on areas of personal interest and work with teachers to develop their PE program. It is evident that the desire for choice and variety is felt among female students, even as early as middle school (Gibbons & Humbert, 2008).

There was some evidence that not all the participants in the case study felt their autonomy was satisfied. This was the case for a few participants did not choose to enrol in GGA, rather they were placed in the class by the school administration. It was often the case that the same students felt their preferred activities were often not selected because their choices were not as popular as some. For example a focus group participant commented that she was "the only girl out of the whole school who does not like the dance unit. It's just never something I've enjoyed and unfortunately every other girl seems to love it." A small group of students expressed that they felt forced to participate in certain activities because everyone else wanted to do them, and that they generally felt bored and unmotivated as they knew they wouldn't have as much fun. These feelings reflected a sense of dissatisfaction and extrinsic motivation.

Extrinsic motivation involves engaging in behaviour controlled by external reasons, such as to avoid punishment or to avoid poor grades, and can often result in boredom or distress (Deci & Ryan, 2000). The participants in this case study were engaged in activities because they had to be there, not because they enjoyed them. It appeared that for this small group of girls the lack of autonomy when choosing to enrol in the class and choosing course activities negatively affected their motivation. Perhaps other autonomy supportive strategies could have been used to alleviate these negative outcomes, such as communicating a meaningful rationale as to why an activity such as dance was important to learn, as suggested by Reeve (2006).This finding is consistent with SDT in that a lack of autonomy satisfaction can lead to externally regulated behaviour (Deci & Ryan, 2000) and is supported with other research.

A qualitative study by Ntoumanis et al. (2004) revealed that students who were amotivated in PE, those who avoided participating by sitting out, were dissatisfied in PE because they had low autonomy. These students stated that they were in PE because they had to be there and complained that they did not get much choice of activities. Contrary to this finding, the participants in GGA revealed that they continued to participate in class despite not enjoying the activities. Their comments reflected an external motivation rather than amotivation. It would appear that other needs, mainly relatedness, made up for the lack of autonomy. Some participants commented that having their friends around made up for not always getting their choice. Deci and Ryan (2000) proposed that while fulfilling the need for competence and relatedness may be sufficient to satisfy more controlled motivation and behaviour, the need for autonomy must also be satisfied to truly achieve intrinsic motivation and acquire optimal outcomes. The competence and relatedness constructs and themes will be discussed in the following two sections.

It was clear in Theme 1 that the participants' teacher was autonomy supportive and made several distinct actions to support her students' needs, such as allowing student input and offering a variety of unique activities. Recent research has examined the reasons why some teachers are more autonomy supportive than others. Taylor, Ntoumanis, and Smith (2009) suggested that aspects of the teaching environment can thwart teacher's psychological needs, which frequently resulted in teachers using controlling strategies, detrimental to students' need satisfaction and intrinsic motivation. Not having enough time in a PE class to account for student choice or an environment that pressures one to conform to the teaching styles of their colleagues can thwart a teacher's needs. It was apparent that this was not the case with GGA. The teacher planned the unique course on her own volition with the support of her school administration, indicating that her need for autonomy was fulfilled. She was intrinsically motivated to create the course, as she did not appear to create the class for an external reward, and her interest was maintained as this was the third semester GGA was offered. According to SDT, her actions

reflect her own need satisfaction, and perhaps allowed her to focus on fulfilling her students' needs rather than focusing on her own needs. Her enthusiasm and internal motivation to create a unique course just for girls may have been the spark that ignited the students' interest in taking the course. However as the teacher was not the focus of this investigation, further research is needed to determine if and how her needs were being met.

Theme 2: Optimal Challenge for Optimal Participation

SDT construct: Competence support and satisfaction.

The construct of competence, described by Deci and Ryan (1985) as a need for efficacy, is satisfied in an optimally challenging environment where one is "exercising and extending one's capabilities" (p. 27). Theme 2-Optimal Challenge for Optimal Participation reflected how the participants felt their need for competence was satisfied and supported by the teacher's careful planning of inclusive, effort oriented, and challenging lessons. Competence was also supported through the teacher's encouraging nature.

The participants felt that by having less pressure and competition they were able to try harder in class and enjoy PE. Many revealed they felt good about improving their skills and it motivated them to try harder, making the class more enjoyable. These feelings resembled the relationship discussed in the literature between perceived competence, a mastery climate, and intrinsic motivation. According to Cox and Williams (2008) mastery climates emphasize learning and improvement, in contrast to performance climates, where students are evaluated on their skill performance. This focus on effort and personal improvement tend to allow students' more opportunities to feel competent which in turn fosters intrinsic motivation. The learning environment in GGA was mastery oriented, as students felt that they received good grades and positive feedback when they participated with their best effort, rather than receiving performance based feedback. Less external pressure was placed on the girls to have the best skills, and they were motivated and confident to participate. Similarly, Cox and Williams (2008) found

that a mastery climate had a direct positive relationship to perceived competence and self-determined motivation. This is supported in Deci and Ryan's (1985) SDT, where they argued that one is truly intrinsically motivated when she feels free from pressures, such as contingencies resting on her performance. Other researchers demonstrated similar findings when examining girls' perspectives in PE.

Middle school girls, interviewed by Gibbons and Humbert (2008), revealed they were dissatisfied with their PE experiences due to the public nature of performing skills and being evaluated in front of their peers. This, along with a lack of opportunities to improve their skills, impacted their sense of competence. The participants in GGA appreciated that their teacher did not "just stand there and mark us, just judging us" but rather she would participate with her students. This seemed to improve their efficacy as they realized that if she could do something, it was likely they'd be able to do it too. The teacher in GGA provided this positive feedback to her students, whether it was verbal praise or a high five when they worked together to score a goal, which fostered feelings of competence and motivated them to try harder in class.

Deci and Ryan (1985) argued that rewards such as feedback provide students with meaningful information, in the absence of pressure or control, which enhances perceived competence, feelings of self-worth, and intrinsic motivation. Receiving positive feedback and meaningful grades, such as being rewarded with praise or a good grade when one exerts effort, was more important to the students in GGA than receiving a grade based on how good their basketball skills were, which in turn motivated them to keep participating. Similarly, Brooks and Magnusson (2006) examined a re-designed PE program that had shifted the focus away from sporting excellence to more of a participation orientation. In this re-designed course, the students who used to resist participating felt more comfortable, and felt success was attainable in PE, particularly when encouraged by their teacher. It appears from these qualitative findings that PE teachers can help support students' sense of competence by encouraging effort and participation.

The links between competence and motivation was reflected in SDT research. Mouratis, Vansteenkiste, Lens, and Sideridis (2008) examined the effects of feedback in PE, and discovered strong positive feedback had positive associations to competence, autonomous motivation, and intention to participate in future activities. Ntoumanis (2005) found that the PE teachers' support of students' need for competence predicted their competence satisfaction. In a qualitative study, Ntoumanis et al. (2004) determined that amotivated students in PE felt less competent and disliked competition.

Adolescent girls have frequently commented that they disliked competitive PE activities in favour of more recreational, lifestyle activities (Fraser-Thomas & Beaudoin, 2004; Gibbons et al., 1999). Some participants in GGA revealed that they disliked their previous PE and occasionally would skip out because they felt unskilled and because their class was too competitive. Deci and Ryan (1985) argued that direct competition has been shown to decrease intrinsic motivation, particularly among females, because the goal is to win rather than master the activity. Winning is controlled by being better than someone else, which undermines intrinsic motivation regardless of the outcome, because one is not doing the activity for the simple satisfaction of engaging in the behaviour. If one is used to winning, this becomes extrinsically motivating because they will continue engaging in the behaviour to receive the external reward of winning. However if one receives negative feedback in the form of losing, and the task greatly exceeds one's capacities, she is less likely to return to the competitive activity. This nature of competitive sport, often a focus in traditional PE, may lead to low competence and truly be amotivating for those who experienced the negative feedback of losing.

Contrary to the traditional PE paradigm, GGA was mastery oriented and generally focused on effort and improvement rather than on winning the game, and therefore avoided the detrimental effects of competition. The same girls who disliked the competitive aspect of their previous PE now felt more motivated and enjoyed PE because they could do activities they were good at, or could improve on, without feeling embarrassed if they messed up. Traditional games, such as soccer, was successfully

incorporated into GGA without becoming amotivating so long as the focus remained on playing well and on personal improvement, rather than on beating the opponent. The preceding examples of the positive aspects of informational feedback and the detrimental aspects of direct competition fit with the competence construct of SDT and that a sense of competence fostered intrinsic motivation in GGA.

Correlational studies supported this relationship and revealed that competence satisfaction positively predicted intrinsic motivation towards PE (Ommundsen & Kvalo, 2007; Standage & Gillison, 2007). This finding was reflected by the participants in GGA. Those who used to avoid participating due to a lack of competence now were motivated to participate because of the low pressure and supportive class environment. Students who were already competent in PE also maintained their motivation because they enjoyed using their skills and improving. One student's comment reflected this when she mentioned she participated with full effort during "badminton, because I really like it and I'm pretty good at it I have to say." This student was motivated because she felt competent, which in turn made the activity enjoyable.

A few noteworthy instances occurred where a small group of girls expressed their need for competence was not fully satisfied. These participants were quite skilled in PE and had a preference for competitive activities, such as basketball and soccer. They felt the level of challenge in the class was not sufficient to keep them motivated of engaged. This reflected the constructs in SDT, as Deci and Ryan (1985) proposed that not feeling optimally challenged, where tasks are overly familiar or repetitive, result in boredom and do not facilitate competence or intrinsic motivation. This sense of boredom was evident in these participants' comments. The nature of students' varying skill level in PE can be problematic when lesson planning. The teacher of GGA was careful to plan inclusive lessons to encourage participation from students with relatively low levels of competence, but this was often at the expense of those students already quite skilled. The TARGET[3] structures of a mastery climate, as

[3] Task, Authority, Recognition, Grouping, Evaluation, and Time (TARGET)

discussed by Barkoukis, Tsorbatzoudis, and Grouios (2008), encourage teachers to design tasks that provide various levels of difficulty where students can work at their own level. Planning lessons where the more skilled students could plan individual skill improvement goals may have remediated the lack of challenge in GGA.

This same group of girls also indicated a preference for competitive activities. Deci and Ryan (2000) suggested that a strong desire to be competitive could result from the need for competence being thwarted. It is possible that these girls were used to being competitive when they were in a traditional PE environment, more oriented towards competitive team sports, and that now the lack of competition thwarted their need. One student wrote in her journal that she wanted "more choices to be competitive" and that she didn't think she'd "take this class again," reflecting a sense of low autonomy, competence, and motivation. It was often the same girls who were placed in GGA that wanted the more competitive sports indicating that the school administration and external factors such as an inflexible school time table was controlling their decision to enrol in GGA and thwarted their needs for autonomy and competence. This need thwarting led to decreased motivation. If competition enhanced their motivation, it is likely because they were used to receiving the positive competence feedback from winning. Perhaps their decrease in motivation could have been avoided through other types of positive feedback, such as increased informational praise from the teacher, or setting and achieving personal goals. These were elements of Barkoukis et al.'s (2008) TARGET intervention, aimed at improving students' motivation in PE through a mastery climate, and were found to have positive relationships with the students' enjoyment and perceived competence in PE. Research by Ommundsen and Kvalo (2007) supported this relationship as they found links between low perceived competence in PE and amotivation. When students do not feel challenged or the level of challenge is too difficult, it is likely to negatively affect their motivation, as they may choose to avoid participating. To motivate all students intrinsically, young women must have the option to enrol in a class that is optimally challenging.

Theme 3: Comfort, Cooperation, and Confidence: When It's Just Girls It's Just Fun

SDT construct: Relatedness support and satisfaction.

The SDT construct of relatedness support and satisfaction was supported by Theme 3-Comfort, Cooperation, and Confidence: When it's just girls its just fun. Relatedness was supported through the all-girls PE environment and through the teacher's planning. The teacher made GGA feel like an exclusive class by allowing the girls some special privileges, like more time to change for class, weekly field trips, and working in groups with their friends. The class was also inclusive as all students felt welcome and comfortable to participate, and participants commented how they felt understood and appreciated by their teacher. These factors created positive PE experiences and a sense of belonging, which paralleled Deci and Ryan's (1985) relatedness construct.

Many participants enjoyed the all-female environment because it allowed them more opportunities to participate and they felt more comfortable without boys in the class. This finding is similar to other qualitative inquiries into all female PE classes. The LEAP intervention (Felton et al., 2005) offered opportunities for gender separation and the girls commented how they enjoyed the female friendly atmosphere. Fraser-Thomas and Beaudoin (2004) found that by grade 9, most girls preferred playing strictly with girls as it allowed more chances to play while improving their level of comfort in PE. While younger girls may not want a separate girls' class or realize it could be an option, as Gibbons and Humbert (2008) found during their interviews with middle school girls, it is apparent that by high school most girls feel more comfortable in an all female PE environment. This study along with other studies demonstrated how the class climate can support or thwart students' need for relatedness.

Middle school girls interviewed by Gibbons and Humbert (2008) felt their teacher often planned activities their male classmates preferred. Participants in GGA commented they liked "that it's meant for girls, we do stuff girls tend to like more." It is evident in the literature that most girls tend to enjoy different activities from most boys. Having an all-girls' class provided the young women in GGA with

greater opportunities to participate because “girls actually pass the ball, not like boys.” This finding has been supported in the literature, for example Hannon and Ratliffe (2007) found that female students were more active in an all girls’ PE compared to females in a co-educational PE class, and the teacher had greater interaction with girls in the segregated class compared to the girls grouped with boys.

The participants’ comments about enjoying the all-female environment were not altogether surprising. It has been well documented that girls struggle to navigate the co-educational environment due to prevailing hegemonic masculinity in PE. Connell and Messerschmidt (2005) defined hegemonic masculinity as the normative identity for men, including a set of expectations for men, which ultimately reinforces the stereotype of male dominance and the subordination of women in society. Examples of this appropriate male behaviour in PE could include participating in aggressive, competitive sports, such as football, where as female students would be encouraged to partake in more feminine activities, such as aerobics or dance. Cockburn and Clarke (2002) found through their discussion with young women that the female participants struggled in PE because the nature of being physically active went against the feminine identity created for them by society, particularly in male dominated activities. Implications of these gender orders included non-participation for some young women, due to feeling uncomfortable being active in front of others, particularly in front of boys. An all-girls’ PE environment may therefore decrease feelings of self-consciousness or embarrassment among female students.

This was supported in the all-female environment of GGA. The participants discussed how they felt more comfortable being physically active, and had more for opportunities to engage in different activities, including some not necessarily seen as feminine, such as kickboxing, which the participants discussed as one of the most enjoyable activities of the semester. The all-female aspect of GGA provided a place to combat these stereotypical discourses, and resulted in a sense of relatedness and greater motivation to be physically active.

Other factors contributed to the participants' sense of relatedness, including actions by their teacher to create a learning environment where students felt they belonged. Participants frequently commented how they felt their teacher was understanding and that she appreciated her students. Gibbons and Gaul (2004) also found high school girls appreciated a supportive atmosphere from their teacher and classmates, making them feel valued and comfortable to participate. Opportunities to work in groups with their friends motivated the participants in GGA, as being with their friends made the class more enjoyable. Group work and being with friends in PE were important facilitators to girls' physical activity participation in the LEAP intervention (Felton et al., 2005) and was a consistent factor in young women's motivation, found in recent cross Canada interviews with adolescent girls (Pfaeffli, in press).

The participants in the current study felt that having their friends in PE motivated them to attend class and try harder once they were there. This motivation occurred because friends made PE enjoyable, reflecting intrinsic motivation. The relatedness factor may be so important for this population because it made up for low levels of competence or intrinsic motivation. For example, many girls in this case study with low competence used to avoid PE due a dislike of the competitive environment and the type of activities offered. Some girls who were disinterested in playing soccer in previous PE classes were motivated in GGA to participate. This increase in motivation may be a result of an increased sense of relatedness due to participating in the all-girls' environment with their friends and feeling cared for by their teacher, as the game of soccer remained unchanged. Cox and Williams (2008) argued that perceived relatedness may be more important in the development of self-determined motivation, particularly for those students not inherently interested in the activity.

Although Deci and Ryan (2000) have stated that the relatedness construct may play a more distal role in maintaining intrinsic motivation, it appears that this may not be the case with adolescent girls. Ntoumanis (2005) found that PE teachers who supported their students' need for relatedness positively predicted relatedness satisfaction. An interesting finding in his study was that the female

participants who enrolled in optional PE scored higher relatedness satisfaction than their male classmates. The girls in GGA discussed the notion of group work and friends being highly motivating. Even when a few of the more competitive participants in the class discussed how they felt unchallenged in GGA, having their friends in class seemed to compensate for this and motivated them to keep attending class and participate once there, indicating that relatedness may be as important as competence or autonomy in facilitating intrinsic motivation for this population. This is supported with Ntoumanis et al.'s (2004) finding that amotivated students had low relatedness satisfaction because they often had to work with classmates they did not like and therefore put in less effort. It is evident from the themes emerging from this case study that fulfilling adolescent girls' need for relatedness is crucial to their motivation.

The constructs from SDT have paralleled the emerging themes, both positively and negatively. A PE teacher's behaviour can support or thwart students' needs for autonomy, competence, and relatedness. In this study, students' needs were generally satisfied leading to intrinsic motivation because they were engaging in activities the participants found "interesting, that provided novelty and optimal challenge" (Deci & Ryan, 2000, p. 235). Deci and Ryan (2000) proposed that intrinsic motivation is associated with positive, desirable outcomes, including better performance, maintained behaviour, increased learning, and well-being. It was apparent through the emerging themes that motivation did indeed have consequences for the participants in GGA, including physical activity behaviour in and out of class, changes in affect, meaningful learning, and a general sense of well-being.

Theme 4: New Skills, New Friends, New Attitudes: How I Learned to be Healthy in PE.

SDT construct: Outcomes of motivation.

Subtheme 4a: Let's move it: from PE to the real world.

A desirable outcome of motivation in PE is physical activity behaviour. Individuals experiencing intrinsic motivation will likely have better levels of performance and maintained behaviour (Deci & Ryan,

2000). Subtheme 4a-Let's Move it: From PE to the Real World discussed the participants' perspectives on physical activity. Participants felt the positive experience of belonging to GGA provided them with opportunities to be physically active during school hours and exposed them to different types of activities they could do during leisure time. This was particularly important to those participants who had previously been PE avoiders and now were actively engaged. The participants commented that they intended to participate in some of these activities during their leisure-time and many expressed that they engaged in this desirable leisure-time physical activity behaviour. This is in accordance with the BC grade 11 and 12 PE curricular aim that students should be provided with meaningful and enjoyable PE experiences to facilitate lifelong physical activity participation (BC Ministry of Education, 1997). Lifestyle physical activities were of particular interest to the participants in GGA who developed a dislike of competitive team sports from their previous PE experiences.

A large school-based intervention with girl friendly PE, LEAP, found increases in physical activity participation among intervention participants. The features of girl friendly PE (Felton et al., 2005) were similar to GGA and incorporated aspects similar to that of SDT, including teaching lifestyle physical activity skills in a noncompetitive environment (competence) and small group interaction with gender separation (relatedness). In a qualitative follow up with LEAP participants, the girls commented that they used to avoid PE by just sitting on the floor, and now they were more active in class. Overall quantitative measurement supported these comments, as significant improvements were seen in the girls' vigorous and moderate-to-vigorous physical activity levels (Felton et al., 2005).

Similar findings emerged from this case study, for example one girl in GGA described how she "used to skip out on PE so I had almost no physical activity at all, [but] now I have so much more energy now that I'm actually enjoying it." Her enjoyment of PE reflected intrinsic motivation, and her participation in class reflected the behaviour outcome. Some of these girls also started to participate in physical activity outside of school, similar to Brooks and Magnusson's (2006) finding that previous PE

avoiders were now physically active in community programs and clubs because of their positive experiences in the new PE program.

Studies in SDT found evidence supporting a positive relationship between physical activity behaviour and intrinsic motivation. Lim and Wang (2009) and Standage et al. (2003) found positive correlations between intrinsic motivation in PE and intention to be active outside of school. Similarly, Ommundsen and Kvalo (2007) found that intrinsic motivation positively predicted self-reported leisure-time physical activity behaviour. Vierling et al. (2007) objectively measured physical activity behaviour and found a relationship between autonomous motivation and higher pedometer step counts. Lonsdale et al. (2009) used pedometers to measure physical activity behaviour, and found that students who had higher level of self-determined motivation had higher levels of step counts than those students with lower levels of self-determined motivation. The authors also found that students in the free-choice condition had higher step counts, indicating a direct relationship between autonomy and physical activity behaviour. Contrary to this, Ward et al. (2008) found no difference in step-count between choice and no choice groups. Ward et al. (2008) argued that because students have to take PE, they can never be fully autonomous. However in the current study, the participants had a choice to enrol in GGA as it was an elective class, and generally felt they were more active or at least had similar levels of physical activity than before enrolling in this choice-based class.

When discussing enrolment, 22 out of 23 participants said they would enrol in GGA again because of their high levels of enjoyment in the class. The links between enrolment in PE and motivation was supported with other research. Ntoumanis (2005) found that self-determined motivation positively predicted intention to enrol in elective PE the following year, which in turn was associated with actual enrolment. It is worthwhile to note that if students can be motivated intrinsically in PE through enjoyable experiences, it may translate to enrolment in optional PE and result in greater physical activity levels. This is essential to develop well before students are in grade 10, as this is the last

year of mandatory PE in BC. Studies have found large decreases in enrolment rates for female students between grades 10 and 11. Mandigo, Spence, Poon, and Mummery (1999) found that participation rates for female students in Alberta dropped from 79% in grade 10 to 30% in grade 11. The high interest in enrolling in GGA the following year implies that the elements of the course were indeed meeting the needs of the students.

Subtheme 4b: From drab to fab: working out doesn't have to be boring.

Affect, the feelings and attitudes towards the desired behaviour, is another outcome of motivation identified by SDT (Deci & Ryan, 2000). Subtheme 4b-From Drab to Fab: Working Out Doesn't Have to be Boring reflected the change in the participants' self-described affect. They now had positive attitudes towards physical activity and PE. Due to the many factors previously discussed, participants now realized engaging in physical activity could be enjoyable and achievable. Other qualitative studies examining re-designed PE had similar responses from participants. Felton et al. (2005) revealed how the LEAP participants enjoyed the all girls PE environment and their attitudes changed in that they now looked forward to PE. A similar comment occurred by a participant in GGA who discussed that she "liked coming from English [class] and knowing 'yes! I'm going to PE!'"

Correlational research in SDT also found links between motivation and affect. Ntoumanis (2005), Standage et al. (2005), and Vierling et al. (2007) found that self-determined motivation in secondary PE predicted positive attitudes towards PE. This is not surprising as the definition of intrinsic motivation involves engaging in behaviour out of enjoyment and interest (Deci & Ryan, 1985), yet it is noteworthy that many girls in GGA self-reported a change from a negative affect in PE to now seeing PE as fun and enjoyable. The links between need satisfaction and affect are apparent. The participants found GGA enjoyable because they were able to do activities they chose and therefore liked, that provided challenges, and that they were able to do in a comfortable environment with their friends. A caring and encouraging teacher also led to the positive attitudes the participants expressed. This may have been

partly due to her positive feedback, as other researchers have found similar links. Mouratidis et al. (2008) found positive relationships between positive feedback, perceived competence satisfaction, autonomous motivation, and positive affect. These changes in course design, including the teacher's actions, were necessary for some of the participants to have a positive PE experience.

Subtheme 4c: Healthy bodies, healthy minds: I actually learned something in PE.

Deci and Ryan (2000) also suggested that meaningful learning can result when one is intrinsically motivated. This outcome was reflected in Subtheme 4c-Healthy Bodies, Healthy Minds: I Actually Learned Something in PE. The participants discussed how they experienced meaningful learning over the term, in that they felt they learned something of personal interest and value. Skills the participants discussed learning included social skills, such as how to trust their classmates through team building activities, and physical skills, including improving at certain sports or activities. Research examining the cognition outcome of motivation in PE is minimal, although Ntoumanis (2005) did find that students with self-determined motivation in PE were likely to pay greater attention to their teacher and concentrate on the task at hand. Standage et al. (2005) also found links between need support, motivation, and concentration. This behaviour was observed in the case study. When the participants appeared highly motivated, for example in one observation session they "were very focused on the soccer game, they did not goof around and rather took the game seriously." The participants generally paid attention to their teacher and focused on completing the activities in the class.

For learning to occur, the course content must be relevant to the students. In traditional PE, typically focused on male dominated sports, girls may be influenced by social discourses to resist participating in such activities. Therefore they may not find PE meaningful, and consequences of this included lower participation, lower skill development, and lower importance placed on physical activity, as Azzarito and Solmon (2009) found in their study. The authors found that girls tended to feel "pressured to participate in 'appropriate feminine' physical activities" (p. 185) and saw no value in PE,

and reported lower participation in PE than their male classmates. For meaningful learning to occur in PE it is important to ask the girls what they value and want to do in PE, as was done in GGA, which resulted in positive learning outcomes including skill improvement and an increased interest in physical activity.

Subtheme 4d: Get up and go! PE makes me excited and energized.

Deci and Ryan (2000) described the final consequence of intrinsic motivation as general well-being. SDT proposes that a person experiencing need satisfaction will feel a sense of vitality, self-esteem, general health, and a personal sense of wellness. This was mirrored in Subtheme 4d-Get up and Go! PE Makes Me Excited and Energized. The participants commented that belonging to GGA made them feel good, as they felt energetic, happy, and self-confident. Other PE research had similar findings.

For example, both the LEAP intervention (Felton et al., 2005) and Brooks and Magnusson (2006) found the participants expressed enhanced self-confidence after participating in an all girls class (Felton et al., 2005) or when receiving praise from their teacher (Brooks & Magnusson, 2006). SDT research has found links between need satisfaction, motivation, and well-being. Standage and Gillison (2007) found that autonomous motivation in PE positively predicted general self-esteem. Negative cases were also found through Ntoumanis et al.'s (2004) qualitative interviews. He found female students who were amotivated in PE had body image concerns which influenced their low levels of participation.

Similar statements were echoed in the present study, as many girls commented how they used to feel self-conscious in previous PE, especially around their male classmates, but after participating in GGA their "confidence grew" because as one student commented, having no boys meant she did not "have to be self-conscious...you can just focus on what you're doing." These feelings appeared to be mostly caused by a fulfilled sense of relatedness and competence, as being in an all girls, female friendly class, and learning skills created this increase in self-confidence. Perceived competence appeared to play a main role in other research. Knowles, Niven, Fawkner, and Henretty (2009) found that

longitudinal decreases in physical activity participation for adolescent girls were related to poor physical self-perceptions, particularly physical condition. It would appear that if adolescent girls gained confidence in their abilities and skills in PE, a likely occurrence in a need supportive environment, they may feel an overall improvement in their physical self-perception, resulting in increases, or at least a slower decline, in physical activity levels. It is imperative that this need supportive environment begins early on for young women, as Knowles et al. (2009) found this decline in physical activity levels by age 12.

Conclusion and Future Recommendations

The analysis of this case study discovered that features of the course did parallel the antecedents of intrinsic motivation and positively impacted the participants' perceptions of physical activity. Qualitative data gained from this study highlighted the importance of developing a PE environment that supports student choices and interests, builds their skills and confidence, and creates a sense of belonging. Aspects of the course content and learning environment influenced students' motivation to be physically active. The study also gained insight into how feeling motivated in PE was linked to the outcomes of SDT. Positive outcomes of GGA included self-reported improvements in physical activity behaviour, positive attitudes towards PE, meaningful learning, and an improved sense of well-being. The findings from this study supported SDT, as proposed by Deci and Ryan (1985), that social factors influence psychological needs, which in turn influenced the type of motivation experienced, and resulted in behaviour, affect, cognition, and well-being consequences. This warrants further research to investigate causal relationships between the antecedents and consequences of motivation, and builds a strong case for using SDT to design PE programs for young women.

The use of SDT in PE requires further research, including experimental, mixed methods, correlational, and longitudinal designs. This case study found that the constructs of SDT can be applied to a PE program that successfully motivated young women. GGA was not intentionally designed using

SDT, therefore the next step in research may be to conduct an experimental or mixed methods pilot study comparing one PE class designed using the constructs of SDT to a traditional PE program. Measurable outcomes could include changes in students' physical activity levels using objective instruments such as accelerometers, as well as measuring changes in affect, learning, and well-being, using well-validated scales. If effects were found, the pilot study could serve as the basis for a large scale intervention. It would also be worthwhile to investigate the teachers' perspectives on course implementation, to identify barriers and facilitators of using SDT to design a program. Qualitative follow ups would strengthen any future intervention, as discussions with the teachers and students may serve to identify why an intervention was successful or not, and to determine specific strengths or weaknesses with the implementation of such an intervention.

While this case study explained the perspectives of one group of young women in PE, the limitation of qualitative research is that the sample was not representative of the entire population and not all adolescents would respond in the same way. Further research is needed to determine if SDT could be used to design a program meeting the needs of adolescent girls in other contexts, adolescent males, or even the needs of younger students. While SDT proposed that if needs are met, positive outcomes are likely to occur, more research is needed to examine if this is true for different student populations. Additional correlational studies could be done to determine if these relationships exist for diverse populations, prior to conducting a causal study.

Incorporating the theory in earlier grades may be even more important as the literature showed that even by late elementary/early middle school girls are already dissatisfied with their PE experiences (Gibbons & Humbert, 2008). Perhaps if examined longitudinally, results would reveal that meeting students' needs in PE early on would improve enrolment in optional PE once students reach high school. Longitudinal studies are also needed to examine any long term effects of motivation in secondary PE. It would have been interesting to follow up with the participants in GGA after high school completion to

determine if belonging to GGA influenced their physical activity levels into adulthood, as the BC PE curriculum aims to promote lifelong physical activity participation (BC Ministry of Education, 1997).

Several practical implications arose from this study for policy makers and teachers. The case study demonstrated how important individual tailoring of a course can be to students' motivation. A PE curriculum should encourage the use of need supportive strategies to create a welcoming environment for young women. While the BC PE curriculum was already in place to support a program such as GGA, it remains imperative that curriculum designers allow teachers the flexibility to tailor the curriculum to meet their students' unique needs. Aside from allowing individual tailoring, curriculum designers should be well versed in the hegemonic masculinity young women experience in PE, and create curriculum to combat these gender stereotypes. Policy makers, such as provincial ministries of education and curriculum designers, should take these social pressures into account and allow opportunities for all-female classes if desired. The school administration in the case study supported a special class for female students only, which was found to be crucial in their enjoyment and level of comfort in PE. In addition, options should be available for students to choose what type of PE class they'd prefer, whether that would be a class based on lifestyle activities or a competitive sport environment, or a single gender or co-education class. Having this choice would help satisfy all students' needs and in turn would create welcoming PE environments, possibly improving PE enrolment for this population.

This study revealed implications for school boards and administrators as well. The success of GGA was derived from an individual teacher's effort, but she was supported by her administration to design a new PE course. Facilitators included adequate class time for student input and field trips, allowing them a variety of activities. Daily PE allowed students time to build skills and see improvements. A weakness was that the course was offered on a semester basis, indicating that the girls would not receive PE during the following term which many revealed would negatively impact their physical activity levels. This could be minimized by offering the course both terms and provides a strong

argument in support of daily PE throughout an entire school year. Several provinces, including British Columbia, Alberta, and Ontario have implemented a daily physical activity initiative, but it has yet to reach all grades and provinces. BC has adopted policy that states students in kindergarten through grade nine must have 30 minutes of daily physical activity during school hours, while students in grades 10-12 must accumulate a total of 150 minutes per week (BC Ministry of Education, n.d.). The daily physical activity initiative could be improved if high school PE was offered year round.

This study provided evidence that supporting the teacher's needs may result in positive outcomes for students. The links between an autonomy supportive teacher and student motivation has been well documented, which has important implications for school administration and teacher training programs. Professional development should be encouraged and supported, particularly sessions where teachers can learn the basics of SDT, including autonomy supportive strategies, and how to put the strategies into practice. Pre-service teachers need to be learning these strategies during their university education. Professional development that provides teachers with opportunities to examine their own stereotypes will allow teachers to learn how to create PE environments welcoming for all students.

This study revealed implications for teachers, including the positive example of how one teacher took it upon herself to make changes to a PE program. It did take effort and energy to persist with these changes in course design, but as this study showed, it can be done and the outcomes not only benefit the students, but may benefit the teacher as well. Taylor et al. (2009) found that some teachers interacted favourably with more motivated students, perhaps due to feeling a sense of relatedness with these students. It is likely that a teacher would experience a positive work environment if all students were motivated in PE.

From the evidence of this case study, the constructs of SDT can and should be used to design PE programs in order to meet the needs and interests of all students. The course content and learning environment of GGA paralleled the antecedents of motivation and provided young women with positive

PE experiences. The participants expressed that having choices, optimal challenges, and interacting with friends were particularly motivating. Findings from this case study highlighted how meeting the needs of female students in PE can result in positive outcomes, including increased physical activity participation and enjoyment, and improve enrolment for young women in PE.

It is crucial that something is done to combat the decline in physical activity levels for this population, as adolescent females' current and future health may suffer as a result of this inactivity. Positive PE experiences may provide part of the solution as research has found links between youth and adult physical activity levels (Tammerlin et al., 2003; Boreham & Riddoch, 2001). Increasing physical activity participation during high school may translate into active adulthood. This increased physical activity will benefit the health of these young women, as it is well known that engaging in regular physical activity can reduce risks factors for certain diseases (Hills et al., 2007). Improving PE experiences for young women, as outlined in this study, can help in reversing the trend of declining physical activity levels for this population and possibly improve their overall physical and mental health.

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Appendix A: Information Letter and Consent Forms

University of Victoria | School of Exercise Science, Physical & Health Education

Participant Consent Form

Exploring Female Students Perceptions of a Tailored Physical Education Program

You are invited to participate in a study entitled "Exploring Female Students Perceptions of a Tailored Physical Education Program" that is being conducted by Leila Pfaeffli.

Leila Pfaeffli is a graduate student in the department of Exercise Science, Physical and Health Education at the University of Victoria and you may contact her if you have further questions by phone at 250-661-2148 or by email at leilap@uvic.ca.

As a graduate student, I am required to conduct research as part of the requirements for a degree in Physical Education. It is being conducted under the supervision of Dr. Sandra Gibbons. You may contact my supervisor at 721-8383 or sgibbons@uvic.ca.

Purpose and Objectives

The purpose of this research project is to examine a new elective physical education course that has successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Insight will be gained into the features of the course that parallel the pre-requisites of motivation in self-determination theory and how those elements impact the students' perceptions of physical activity. The links between motivation and the outcomes of self-determination theory, including students' attitudes towards physical education, their perceived well-being, and their physical activity behaviour will also be explored.

Importance of this Research

Research of this type is important because many young women today are insufficiently physically active to achieve health benefits. A large number of adolescent females opt out of elective physical education due to dissatisfaction with the nature of typical PE classes. The unique, elective PE course selected for this research will provide insight into how young women respond to a course designed to meet their interests and needs.

Participants Selection

You are being asked to participate in this study because you are enrolled in the course of interest. Your views and perspectives about the course, and your motivation towards physical activity will answer the research questions.

What is Involved

If you agree to voluntarily participate in this research, your participation will include brief personal journal entries once every two weeks during class time for the semester and one focus group discussion with Leila Pfaeffli during regular class time near the end of the term. You will also be observed approximately once per week. Your attendance records will also be gathered at the end of the semester.

Inconvenience

Participation in this study may cause some inconvenience to you, including some time away from physical education class. I estimate that the journal entries will take 20 minutes every two weeks and the focus group will take approximately one hour.

Risks

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

Benefits

The potential benefits of your participation in this research include providing insight into a unique physical education program that other teachers may choose to use as a model for their own classes. The perspectives you provide may encourage teachers to make changes to other PE programs, ultimately increasing physical activity participation and positively impacting the health of other girls your age.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data from the personal journals and attendance records will be removed. If you have already participated in a focus group or observation session, your data will still be included in the study with no identifying information.

On-going Consent

To make sure that you continue to consent to participate in this research, I will outline the requirements of participation in the study before entering into a researcher-participant relationship both verbally and through this consent form. I will also ensure that you are aware that you can withdraw from the study at any time with no consequence to you.

Anonymity

In terms of protecting your anonymity pseudonyms will be assigned to each participant and to the school at the data collection stage and will be used in the dissemination of results. Anonymity is limited because of the nature of the focus groups as each participant is aware of each other's responses. Participants will be told to avoid discussing the nature of the focus group responses with people outside of the study.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by password for computer files, a locked cabinet for hard copies, and the destruction of data after the thesis is defended.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: thesis defense and a published article in a journal.

Disposal of Data

Data from this study will be disposed of after the thesis is defended. Electronic data will be erased, and paper copies will be shredded.

Contacts

Individuals that may be contacted regarding this study include the researcher, Leila Pfaeffli, and the researcher's supervisor, Dr. Sandra Gibbons. Contact information is listed at the beginning of this form.

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

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

_____	_____	_____
Name of Participant	*Signature*	*Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

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Parent Consent Form

Exploring Female Students Perceptions of a Tailored Physical Education Program

Your daughter is invited to participate in a study entitled "Exploring Female Students Perceptions of a Tailored Physical Education Program" that is being conducted by Leila Pfaeffli.

Leila Pfaeffli is a graduate student in the department of Exercise Science, Physical and Health Education at the University of Victoria and you may contact her if you have further questions by phone at 250-661-2148 or by email at leilap@uvic.ca.

As a graduate student, I am required to conduct research as part of the requirements for a degree in Physical Education. It is being conducted under the supervision of Dr. Sandra Gibbons. You may contact my supervisor at 721-8383 or sgibbons@uvic.ca.

Purpose and Objectives
The purpose of this research project is to examine a new elective physical education course that has successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Insight will be gained into the features of the course that parallel the pre-requisites of motivation in self-determination theory and how those elements impact the students' perceptions of physical activity. The links between motivation and the outcomes of self-determination theory, including students' attitudes towards physical education, their perceived well-being, and their physical activity behaviour will also be explored.

Importance of this Research
Research of this type is important because many young women today are insufficiently physically active to achieve health benefits. A large number of adolescent females opt out of elective physical education due to dissatisfaction with the nature of typical PE classes. The unique, elective PE course selected for this research will provide insight into how young women respond to a course designed to meet their interests and needs.

Participants Selection
Your daughter is being asked to participate in this study because she is enrolled in the course of interest. Her views and perspectives about the course and her motivation towards physical activity will answer the research questions.

What is Involved
If your daughter agrees to voluntarily participate in this research, her participation will include brief personal journal entries once every two weeks during class time for the semester and one focus group discussion with Leila Pfaeffli during regular class time near the end of the term. Your daughter will also be observed in class approximately once per week.

Inconvenience
Participation in this study may cause some inconvenience to your daughter, including some time away from physical education class. I estimate that the journal entries will take 20 minutes every two weeks

and the focus group will take approximately one hour. Non participating students will engage in regular class activities during this time.

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

Benefits
The potential benefits of your daughter's participation in this research include providing insight into a unique physical education program that other teachers may choose to use as a model for their own classes. The perspectives your daughter provides may encourage teachers to make changes to other PE programs, ultimately increasing physical activity participation and positively impacting the health of other girls her age.

Voluntary Participation
Your daughter's participation in this research must be completely voluntary. If your daughter does decide to participate, she may withdraw at any time without any consequences or any explanation. If she does withdraw from the study her data from the personal journals will be removed. If your daughter has already participated in a focus group or observation session, her data will still be included in the study with no identifying information.

On-going Consent
To make sure that you and your daughter continues to consent to participate in this research, I will outline the requirements of participation in the study before entering into a researcher-participant relationship both verbally and through this consent form. I will also ensure that your daughter is aware that she can withdraw from the study at any time with no consequence to your daughter.

Anonymity
In terms of protecting your daughter's anonymity pseudonyms will be assigned to each participant and to the school at the data collection stage and will be used in the dissemination of results. Anonymity is limited because of the nature of the focus groups as each participant is aware of each other's responses. Participants will be told to avoid discussing the nature of the focus group responses with people outside of the study.

Confidentiality
Your daughter's confidentiality and the confidentiality of the data will be protected by password for computer files, a locked cabinet for hard copies, and the destruction of data after the thesis is defended.

Dissemination of Results
It is anticipated that the results of this study will be shared with others in the following ways: thesis defense and a published article in a journal.

Disposal of Data
Data from this study will be disposed of after the thesis is defended. Electronic data will be erased, and paper copies will be shredded.

Contacts
Individuals that may be contacted regarding this study include the researcher, Leila Pfaeffli, and the researcher's supervisor, Dr. Sandra Gibbons. Contact information is listed at the beginning of this form.

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

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

_____	_____	_____
Name of Participant	*Signature*	*Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

University of Victoria | School of Exercise Science, Physical & Health Education

TEACHER CONSENT FORM

Exploring Female Students Perceptions of a Tailored Physical Education Program

You are invited to participate in a study entitled "Exploring Female Students Perceptions of a Tailored Physical Education Program" that is being conducted by Leila Pfaeffli.

Leila Pfaeffli is a graduate student in the department of Exercise Science, Physical and Health Education at the University of Victoria and you may contact her if you have further questions by phone at 250-661-2148 or by email at leilap@uvic.ca.

As a graduate student, I am required to conduct research as part of the requirements for a degree in Physical Education. It is being conducted under the supervision of Dr. Sandra Gibbons. You may contact my supervisor at 721-8383 or sgibbons@uvic.ca.

Purpose and Objectives

The purpose of this research project is to examine a new elective physical education course that has successfully attracted and maintained a high enrolment of adolescent females by meeting their interests and needs. Insight will be gained into the features of the course that parallel the pre-requisites of motivation in self-determination theory and how those elements impact the students' perceptions of physical activity. The links between motivation and the outcomes of self-determination theory, including students' attitudes towards physical education, their perceived well-being, and their physical activity behaviour will also be explored.

Importance of this Research

Research of this type is important because many young women today are insufficiently physically active to achieve health benefits. A large number of adolescent females opt out of elective physical education due to dissatisfaction with the nature of typical PE classes. The unique, elective PE course selected for this research will provide insight into how young women respond to a course designed to meet their interests and needs.

Participants Selection

You are being asked to participate in this study because you are teaching the course of interest. Your actions will help answer the research questions.

What is Involved

If you agree to voluntarily participate in this research, your participation will include teaching as you normally would while being observed. Participant observation periods would occur approximately once per week or once per activity.

Inconvenience

Participation in this study may cause some inconvenience to you, because there will be an outsider observing your class.

Risks

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

Benefits

The potential benefits of your participation in this research include providing insight into a unique physical education program that other teachers may choose to use as a model for their own classes. The perspectives you provide may encourage teachers to make changes to other PE programs, ultimately increasing physical activity participation and positively impacting the health of adolescent girls.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data from the observation sessions will be removed.

On-going Consent

To make sure that you continue to consent to participate in this research, I will outline the requirements of participation in the study before entering into a researcher-participant relationship both verbally and through this consent form. I will also ensure that you are aware that you can withdraw from the study at any time with no consequence to you.

Anonymity

In terms of protecting your anonymity pseudonyms will be assigned to each participant and to the school at the data collection stage and will be used in the dissemination of results.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by password for computer files, a locked cabinet for hard copies, and the destruction of data after the thesis is defended.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: thesis defense and a published article in a journal.

Disposal of Data

Data from this study will be disposed of after the thesis is defended. Electronic data will be erased, and paper copies will be shredded.

Contacts

Individuals that may be contacted regarding this study include the researcher, Leila Pfaeffli, and the researcher's supervisor, Dr. Sandra Gibbons. Contact information is listed at the beginning of this form.

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

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

_____	_____	_____
Name of Participant	*Signature*	*Date*

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix B: Data Collection Methods and Instruments

		Antecedents of Motivation		
	Autonomy Support	Autonomy	Competence	Relatedness
Focus Groups ▪ Cost effective method used to gain insight into unobservable behaviour, thoughts, feelings, interpretations, and past events ▪ Will gain information into the participants' perceptions of need satisfaction, motivation, and physical activity	▪ What has your teacher done to motivate you in this course?	▪ How have you contributed to the selection of activities in this course? ▪ What activities were new to you in this class? ▪ Have there been a variety of activities to do during the course? How did you enjoy /not enjoy that?	▪ What do you think about the activities you've done in this course? (challenging, enjoyable, boring) ▪ How did you feel the first time you tried a new activity? ▪ What goals have you accomplished this semester?	▪ Describe the relationship you have with your teacher... ▪ Describe the relationship you have with your classmates... ▪ How often did you get to work on your own? In groups? Which did you prefer and why? ▪ How supported do you feel to try your best? ▪ How do you feel about the female only environment?
Participant Observation ▪ Used to gain insight first hand into how the participants move and interact in physical education ▪ Will gain information on the learning environment and course content	▪ Are the expectations of the students clear? ▪ Does the teacher give the students a meaningful rational and acknowledge the students' feelings for activities they dislike? ▪ Does the teacher use controlling or supportive language?	▪ Are the participants involved in activity selection? ▪ Do the participants choose with whom to partner with? ▪ Can the participants choose what they wear? ▪ Can they choose how to be assessed?	▪ Are the participants mastering skills? ▪ Does the teacher assist students who are struggling? ▪ Does the teacher provide constructive praise and encouragement? ▪ Does the climate feel competitive or more cooperative?	▪ Are the participants getting along and interacting with each other and the teacher in positive ways? ▪ How is the teacher interacting with the students? ▪ Do the students participate in group activities?
Documents ▪ Personal Journals and the course outline can provide information about the participants, their situations, and the program ▪ Can augment the data collected by observation and focus groups	▪ Does the course outline demonstrate if student input was used in activity selection?	▪ Describe how having input into the class activities affects your motivation towards physical activity... ▪ Was there a time when you did not get your choice of activity? How did that make you feel?	▪ Describe an instance where you improved or achieved a goal. How did that make you feel?	▪ Are there students you do not feel comfortable working with (do not list names), or do you cooperate with everyone for the most part? How does that affect your enjoyment of the class?

		Outcomes in Physical Education			
	Motivation	Physical Activity	Affect	Cognition	Well-Being
Focus groups	▪ What influenced you to enrol in GGA? ▪ How would you describe your enjoyment and interest in this class? (what do you like about it?) ▪ What do you not enjoy in this class? ▪ How does this class compare to your elementary and middle school physical education courses?	▪ What was your physical activity level like before this course? What are they like now? ▪ What will your activity levels be like after this course in finished? ▪ How comfortable are you to do some of the activities you've done this term on your own? Which ones and why?	▪ What have you done in this class that will affect your physical activity after the semester is over? ▪ What do you like about the activities you've done in this class? ▪ How have the activities you've done in the course influenced your feelings towards physical activity?	▪ How has this course affected your ideas about health and physical activity? ▪ What have you learned that is memorable or surprising? ▪ How have your skills and knowledge of different activities improved?	▪ How has this class made you feel about yourself? ▪ What factors lead you to feel this way? ▪ How do you think being active influences your health? ▪ Has this class made you think differently about your overall health (why or why not)?
Participant Observation	▪ Are the participants enjoying the class and having fun? (laughing, smiling, engaging)	▪ Are the participants engaged in physical activity for the majority of the class duration? (>50%) ▪ Are the participants persisting with high effort?	▪ Do the participants appear to be interested and enjoying the class?	▪ Are the participants focused and concentrating on the lesson?	▪ Do the participants appear to be happy and positive during PE 10-12?
Personal Journals	▪ Describe your motivation to participate in previous PE classes. How does it compare to your motivation in GGA? Explain why it changed or did not change.	▪ Describe your motivation in GGA this week. What influenced your level of motivation and participation?	▪ Describe how you were feeling in GGA this week. What contributed to your attitude towards GGA?	▪ Describe one thing you learned this week in GGA...	▪ This week in GGa I enjoyed or didn`t enjoy... ▪ How did this class affect how you feel about physical activity?

Appendix C: Observation protocol

Time of observation:
Date:
Place:
Who is present:
Observer:
Role of observer:

Length of Activity:		
Observation Cues	Descriptive Notes	Reflective Notes
What course activities are occurring? What is the level of physical activity? How are the participants interacting with each other? With the teacher? Do the participants seem motivated? Do they seem to be enjoying the class? What kinds of organizational practices are evident? (roles, authority, rules) What is unique in the setting? How am I being perceived? Any other questions from appendix B...		

Appendix D: Pseudonyms and Abbreviations

The PE course examined in the case study: Girls Getting Active (GGA)*

The fitness center the class went to for aerobics or dance lessons: Fun Fitness*

The teacher of the class: Ms. Smith*

Physical Education (PE)

Self-determination theory (SDT)

Focus group (FG)

- Number 1-5 indicates which focus group the quote was from, the individual participant is not indicated

Personal journal entry (JE)

- Number 1-7 indicates which journal entry question the quote was taken from, the participant is not indicated

Participant observation session (OB)

- Number 1-16 indicates which participant observation the quote is from

*indicates pseudonym