

How can we positively motivate adolescent females in physical education to further promote lifelong physical activity?

**by
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Ethics Statement

The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

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Abstract

Students in British Columbia are required to take Physical and Health Education 10 (PHE 10) as a graduation requirement, and for many, especially females, it may be the last Physical Education (PE) course they choose to take. As a secondary PE teacher, I felt it critical to research this further by documenting my PHE 10 students' experiences using a mixed methods survey. Students completed a 4-point Likert scale questionnaire and open-ended questions on what they enjoyed, disliked, felt was an idyllic class, and why or why not they selected the elective Active Living 11 course (the next course in the PE sequence). The data was analyzed highlighting similar themes with the literature that indicated an increased dropout from sport, especially by teenage females. The survey results with respect to general enjoyment, inclusion and satisfaction in PE were high. The female student average of 3.05 notably lower than the 3.5 average of the males. The imbalance was also noted with the percentage of females opting to take senior elective PE courses at 32% compared to the males at 60%.

Keywords: positively motivate, physical education, lifelong physical activity, barriers to physical activity, gender stereotypes, role models, PE curriculum and choice, PE teaching

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List of Acronyms

GAL	Girls Active Living
KWIC	Key Words in Context
PE	Physical Education
PHE	Physical and Health Education
SDT	Self Determination Theory
SFU	Simon Fraser University
UVIC	University of Victoria

Introduction

As a young girl growing up, I was active and involved in many sports and recreation activities. As an elementary school student “gym” was my favourite class and in high school physical education continued to be my passion. I was competitive, successful, and took almost every physical education class offered. I had several wonderful role models as teachers and knew from a young age that a career teaching physical education was my calling. Sadly, my positive experience is the exception rather than the norm for most female students as many choose to opt out of taking PE classes as soon as possible. Why is that and what can be done to better engage and retain students, especially females, in physical education classes?

Physical Educators have an opportunity to encourage students to be active and to try to promote lifelong participation in physical activity and sports. However, in many circumstances students can be disengaged from PE and even unmotivated and reluctant to participate. This current research focuses on that aspect, and importantly on adolescent females and their experiences when taking PE classes. Within the secondary school that I work in, significantly more males elect to take senior PE classes. It is typical in these courses to have only three to five females in each class. It is important to examine the statistics and data with respect to female dropout rates from sports and activities, and potentially find connections to experiences in physical education. The data was analyzed in a multitude of ways and highlighted similar themes to the literature. Overall, positive experiences in PE classes involve many factors including their perceived competence in the sport, choice of sport and activity and if they feel included. If these needs are met, students report enjoyment and satisfaction in PE classes. With this being stated, the students in this study did report mostly positive experiences within PE however, the mean of males compared to females with respect to overall enjoyment and satisfaction was higher. In the end, a greater percentage of males are taking that optional elective PE class than females, so even though they are having a good PE experience, less are signing up for senior PE classes. This trend is worth exploring further, and for PE teachers it should be a priority to promote lifelong physical activity. It also raises the question of if women are reporting positive experiences, why are they not choosing to continue their engagement in sport and physical education?

Have women been overlooked in physical education, as students, educators, and leaders? Women have been traditionally under-represented in both the leadership areas of physical education and sporting realms for years. There have been movements, laws, and programs to improve exposure and opportunity for women, yet many still feel like a minority in these patriarchal spaces. Breaking down barriers can be challenging, especially when tradition often dominates the field. As a female PE teacher, I have experienced the challenges that arise from working in a male dominated field. As well, I have been both a coach and athlete and have experienced the benefits that sport and physical activity offers, not just physically, but socially and emotionally as well.

High school students face many challenges, and potentially, PE class could be one of them. It is a unique environment where one may feel on display as it is not a traditional classroom setting where everyone is seated and orderly. Literature and news sources reinforce that female students also face challenges unique to them, as body image concerns, lack of self confidence and fears around sport and activity could discourage them from enjoying PE or choosing a PE elective once they have completed their mandatory credits. To provide context, the Government of British Columbia requires students to earn a minimum of 80 credits; however, just four PE credits are required, and those come from Physical and Health Education 10 (PHE 10). After these credits are completed, physical education is no longer a required course and is an elective, whereby students have the option to choose it or not.

This research is important as it will highlight both the strengths and struggles our adolescent students are currently faced with in their PE class and how we can improve our practice to be more inclusive, student centred and to hopefully foster a positive attitude towards both sport and activity. This issue of opting out of exercise and activity opportunities is not just in the school setting, but is likely occurring in the community as well, and further exacerbated by the lingering effects of the Covid-19 pandemic. This high opt out rate is important to emphasize, as the PE class experience of these adolescent females has an important and lasting influence of them and their future choices.

Literature Review

The value of Physical Education class is often overlooked, as it is not a class held to the same academic stature as Math, Science, English or Social Studies; however, it is important, not only for supporting daily physical activity but for lifelong physical activity. Canadians are encouraged to integrate physical activity into their everyday life as it can lower levels of stress and improve energy (*Health Canada/Physical Activity*, 2011). These factors can help one to live a healthy and fulfilling life. Positive childhood and adolescent experiences in sport and activity can foster a desire to continue to embrace an active lifestyle into adulthood. Of the utmost importance as well is how our female adolescents are experiencing physical education and how this is affecting their self-confidence, experience and engagement in school and attitude towards being physically active.

Similarly, Pangrazi and Gibbons (2009), suggest “[t]he primary mandate of physical education (PE) programs in Canada is to help students develop skills, knowledge, and attitudes necessary to be physically active throughout their adult lives” (p. 223). Despite this mandate and statement, Gibbons reported that, “In British Columbia, for example, fewer than 10 percent of female students (compared to 24 percent of male students) chose to enroll in PE once it became an elective course after grade 10” (p. 223). It is important to explore the reasons behind this level of drop off, so we as educators can mitigate this and try to positively motivate our students, connect to them, and create an environment where they are willing to participate. Recent research also highlights, “the increases in sedentary time as a result of COVID-19” (Runacres et al, p. 21, 2021). This shows that barriers to physical activity and sport are complex.

The literature is congruent with what I have observed as a public secondary PE teacher in my classes, across other classes and learned through conversations with colleagues in my department. There are barriers and perceived barriers by female students which influence their attitude and participation in PE. My research was done intentionally to understand these experiences, as I have witnessed the low number of female students selecting to take the elective Active Living 11 or 12 course over the past few years.

The literature as to why students, especially females, are opting out of taking PE courses can be categorized into three broad themes. There is considerable overlap between the general themes as they relate to identifying:

- 1) the barriers to participation,
- 2) the necessary motivation, intrinsically and extrinsically, to inspire lifelong participation, and
- 3) the influence and role of the physical education teacher.

Various aspects of these themes, both positively and negatively, regularly come up in conversations I have had with other females, young and old, regarding their high school PE experiences. The experience of high school is similar for many, and these stories, alongside the literature and my own teaching experiences helped to frame an intentional survey to provide meaningful data on the experiences of adolescent students, specifically females in the PE setting.

One aspect that the literature does not address, that I observe around student course selection time, is the external pressure they feel to select academic or program specific courses for admission to post secondary education programs. These academic courses are prioritized ahead of elective courses that students may sincerely enjoy.

Barriers to Participation

Recognizing the potential barriers is not new in schools, but making significant change is a greater challenge. It is important to investigate barriers to participation in the public secondary PE setting, especially those that influence female students. Barriers can come in many forms including, but not limited to, personal feelings of ability, safety concerns, issues specific to gender for both males and females, enjoyment of activities and feeling valued. (Murphy et al., 2014). Barriers to participation are further exacerbated by the fact that a significant part of student assessment in the physical education setting is based on and tied to participation. (Gruno & Gibbons, 2016). the exact mark breakdown however can vary greatly between teacher, school, grade and on a macro scale; districts, provincially or even internationally but regardless, it is significantly impactful.

Themes around perceived barriers to participation vary throughout the literature. Sandra Gibbons, a professor of Exercise Science, Physical & Health Education at UVIC, focused her research primarily on young women in physical education and their participation in sports. Her methodology in the two studies reviewed, is largely interview-based, and provided rich text and experiences from the students. I chose to emulate this strategy in my study as well and solicited personal accounts and quotes directly from students. When analyzing her study and how it addressed barriers to physical education, she suggested, “to learn effectively, these female students need to feel a sense of safety and respect” (2009, p. 237).

Further to safety and respect, many of the articles and studies around barriers to participation and success in physical education; mentioned the perception of gender expectations and the influence that society has on our adolescent population navigating their own identity in the PE setting (Martins et al, 2021). The role of gender and the concept of hegemonic masculinity, defined as a reinforcement of attitudes and actions that perpetuate gender inequality where men dominate over women and minorities, reinforces ideas of societal expectations as part of the problem (Kalkan & Engin, 2020). For example, the perceptions that sweat or sweating is not feminine or that athleticism and competitiveness is perceived as masculine. Within this traditional umbrella of hegemonic masculinity further subtopics around negative discrimination, discourses, and expectations came to light. This article resonated with my current research context, as it is a very traditional environment that has tones of hegemonic masculinity. It is important to recognize that these ideals could be subliminally reinforced in a PE class, just because it has been so male dominated for many years.

Intrinsic and Extrinsic Motivation

The second theme, while overlapping with other potential barriers mentioned previously, is to examine the necessary motivation, intrinsically and extrinsically that leads students, particularly females, to adopt or maintain an active lifestyle going forward. In 2018, Leisterer and Jekauc conducted a qualitative study on physical education and students' emotional experiences. The intention behind this study was [that], “Physical Education (PE) can be the starting point for many students to be physically active their whole lives”. This statement is a powerful reminder that not every

student participates in extracurricular sports and some students only physical activity and sport exposure may occur in PE class. In their study, Leisterer and Jekauc quoted The International Charter of Physical Education (PE), Physical Activity, and Sport of UNESCO.

[From article four: Physical education must inspire lifelong participation . . . Early positive experiences of play, games, and physical activities should be prioritized for all so as to lay a foundation of the knowledge, skills, attitudes, and motivation necessary for the maintenance of lifelong participation in physical activity and sport [1] (p. 4).

Ntoumanis studied motivation for physical activity using Self-Determination Theory (SDT) Framework in a study about participating about participating in optional school physical education. He reminds us that, “[I]n order to increase physical activity levels, it is important that children are sufficiently, and more important, appropriately motivated to participate in PE lessons” (p.444). “SDT distinguishes amongst three types of behavioural regulations with varying degrees of self-determined motivation: intrinsic, extrinsic motivation, and amotivation” (p. 444). Of interest is that “boys scored significantly higher on intrinsic motivation than did the girls” (Ntoumanis, p. 450). Ntoumanis is transparent in the discussions regarding that variance and other correlation errors could be a result of the similarity of phrasing or wording of some indicators, but despite this, the results showed that PE teachers can play an important role in supporting students' psychological need satisfaction. He concludes his study by emphasising, “[that] self – determined motivation can predict intentions to participate in optional PE and actual participation status” (p. 452). This is worth considering as the subtopic of promoting lifelong physical activity and preventing sport and activity dropout is explored further and how this connects to the role of the PE teacher.

Teacher Influence and Student Autonomy

The third major theme from the literature examines the critical influence that the teacher holds in determining student satisfaction and experience. Physical Education teachers have a significant influence on their students by ways they approach the class, teaching style, rhetoric, the sport, and culture they perpetuate amongst others (Azzarito, Solman, & Harrison, (2006); Simon & Azzarito, 2016, p.105). Simon and Azzarito interviewed minority female PE teachers in their exploratory study. The intersectionality of being a minority whilst navigating a traditionally masculine field fostered interesting

analysis and perspective from a side that can potentially be underrepresented. Many of the teachers they interviewed reported an ability to connect with minority students and female students in ways that their white male colleagues could not. The importance of role models, especially female ones, can also assist in removing the stigma around participation and stereotypes in the PE setting. This supports the importance of positive role models and the influence they hold in removing barriers for adolescent females in PE. This connects directly to the experiences of the students at the high school where I work. The department is predominately male, I am the only female, and there is no visible minority representation. This could potentially be a factor in the connection or engagement of students in not only PE, but in other classes and non-academic aspects at school as well.

The approach and rapport a PE teacher have with their class can go a long way. The term autonomy was mentioned in multiple studies, specifically students need autonomy to flourish in the PE setting. It is a critical part of the self-determination theory and in my experience can engage students of all abilities and genders if they feel that their voice is heard. This is by no means a role reversal whereby students run the class and chose teams, it is simply listening to feedback, offering choices, and respecting their opinions. If this need is met, they will be more likely to participate. Using interviews with two female British Columbian students (grade 10 and 11), Gibbons and Gruno conducted a follow up study from their previous work discussed formally in this literature review. The female students in the interviews were taking Girls Active Living (GAL) which is a tailored PE course as an alternative to the co-ed PE programs offered in grades 10, 11 and 12. Through these interviews Gibbons and Gruno discovered four major themes (pp. 160–163):

- Variety and cooperation within the course content
- A fun and welcoming environment
- Fair and private assessment
- Confidence, social safety, and competence

These themes provide further insight into how to better connect adolescent females to positive physical education experiences. These dimensions were examined in the findings of my research survey to see where the student responses addressed these areas. The quantitative and qualitative findings of the survey will be important as the

research supported the role of teacher influence, curriculum, and class choices as paramount in encouraging physical activity and preventing drop out. How can teachers foster an environment that positively address these themes for every student or is this something that only happens in GAL class as the environment is safer? Both questions are worth investigating moving forward, as some female students may be more comfortable in a class with their own gender,

Methodology

I created an early prototype of my survey in the spring of 2022, when conducting preliminary research on female participation in PE class with respect to what could be barriers and what could be advantageous to their success. At the time I only had my own observations and experiences as well as conversations with my students in PE 9 and 10 about their future elective choices in terms of PE classes. Also, when doing the early prototypes, I didn't know my course load for the upcoming teaching year, so designed the survey for grade 9 and 10 students. My course load was originally three PE 10 classes and one Women's Fitness 11/12. It got changed last minute to two PE 10 classes instead of three, and an Active Living 11/12. Therefore, my survey was administered to my two PE 10 classes. At school the classes include students of all genders and run semester long, therefore I saw these students everyday from February to June.

The survey design incorporated two styles of questions (quantitative and qualitative) with the intention being to "provide a greater variety of depth and breadth of information which is not possible utilizing singular approaches in isolation" (Almalki, 2016, p. 288). Moreover, combining quantitative and qualitative questions would support the students' survey answers with their own individual background experiences (Laitsch, 2022). The first part of the survey gathered general student demographic information such as age, gender, and grade. Next, students answered a six-question matrix survey by use of a 1-4 Likert scale. This was designed to have forced choice questions, so students would have to provide an opinion. In this research it was important to have "indicate ipsative (forced) choices where there is no perceived value of indifference/neutrality of the researcher" (Joshi et al, 2015, p. 398).

A copy of the survey can be found in Appendix B. The questions were designed so that students indicated how much they enjoyed PE, felt included, their level of physical activity outside of PE and if they would prefer a class of the same gender. Follow up questions allowed students the opportunity to elaborate on their own experiences within PE. The survey questions were derived from earlier themes in the literature review that examined potential barriers to participation (Gruno & Gibbons, 2016), motivation and desire for lifelong participation (Ntoumanis, 2005) and teacher influence (Quennerstedt, 2019). The combination of numerical data from the first six questions and the qualitative responses from the open-ended questions reinforced the themes and trends seen in the literature and through ongoing informal observations with respect to student participation and the desire to continue taking PE courses once they become optional.

The Research Question

Specifically, the research question is, “How can we positively motivate adolescent females in physical education in order to prevent dropout from PE, sport and activity and to further promote lifelong physical activity?” The intent is to identify gaps and flaws in current PE settings, whilst looking for opportunities and avenues to motivate and inspire adolescent females to take PE as a senior elective course and to further motivate them to be healthy and active in their adult lives. From the beginning I wanted to get the opinions and experiences of students in the PE classes, because they were the ones experiencing it. The fact that the students were in grade 10 benefited the study, as they had already had one year of PE class at this secondary school. I was transparent in my explanation of the survey, data, anonymity, and consent and wanted the students to feel comfortable during the survey. Getting qualitative data was important because “[It] can provide opportunities for participants to have a strong voice and share their experiences across the research process, and they can facilitate different avenues of exploration that enrich the evidence and enable questions to be answered more deeply.” (Shorten & Smith, p. 75, 2017). This then allowed for trends and allowed the opportunity for trends and patterns to appear, which helped to illustrate the barriers adolescent students, specifically females, dealt with. The intention behind gathering quotes was to potentially connect Likert scale trends to the students’ experiences. A 1-4 forced choice Likert scale was used to “eliminate the possibility that respondents will

misuse the midpoint” (Chyung et al, p. 5, 2017). In my experience, students can be apathetic when it comes to survey answers, and forced choice was intended to get them to think deeply about their experiences and whether they agree or not, and to what scale. This depth of data indicated trends for all PE 10 students and highlighted differences and similarities between the genders.

Another aspect of the literature that influenced the design of the survey questions, was determining the students’ participation in extracurricular activities. It was important to understand whether students were getting all their sport and activity from PE or whether they were involved in extra-curriculars that provided them these experiences as well. The final theme that was explored in the literature was around student autonomy and choice when it comes to PE class. This was a critical part of my review, as it framed many questions for the survey and gave the students an opportunity to elaborate on what they enjoy in PE class, whether they feel included, and that the teacher takes their opinion into account. This student autonomy in the class connected back to self-determination, which will be further evaluated in this review and can foster further participation and enjoyment in PE class.

This ultimately led the survey to be mixed methods style. The intention behind this was to “provide a greater variety of depth and breadth of information which was not possible utilizing singular approaches in isolation” (Almalki, 2016, p. 288). Moreover, combining quantitative and qualitative questions supported the students’ survey answers with their own individual background and experiences (Laitsch, 2022).

The Researcher Role and Positionality

When reflecting on high school, I can seldom remember individual lessons from different classes, but rather memories that include friends, laughter, and positive teachers. A quote that always resonated with my own teaching credo is from Maya Angelou, “I’ve learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel.” From my experiences as a student and teacher, people want to feel connected and included, and personally, I felt the most empowered in PE classes and extra-curricular sports. I felt competent and supported in these environments and felt I made a difference. This feeling wasn’t always intrinsic however and it was through reflections and discussions with peers and friends,

and the significant role the teacher played inspiring connections and motivation. As a PE teacher, I am acutely aware of this and understand that students may not feel that same draw to PE class as I did, and those are the students who need that support and motivation the most. The literature indicates that females are dropping out more than males and that this has a long-term effect on their self-esteem, confidence and feelings towards sport and physical activity in adulthood (Chen, T. J., Watson, K. B., Michael, S. L., & Carlson, S. A. (2021). I feel a level of responsibility, especially to the female students in PE, to encourage them, listen and connect – because as the literature stated, they are the most susceptible to disengaging from sport and activity.

This study is rooted in my own experiences, and the stories from my friends and colleagues. It is also founded in my own challenges as a female in a male dominated field. I have shared experiences that many adolescent females have, and their voices are the most important in how we can better meet the needs of students in PE, as the teaching landscape is constantly shifting. PE classes have been taught very traditionally for a long period of time, but is that what is best for students, especially as technology advances, assessment changes and social landscapes shift?

Research Site and Participants

This data was gathered at a large public secondary school in Metro Vancouver Regional District. This school has approximately 1450 students in grades 9 to 12 of diverse backgrounds and socio-economic status. The participants in this study were students in two of my PE 10 classes in the spring semester, which ran from February to June. The participants were told ahead of time about the anonymous survey and the details around their potential participation. Students were given an information and consent form that was approved by the school district to take home to their parents or guardians. The parents signed permission forms were collected prior to the survey day.

Data Collection

The process of the official data collection started in early April 2023, as I introduced the research study and discussed the completion of the optional survey at the beginning of the classroom unit on CPR. Therefore, students completed the survey individually in a classroom setting; it was impossible to distinguish those who were

completing the survey to those working on other tasks. During the day of data collection, before they had the option to start the survey, I read the invitational script that was previously approved by SFU ethics. This statement reiterated that the survey was anonymous, low risk, that their participation was voluntary, and that data would be deleted by September 2023 once the project was completed. All the details explaining the purpose, intention, and setting were reiterated in a low pressure, accommodating, and non – intimidating tone.

The response rate from the second block PE 10 class was 11 students, out of 25 total students that were in class that day. The response rate for my fourth block PE 10 class was 20 students out of 29 students in class. One student in the fourth block class selected the option to not consent to complete the survey, therefore there was 31 responses in total, only 30 provided data to analyze. Of these 19 identified as female, 10 as male, and one as non-binary. The number of responses compared to the total number of students was a rate 57.4%.

The students who chose to participate in the survey scanned a QR code on their devices. The survey was on Microsoft Forms, which is a familiar platform to the students as they complete many surveys in their other classes and weekly in their homeroom. Before students had access to the survey, there was an introductory statement and informed consent which they had to read and then check yes or no to consent to the survey. This statement was approved by both SFU ethics and the school district. If they read this statement and agreed to consent, by clicking yes, then they had access to the questions. The first questions asked what grade they were currently in, and their gender identification. Then, there were six questions using the 4-point Likert scale in the second section, and the five open-ended short answer questions that followed. If they read the statement and elected to not participate, they could click no and then the survey registered that and they did not get access to the questions.

Data Analysis

The data was transferred to a secure Microsoft excel file. The responses were anonymous and originally ordered by the time stamp of completion. For ease analysis, the quantitative and qualitative responses were examined separately. The responses to the six questions using the 4-point Likert scale were sorted and organized. This platform

provided the opportunity to examine the data in several ways and to also use the tools in Excel to calculate percentages, mean, standard deviation and T-Test scores as well. Excel tools also created a variety of figures including histograms and charts that provided visual representations of the findings.

Initially, the data was organized according to the gender identification of the participants, with the female entries (19), then the male entries (10) and the one nonbinary participant. Then the data was further organized according to the six individual questions, whereby points were given to answers on the Likert scale; strongly disagree was 1 point, disagree was 2 points, agree was 3 points and strongly agree was 4 points. This is a traditional Likert scale, “composed of a series of four or more Likert-type items that are combined into a single composite score/variable during the data analysis process. Combined, the items are used to provide a quantitative measure of a character or personality trait” (Boone, p. 3, 2012).

I then explored the central tendencies of each of the individual questions and sorted the results by gender. The data table in Appendix D shows the frequency of responses separated by gender and by total responses for each of the six questions. For every question and gender, the three measures of central tendency, mean, median and mode, were calculated and compared. Of the three options for central tendency, the mean was the best representation of the variety of responses. All three were fairly close in value but the mean calculated using the 4-point scale determined the average response as a value, rather than merely the most frequent or middle response for this relatively low sample population.

Further statistical analysis was conducted using the data analysis tools available in Excel and is also reflected in Table 1. The type of T-test selected was that of a two-sample test with unequal variants. This was selected because the female sample size was significantly larger than the males. Using a one-tail test allowed the use of a directional hypothesis when interpreting the results between female and male responses. A P-value of <0.05 indicates a greater probability that the null hypothesis is true and was supported as for the males enjoying class more, feeling included, and being physically active outside of school compared to the females. The female and male responses were most similarly aligned with respect to believing the teacher considered

their opinion and not wishing to move to same gender classes and as such was reflected in the p-values that were not statistically significant.

Table 1. Statistical Calculations

Survey Questions/Statements	# of Responses	Likert Point Score	Mean	Mode	Variance	t-Stat (2 sample unequal variances)	P(T<=t) one-tail	t Critical one
Q1 I enjoy PE class - Total	30	96	3.20	3				
Female Responses	19	58	3.05	3	0.39	2.04	0.03	1.72
Male Responses	10	35	3.50	3	0.28			
Q2 I feel included - Total	30	97	3.23	3				
Female Responses	19	57	3.00	4	0.39	3.1	0.00	1.71
Male Responses	10	37	3.70	3	0.23			
Q3 There are sports I enjoy - Total	30	96	3.20	3				
Female Responses	19	59	3.11	4	0.43	1.1	0.14	1.74
Male Responses	10	32	3.40	3	0.49			
Q4 Teacher considers student opinions - Total	30	98	3.27	3				
Female Responses	19	64	3.37	3	0.25	0.54	0.30	1.79
Male Responses	10	32	3.20	3	0.84			
Q5 I am physically active outside of PE class - Total	30	82	2.73	3				
Female Responses	19	48	2.53	4	0.82	2.08	0.03	1.72
Male Responses	10	32	3.20	3	0.62			
Q6 I would prefer same gender classes - Total	30	67	2.23	2				
Female Responses	19	43	2.26	2	0.87	0.22	0.42	1.71
Male Responses	10	22	2.20	2	0.4			

A histogram, Figure 1 was created using only the responses of those who identified as female or as male, and with the frequency of response converted to a percentage of the responses for that gender. While not wanting to discount the feedback of the non-binary respondent, excluding it for this comparison allowed a direct, by percentage of respondents, response comparison between females and males. This visual more accurately illustrated the comparison between genders.

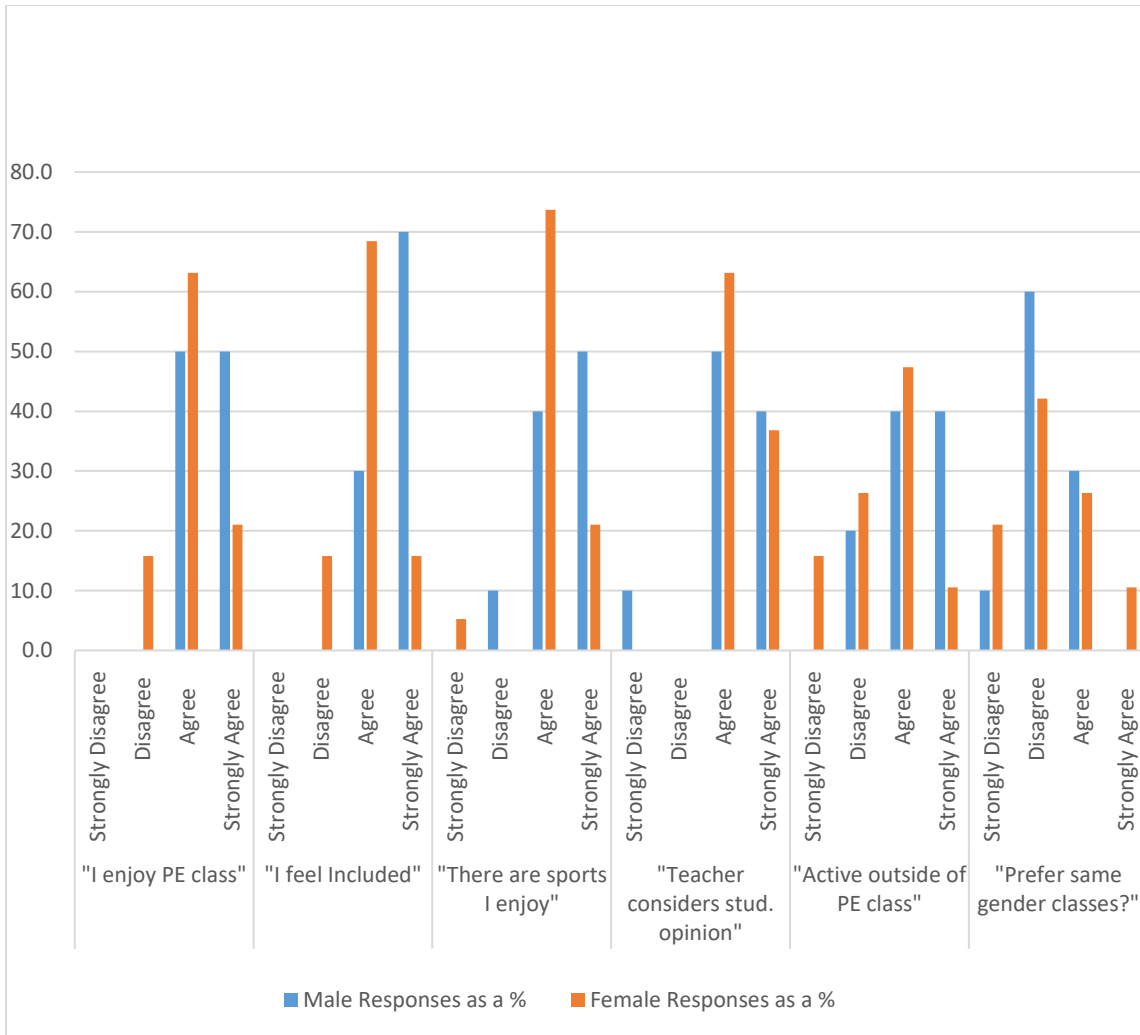


Figure 1. Survey of Responses as a Percent for Gender

This led me to further explore the student's enjoyment of the course, and how this further connects to the students potentially taking an active living 11 elective. I examined the questions that focused more specifically on enjoyment. The question about enjoying PE, feeling included in PE and sports enjoyed in class were the focus when comparing the male and female responses. Figure 2 compared the mean average responses by males and females and provided a visual snapshot in the form of a histogram. This indicates that there is a strong level of satisfaction in the PE class, with all mean averages being 3 or above, but also demonstrates that there still is greater enjoyment by the males.

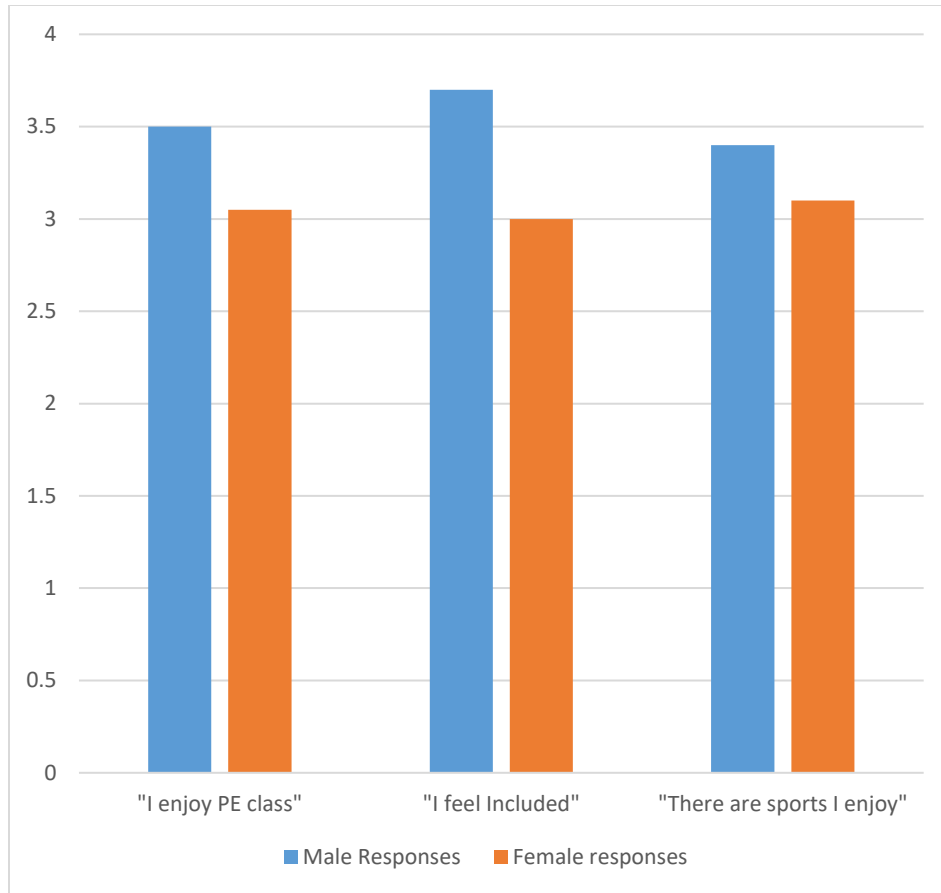


Figure 2. Comparing Mean Averages of Responses (Males and Females)

For the qualitative data from the short answer questions, I began by organizing all responses on a secure word document. From there I created a chart for each individual question and sorted the responses into a column for each gender. This allowed for the quotes to be organized according to gender, for each question. I used the highlighting feature on Microsoft word, which allowed for key words and phrases to be identifiable. I searched for sub-themes and larger themes for each question individually, and then cross-referenced the responses to the Likert scale answers. I wrote notes of words or statements that were repeated and also referenced the themes from the literature and kept the literature in mind, while also applying my own experiences, observations in class, trends within my PE department to identify themes. Throughout my entire research project, I utilized a research journal. I used this journal in classes and throughout my own field work. *Techniques to Identify Themes* by Gery Ryan and their colleagues resonated with my approach, suggesting:

Themes come both from the data (an inductive approach) and from the investigator's prior theoretical understanding of the phenomenon under study (an a priori approach). A priori themes come from the characteristics of the phenomenon being studied; from already agreed on professional definitions found in literature reviews; from local, common-sense constructs; and from researchers' values, theoretical orientations, and personal experiences (Bulmer 1979; Strauss 1987; Maxwell 1996).

As mentioned above, I looked for repetitions in the answers, for both words and phrases and highlighted those in different colours to keep organization. I also looked to compare and contrast the responses across genders. As Ryan et al state, repetition is one of the easiest ways to identify themes. Some of the most obvious themes in a corpus of data are those "topics that occur and reoccur" (Bogdan & Taylor, 1975, p. 83) or are "recurring regularities" (Guba 1978, p. 53). Then, I created word lists and used the Key Words in Context (KWIC) technique to collect further data, as the literature states "If you want to understand what people are talking about, look closely at the words they use. To generate word lists, researchers first identify all the unique words in a text and then count the number of times each occurs" (Ryan et al, 2003, p. 96). Finally, I summarized the data for the females, males, and non-binary students for each of the open-ended questions. I used a multitude of methods for this qualitative analysis to get an accurate representation of the students' responses. Both the summary of my analysis, (which reinforced the major themes, sub themes and trends of the students' experiences) and the KWIC technique (to analyze word usage and repetition) added depth to the interpretation of the data.

Themes that are worth highlighting are around team sports, which get mentioned by almost every student when discussing activities, they enjoy and disliked. Words like inclusion, fun and competency frequently appear throughout all short answer questions. This will get explored within the findings section. These themes, sub-themes and key words, are cross referenced with the quantitative data to add even more depth to the analysis.

Trustworthiness (Validity and Reliability)

I took care to complete background research, before creating the survey and my script of what I would say to the students to introduce the survey. It was important to learn how to properly approach subjects in a research study to ensure authentic results,

especially with adolescent students. I wanted the students to feel safe, comfortable and at ease during the one-time survey. I re-iterated that the survey was not part of their grade or the course content and was mindful of the concept of social desirability. This can be defined as “the need for social approval or acceptance can be achieved through culturally acceptable and social behaviours” (Keillor, 2001, p. 2). This illustrates an important factor when gathering information and experiences from teenagers, as they do seek external validation from peers and adults and could potentially answer questions in a way, they would assume their peers or others would expect. I took extra precautions to ensure that students were not singled out or observed if they chose to complete the survey. The survey was administered in a classroom simultaneously with a CPR test, so when they completed the test and worked on other assignments, it provided that low pressure environment. As well, the seated students had dividers in between each other from the test, so it offered them the chance to answer individually and at their own pace, without peers looking at them, or to not answer without being on display.

Upon reflection, the Likert scale six questions had a weakness that is important to identify. The affirmative or positive response was agree or strongly agree which displayed satisfaction with the existing PE model. The questions were phrased concisely and had a consistent flow and theme; however, the wording of the final question; “I would prefer a class of the same gender”, the positive or satisfaction response was disagree or strongly disagree. In hindsight the question worded, “I prefer the PE classes as co-ed or all gender”, would align with the previous five questions. Figure 3 presented a visual display of how the responses to question 6 leaned heavily to the “disagree” or negative side in spite of the students demonstrating a more overwhelming “agree” or positive feelings with respect to their experiences. This was the original clue that there was a disconnect, and likely confusion, caused by the wording of the question. In hindsight, this likely was confusing to the students and added a layer of challenge when analyzing the data.

The school district policies on active consent created an additional challenge. While SFU ethics approved the study with students being able to consent for themselves, the school district wanted a parent/guardian active consent letter to be signed and returned. This was challenging as students needed multiple prompts and reminders to get the forms both signed and returned.

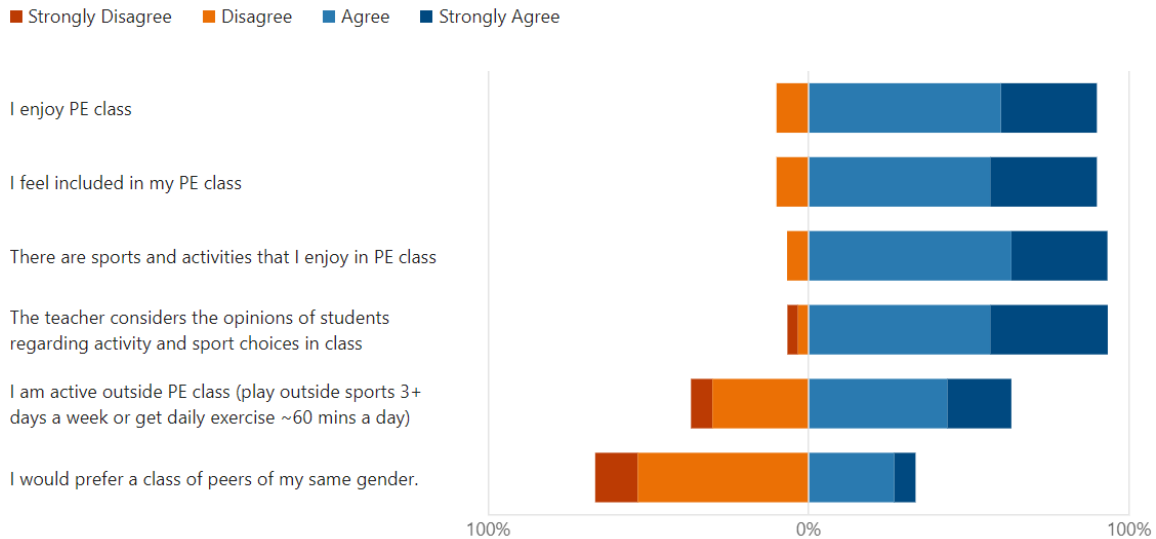


Figure 3. Visual Representation of Student Responses

Another factor that could potentially create limitations in the quality of responses in the survey was the students' enthusiasm and attitude around surveys. At the school, online surveys are used very frequently, and this created a palpable level of survey fatigue from the students. I observe this phenomenon in my weekly advisory whenever students are asked to scan a QR code and fill out a survey about a multitude of different school related items, timetables, self assessment, and reflections. Unfortunately, this has caused students to have an apathetic attitude towards surveys. This survey was also administered in April, so by this time of the school year some students could feel taxed by another survey. I tried to mitigate this, by emphasizing that it is not school related, but rather for a Master research project and by reiterating the low-pressure nature and confidentiality of the survey.

As mentioned in the data analysis, the data from the non-binary student was excluded from some of the graphs. Even though I do not know the identity of this student, I still want to protect their confidentiality by not focusing on their data as an island. I encourage future research to explore the experiences of non-binary students in PE class as they could encounter barriers that our system will need to adapt to make PE as inclusive and safe as possible. Ideally, this study would have included a larger student sample size and incorporated more voices to provide greater opportunity to gain feedback to better serve all aspects of the student community and the PE experience.

To further analyze if there is a connection or correlation to how the students answered the questions, a correlation matrix was used (see Table 2). The correlation matrix provides a visual illustration of the connections that were assumed to be true. The higher the value the stronger the correlation and it was not surprising to see significant connections between enjoyment in PE with feeling included, enjoying sports and activities and being active outside of class. The lowest results centred around the question regarding wanting a class of same gender peers. Again, this could explain that students who are generally satisfied are not looking for something different.

Table 2. Correlation Matrix

	<i>I enjoy PE class</i>	<i>I feel included in my PE class</i>	<i>There are sports and activities that I enjoy in PE class</i>	<i>The teacher considers the opinions of students regarding activity and sport choices in class</i>	<i>I am active outside PE class (play outside sports 3+ days a week or get daily exercise ~60 mins a day)</i>	<i>I would prefer a class of peers of my same gender.</i>
I enjoy PE class	1.00					
I feel included in my PE class	0.78	1.00				
There are sports and activities that I enjoy in PE class	0.86	0.52	1.00			
The teacher considers the opinions of students regarding activity and sport choices in class	0.36	0.09	0.63	1.00		
I am active outside PE class (play outside sports 3+ days a week or get daily exercise ~60 mins a day)	0.75	0.55	0.68	0.34	1.00	
I would prefer a class of peers of my same gender.	-0.12	-0.20	0.01	0.31	-0.06	1.00

Overall, the internal consistency of the survey questions was high. Cronbach's Alpha was used to assess the reliability and determine the correlation between questions. The calculation was based on the first five questions as the question regarding the desire for gender specific classes was not particularly relevant to the

student's overall course satisfaction. "The general rule of thumb is that a Cronbach's alpha of .70 and above is good, .80 is better, and .90 and above is best" (*Statistics Solutions – Cronbach's Alpha, 2021*). The results for this study were .85 and the excel table and resulting calculations can be seen in Appendix E. This demonstrates that there was a very reasonable internal consistency to the survey items.

Findings

When analyzing the data, the primary focus was on the female respondents while also analyzing the group as a whole, as well as the responses across genders. This helps to deepen the experiences and provide context to what the female students may or may not be experiencing. While other external factors, including post-secondary requirements, influence future course decisions, it is important to use this data to focus on what can be done to positively motivate adolescent females to stay involved in PE programs, sports, and life-long physical activities.

Overall, students in the grade 10 PE classes that elected to participate in this survey had a positive perspective on their PE experiences. Students reported favourable responses of their enjoyment in PE classes, their inclusion within their PE classes, as well as a positive response to their teachers taking their opinions into account. As a PE teacher this result was enlightening as adolescent students often indicate this may not be the case, whether it is with their body language or words, their apathetic attitude to the sport, warm up or activity that is being offered.

However, it is important to know that this positive data and feedback from students does not mean there is a 1:1 correlation to the number of students choosing to take PE as an optional elective in grade 11. Of the 19 female students only 6 (32%) of those students answered that they would be taking Active Living 11. Of the 10 male students who completed the survey, 6 (60%) of those students indicated that they are taking the active living 11 elective next year. Even though more females answered the survey, these results still indicate that there is a smaller proportion of females that are planning to continue with PE. Unfortunately, this finding is consistent with the literature and current statistics around female adolescents electing not to take PE classes in the future. Below are a couple of quotes from anonymous female students on why they are not taking Active Living 11:

“No, I am active outside of school and I think I can use my time wisely when I don’t have pe class. If I’m active outside of school, I feel that there is no need to have extras and I could use that time to learn and pursue other passions of mine”. – Female, Anonymous

“I’m not because I have a lot of other classes and PE isn’t a priority”. – Female, Anonymous

This finding crossed both the qualitative and quantitative data that male students displayed more positive answers than female students about enjoying PE class, feeling included in PE class and that there were sports they enjoyed. This was visually illustrated in Figure 2.

I explored the short answer responses of the students to explore this further. It was interesting to note the trends in the data when students described their ideal PE class. Themes around inclusion, participation, friends, fun and choice appeared. Inclusion was mentioned by four female students but did not appear in any answers from the male students. This supports the data from the Likert scale where all the males indicated that they either agree or strongly agree for their enjoyment and inclusion in PE class already.

From the 30 responses to the survey, all but one individual mentioned a team sport as the sport or activity they have enjoyed the most this semester in PE class. Team sports that were mentioned the most included: basketball, volleyball, soccer, and handball. This was a trend across all genders, with many of the students elaborating that the reason they enjoyed that sport was it being a favourite or mention their competence in it or an affinity for it. Students also mentioned the sport being fun or enjoyable. Fun and enjoyable were identified as a sub theme within this data as it is not mentioned as frequently but is important to note as it comes up many times throughout other questions as well. One student’s response was unique to themes mentioned earlier, as the anonymous female student stated “CPR, because I actually learned something”. This is a powerful quote, as it is unique. It is also important for teachers to note, as team sports should not be our entire PE curriculum, even though they dominate athletics at most high schools, are easy to teach and get many students active, other alternative units can be just as impactful, like CPR for example.

When getting feedback on “what would your dream PE class look like?” Many students gave thoughtful responses.

“Definitely more student involvement in deciding what the class wants to do or even have new games introduced” – Female, anonymous.

“Give us more choices in the activities we do” – Male, anonymous.

Choice and student autonomy was mentioned by multiple students in their ideal PE setting. This connects with one of the foci in the literature around student autonomy and Self Determination Theory (SDT), which can be a contributing factor in students' motivation to participate and try new skills. It is critical in any school setting that the students feel autonomy and therefore have an ownership and responsibility over their learning. This final quote resonated as well,

“Maybe more understanding of some people who just aren't active or sports people and they shouldn't get marked differently just because they aren't participating to the best of their abilities. I think some people can and will participate once they find the right group of people, they feel comfortable socializing with.” - Female, anonymous

This quote emphasizes the importance of relatedness, and the connection piece that is critical to students' success in school. The importance of inclusion by peers should not be underestimated. It is critical to provide the opportunities for students to foster friendships as those relationships can allow students to improve their comfort level and enjoyment in class.

Discussion

Both the data analysis and my findings provided many discussion points around PE teaching, current PE experiences and trends in my school that are common across schools. The first theme to discuss is team sports, as they are a topic for all that illustrates internal conflict for many of the students. For example, while students of all genders mentioned team sports as something that is enjoyed, fun or that they are skilled at, several of the same students mentioned another team sport when discussing something that they disliked or wanted to see changed. A significant portion of the PE curriculum revolves around team sports for a multitude of reasons, including equipment, ease of teaching, maximum participation for students and familiarity with the sport to name a few. However, no single sport is beloved by all students or loathed by all students, there are not even consistent trends across genders when it comes to this. What is worth noting is the reasons people like or dislike the sport; words like favourite,

fun, good at it and participation all come up in either a positive framing or the opposite for the students disliking them. This shows that students need to feel confident and competent to participate fully and enjoy the sport or activity.

All these themes reappear when students answer the question about their “dream PE class”, as previously mentioned in the findings section. A major piece of creating a positive PE environment -- no matter what sport or activity is played -- begins with the teacher. When students mention teachers, themes around “student choice, input on activities, and a supportive teacher” were prevalent. This connects directly to the literature on autonomy and choice in activities. If students feel like they have a say in what sport or activities are being taught, they will feel that their opinion matters, and that their teacher respects them and wants to connect. This can create a positive feedback loop, whereby they gain confidence and motivation in PE classes which can have a ripple effect on others.

Another interesting finding from the qualitative data was that four students mentioned not enjoying “active health” which is the classroom component in the PE curriculum, that typically consists of six to eight classroom sessions. Many students who referenced active health in their short answer responses also mentioned not wanting to be in a classroom setting or it being boring. This is also interesting as the students who answered that they did not like being in a classroom and wanted to be active in PE class were also students who answered ‘agree’ or ‘strongly agree’ to being active outside of school. These are clearly students who already enjoy physical activity in some capacity and want more of it in PE class, not the opposite where students who are not physically active are looking for more activity. The PE curriculum has been changing over the years to include a more holistic approach to health and wellness, whereby it is not all about the physical side, but rather the emotional, mental, and social areas as well. This active health classroom unit addresses this part of the curriculum, and unfortunately in my experience some students do not engage in the material as well as the teachers would hope. Continuing to improve our active health unit is important. Ideally it would be presented interwoven with activity, where students are reflecting more, and classroom sessions can be integrated into other units – rather than just being a block of six to eight straight days in a classroom. As a PE teacher this is worth exploring more, as it can be a very valuable part of the curriculum.

The focus of this research pertaining to female students and their experiences and reasoning behind taking elective Active Living 11 is complex. Are our PE classes set up in a way that makes male students naturally feel more included? As well, are our female students having their emotional needs met in this environment? As the literature indicated, females need to feel included, safe, and competent to participate and enjoy PE and these results show that 3 or 16% of the females responded negatively (disagree) to the same question regarding feeling included. Another reason that students mentioned not taking elective PE classes was because of other courses they needed in their schedule and that they do not have room for it. This is an unfortunate issue that many students and secondary school elective teachers face. Many students are focused on post-secondary and therefore tend to lean towards taking traditional core classes to fill their resume. While these are important, it might be worth looking at on a larger scale, for schools in general. What skills and competencies do we as educators want students to have when they leave high school? What can be done to give students more space for electives, not just PE, but others in Art, Home Economics, Drama, and Tech Ed as these classes also provide students the opportunity to learn, excel and find passions that they can take with them in the future. The data indicated that a few students mentioned that it didn't correlate with their future career aspirations. A couple also mentioned that they feel they are active outside of PE class. Finally, two females mentioned that they didn't like PE class and one male mentioned that he didn't feel that he was good at sports. One female student specifically referenced their current co-ed setting of PE negatively when discussing their dream class.

"The boys are including the girls, aren't getting mad at them when they aren't as good at them in their sport". - Female, Anonymous

Again, inclusion and that underlying need for safety in the PE setting is important for female students, and unfortunately that does not always naturally occur in a competitive team sport setting. PE teachers need to be aware that female students and potentially any student may have reservations around feeling safe in a setting that is not as traditional as a classroom. This research is important, and the voices of students' matter. As teachers we need to reflect on our pedagogy and practice and hopefully continue to grow to meet the needs of our students so they can feel connected, safe, and successful in our classes.

Conclusion

Physical Education, in some form, is a universal experience for most people. From my discussions with friends, colleagues, and family many stories arise, and they can either be positive or negative, but the ones that are positive almost always mention the teacher by name. The memories are vivid, and words like, fun, participation, inclusion, or a teacher who participated and was passionate are notable. This was a compelling reason why I selected my research to focus on how to positively motivate adolescent females in the PE setting.

It was important to identify barriers to female students and see if we as educators can mitigate these. Female students emphasized the need for inclusion and fun in their class. This directly lined up with the research on the importance of social connection for female adolescents and how their relationships with their peers and teachers can directly impact their experience. According to the data, females still feel less enjoyment and inclusion in PE, even in this case where most students answered positively. This could reflect the traditional elements of the PE setting, where team sports and competitiveness may be encouraged and may be off-putting to some, or where fewer females are involved in sports and activities outside of school and do not bring with them an already inherent love of sport.

This is why it is critical to have options for all students in the PE classes and programs. This past year, I have had the experience of teaching a fitness and conditioning 11/12 – Women's class. This was an elective class that female students could take that provided a safe and inclusive environment for female students to engage in many different types of workouts, activities, and exercise. Through my conversations with these students, I heard stories and experiences that highlight the importance of students having choice and options. Conventional PE classes can work for some students, but when it comes to electives, a women's' only course can be a great option. This is a great alternative for female students who want to keep active but do not necessarily enjoy the offerings of traditional PE classes that they experienced in PE 9 and PE 10. Further exploration around a PE 10 for female students only could be a viable option for students who prefer a same gendered class for comfort and social reasons.

An important theme around teachers considering students' opinions also surfaced. This can empower and engage students in PE class as they feel their choices and opinions matter. Seeing this reiterated by students reinforced the importance of this as a teacher. Even choices in warm-ups and giving students the option to lead or share a sport, game or activity can go a long way for them to feel empowered with respect to the programming.

When students feel included, competent, and cared for in their PE class they have better opportunities for success and enjoyment. This is important as it can create a positive attitude and connection to sports and activities that they can play post-secondary and into their adult lives. For female students specifically, the data indicated that they are less inclined to take senior PE electives, which emphasizes the importance of their experiences in PE 9 and PE 10 as it can have a direct influence on their lives. It is critical we allow students every opportunity for success in PE class by offering different options when possible that cater to students' preferences so they can feel positively motivated in that setting.

References

- Almalki, S. (2016). Integrating Quantitative and Qualitative Data in Mixed Methods Research - Challenges and Benefits. *Journal of Education and Learning*, 5(2), 288–296. <https://doi.org/https://files.eric.ed.gov/fulltext/EJ1110464.pdf>
- Azzarito, L., Solmon, M. A., & Harrison J. L. (2006). ‘ ... If I had a choice, I would ... ’: A feminist poststructuralist perspective on girls in physical education. *Research Quarterly for Exercise and Sport*, 77(2), 222–239.
- Bessa, C., Hastie, P., Rosado, A., & Mesquita, I. (2021). Sport Education and Traditional Teaching: Influence on Students’ Empowerment and Self-Confidence in High School Physical Education Classes. *Sustainability, Motivation and the Teaching-Learning Process in Physical Education and Sport*, 13(2), 578. <https://doi.org/https://doi.org/10.3390/su13020578>
- Boone, H. N., & Boone, D. A. (2012). Analyzing Likert Data. *The Journal of Extension*, 50(2), Article 48. <https://tigerprints.clemson.edu/joe/vol50/iss2/48>
- Canada, H. (2021, November 23). Government of Canada. Canada.ca. Retrieved June 4, 2022, from <https://www.canada.ca/en/health-canada/services/healthy-living.html>
- CBC/Radio Canada. (2020, June 16). 1 in 3 girls drops out of sports by late teens, study finds | CBC sports. CBCnews. Retrieved May 15, 2022, from <https://www.cbc.ca/sports/youth-sports-teenagers-female-male-participation-1.5607509>
- Chen, T. J., Watson, K. B., Michael, S. L., & Carlson, S. A. (2021). Sex-Stratified Trends in Meeting Physical Activity Guidelines, Participating in Sports, and Attending Physical Education Among US Adolescents, Youth Risk Behavior Survey 2009–2019. *Journal of Physical Activity and Health*, 18(1), 102–113. <https://doi.org/10.1123/jpah.2021-0263>.
- Chyung, Y., Robertson, K., Swanson, L., & Hankinson, A. (2017). Evidence-Based Survey Design: The Use of a Midpoint on the Likert Scale. *Performance Improvement*, 56(10), 15–23. <https://doi.org/10.1002/pfi.21727>.
- Craike, M. J., Symons, C., & Zimmermann, J. A. M. (2012). Why do young women drop out of sport and physical activity? A social ecological approach. *Annals of Leisure Research*, 12(2), 148–172. <https://doi.org/10.1080/11745398.2009.9686816>
- Crane, J., & Temple, V. (2014). A systematic review of dropout from organized sport among children and youth. *European Physical Education Review*, 21(1), 114–131. <https://doi.org/10.1177/1356336X14555294>

- DeCarlo, M., Cummings, C., Agnelli, K., & Laitsch, D. (2022, June 28). Graduate research methods in education (leadership): A project-based approach (Version 2.12.14.17-19.22). BC Campus. <https://pressbooks.bccampus.ca/dlaitsch/>
- Faulkner, G. (2017, January 15). ParticipACTION Pulse Report. Participaction.com. Retrieved July 7, 2022, from <https://www.participaction.com/en-ca/resources/pulse-report#:~:text=According%20to%20Statistics%20Canada%2C%20only,population%20is%20not%20active%20enough.>
- Fernandez-Bustos, J. G. (2019). Effect of Physical Activity on Self-Concept: Theoretical Model on the Mediation of Body Image and Physical Self-Concept in Adolescents. *Frontiers in Psychology*, 10(1537). <https://doi.org/https://doi.org/10.3389/fpsyg.2019.01537>
- Gibbons, S. L. (2009). Meaningful Participation of Girls in Senior Physical Education Courses. *Canadian Journal of Education*, 32(2), 222–244. <https://doi.org/http://www.csse.ca/CJE/General.htm>
- Grey, A. (2020). Canadian Girls Are Dropping Out of Sport According to National Study. *Canadian Women & Sport*. Retrieved May 29, 2022, from <https://womenandsport.ca/>
- Gruno, J., & Gibbons, S. L. (2016). An Exploration of One Girl's Experiences in Elective Physical Education: Why Does She Continue? *Alberta Journal of Educational Research*, 62(2), 150–167. <https://doi.org/https://doi.org/10.11575/ajer.v62i2.56157>
- Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396–403. <https://doi.org/10.9734/BJAST/2015/14975>
- Kalkan, N., & Gizem Engin, S. (2020). Play Like A Woman! An Overview of Gender from The Perspective of Physical Education Football Players' Female Students. *European Journal of Educational Sciences*, 7(4), 131–144. <https://doi.org/10.19044/ejes.v7no4a8>
- Keillor, B. D., Owens, D., & Pettijohn, C. (2001). A cross—cultural/cross national study of influencing factors and socially desirable response biases. *International Journal of Market Research*, 43(1), 1–19. <https://doi.org/10.1177/147078530104300101>
- Kul, M., & Mehmet, A. (2021). An Investigation of High School Students' Continuous Anxiety Towards Physical Education and Sports Course. *Education Quarterly Reviews*, 4(1), 449–456. <https://doi.org/10.31014/aior.1993.04.02.258>
- Laitsch, D. (2021). Graduate research methods in Education (Leadership) - A project based approach . Open Social Work Education.

- Leisterer, S., & Jekauc, D. (2019). Students' Emotional Experience in Physical Education—A Qualitative Study for New Theoretical Insights. *Sports*, 7(10), 1–15. <https://doi.org/doi:10.3390/sports7010010> www.mdpi.com/journal/sports
- Martins J, Costa J, Sarmiento H, Marques A, Farias C, Onofre M, Valeiro MG. Adolescents' Perspectives on the Barriers and Facilitators of Physical Activity: An Updated Systematic Review of Qualitative Studies. *Int J Environ Res Public Health*. 2021 May 6;18(9):4954. doi: 10.3390/ijerph18094954. PMID: 34066596; PMCID: PMC8125166.
- McSharry, M. (2017). 'It's just because we're girls': How female students experience and negotiate masculinist school sport. *Irish Educational Studies*, 36(3), 341–356. <https://doi.org/https://doi.org/10.1080/03323315.2017.1327366>
- MEC. (2021). Having trouble getting off the couch? ParticipACTION - HOME/ Pulse Report. Retrieved May 29, 2022, from <https://www.participaction.com/en-ca>
- Moran, M. (2021, August 3). *Cronbach's alpha*. Statistics Solutions. <https://www.statisticssolutions.com/cronbachs-alpha/#:~:text=The%20general%20rule%20of%20thumb,90%20and%20above%20is%20best.>
- Ntoumanis, N. (2005). A Prospective Study of Participation in Optional School Physical Education Using a Self-Determination Theory Framework. *Journal of Educational Psychology*, 97(3), 444–453. <https://doi.org/10.1037/0022-0663.97.3.444>
- O'Brien, W. (2020). Implications for European Physical Education Teacher Education during the COVID-19 pandemic: a cross-institutional SWOT analysis. *European Journal of Teacher Education*, 43(4), 503–522. <https://doi.org/10.1080/02619768.2020.1823963>
- Pereira, M. A., Caspersen, C. J., & Curran, K. M. (2000). Changes in physical activity patterns in the United States, by sex and cross-sectional age. *MEDICINE & SCIENCE IN SPORTS & EXERCISE*, 32(9), 1601–1609. <https://doi.org/0195-9131/00/3209-1601/0>
- Physical and Health Education 10. Building student success - B.C. curriculum. (n.d.). Retrieved June 20, 2022, from <https://curriculum.gov.bc.ca/curriculum/physical-health-education/10/core>
- Powering better sport through gender equity. *Canadian Women & Sport*. (2021, November 8). Retrieved May 15, 2022, from <https://womenandsport.ca/>
- Mikael Quennerstedt (2019) Physical education and the art of teaching: transformative learning and teaching in physical education and sports pedagogy, *Sport, Education and Society*, 24:6, 611-623, DOI: 10.1080/13573322.2019.1574731

- Runacres, A.; Mackintosh, K.A.; Knight, R.L.; Sheeran, L.; Thatcher, R.; Shelley, J.; McNarry, M.A. Impact of the COVID-19 Pandemic on Sedentary Time and Behaviour in Children and Adults: A Systematic Review and Meta-Analysis. *Int. J. Environ. Res. Public Health* 2021, 18, 11286. <https://doi.org/10.3390/ijerph182111286>
- Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being . *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/110003-066X.55.1.68>
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to Identify Themes. *Field Methods*, 15(1), 85–109. [https://doi.org/DOI: 10.1177/1525822X02239569](https://doi.org/DOI:10.1177/1525822X02239569)
- Sabiston, C. (2020). (rep.). The Rally Report - Encouraging Action to Improve Sport for Women and Girls . Canadian Tire Jumpstart Charities . Retrieved July 7, 2022, from https://womenandsport.ca/wp-content/uploads/2020/06/Canadian-Women-Sport_The-Rally-Report.pdf.
- Shorten, A., & Smith, J. (2017). Mixed methods research: expanding the evidence base. *Evid Based Nursing*, 20(3), 74–75. <https://doi.org/10.1136/eb-2017-102699>
- Simon, M., & Azzarito, L. (2019). ‘Singled out because of skin color ... ’: exploring ethnic minority female teachers’ embodiment in physical education. *Sport, Education and Society*, 24(2), 105–120. <https://doi.org/10.1080/13573322.2017.1326893>
- Second Printing . (2010). *Teaching Physical Education (Vol. First Online Edition , 2008)*.
- Thomas, D. R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27(2), 237–246. <https://doi.org/https://journals.sagepub.com/doi/10.1177/1098214005283748>

Appendix A. Survey Questions

Screenshots of the online survey that students completed.

CONFIDENTIALITY

- The survey is anonymous. You will not provide your name and it will not be attached to your email.
- Participants will be asked grade and gender only.
- Confidentiality of the recorded data will be maintained and only accessed by Mrs Rutledge (Coulson).

Yes, I consent to participate in this survey

No, I will not be participating

Submit

2. Check off whether you are currently in PE 9 or PE 10 *

- PE 9
- PE 10

3. What best describes your gender? *

- Male
- Female
- Non-Binary
- Prefer not to say

4. Please answer the following questions about your experience in you PE class this semester *

	Strongly Disagree	Disagree	Agree	Strongly Agree
I enjoy PE class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel included in my PE class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are sports and activities that I enjoy in PE class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The teacher considers the opinions of students regarding activity and sport choices in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<hr/>				
I am active outside PE class (play outside sports 3+ days a week or get daily exercise ~60 mins a day)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would prefer a class of peers of my same gender.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. What sport and activity have you enjoyed this semester in PE ? and Why? *

Enter your answer

6. What sport and activity have you enjoyed the least in PE ? and Why? *

Enter your answer

7. What would your dream PE class look like? *

Enter your answer

8. What is something that you would like to see done differently ? *

Enter your answer

9. Grade 10 only. If you are in grade 9 you can write N/A in the box.

- Grade 10's. Are you considering taking a PE elective in the future ? Please elaborate ? *

Enter your answer

Appendix B. Active Parent Consent Form – SD43

April 2023

Re: **Active Parent Consent Form – Online P.E. Survey**

Dear Parents/Guardians,

My name is Suzanne Rutledge (nee: Coulson) and I am your child's physical education teacher this semester. As well as teaching full time at () Secondary School, I am in the final stages of completing a Master of Education at Simon Fraser University. Graduation requirements includes completion of a research project. This focus of research relates to my passion for teaching physical education and lifelong activity participation.

Information is outlined below regarding your child's optional participation in a short one-time anonymous online survey that will be conducted during the class. This study pertains to adolescent participation in physical education classes and its impact on future course selection of senior elective PE.

Intention of the study: To get feedback from grade nine and ten students on their experiences in physical education and how this relates to their continued participation in senior elective physical education courses.

Who are the intended participants: This study is directed towards grade nine and ten students at () Secondary during the 2022-2023 school year.

Voluntary participation: Your child's participation is voluntary, and they have the option to decline participation. This study is anonymous and has no connection to students' grade in the course. During the time of the survey students will be working on an active health assignment simultaneously so they will not stand out for not completing it. Prior to the survey students will read about the details and can ask questions and decide regarding their participation. There are no foreseeable risks to students whether they are participating or not in this study.

Organizational permission: Permission to conduct this research study has been granted and supported by (_____), Principal of (_____) Secondary.

Confidentiality: The survey is anonymous. Students will not provide their name and it is not attached to their email address. Participants will be asked grade and gender only.

If you have any questions for would like further detailed information, please do not hesitate to call me at the school or reply to this email.

Thank you very much,

Suzanne Rutledge (Coulson)

To consent for your child to volunteer and participate in this online survey please complete the form below. The form can either be returned to class with your child or photographed/scanned and emailed to (srutledge@ _____).

As the parent/guardian of _____, I _____

Child's name

Parent/Guardian's printed name

give my permission for them to participate in the online P.E. research survey.

Parent/Guardian Signature

Date

Appendix C. Script of Survey Instructions

Script for Survey Instructions to PE classes.

Physical Education Students,

As I mentioned last week, you have the opportunity to participate in a one-time online survey on Microsoft forms. This survey is part of my Master of Education program which is a graduate study program with SFU. This survey is entirely optional and anonymous. That means I will not know if you participated or not, and who the answers belong to. Even though you do this on your computer or phone it will not connect to your email or any other means of identification. Once again, it does not influence or impact your grade in PE and you can carry on doing the active health log simultaneously.

Your experiences in PE 9 and or 10 (depending on the class) are valuable in this project. It is an individual survey about your own PE experience, what you enjoyed, what would make it better and other information that can enrich my capstone project. This is not assessment of my own teaching practice, but your physical education experiences in high school.

Please read the consent information at the start of the survey as it elaborates on the details on the data storage, reporting and deletion. If you have any questions or need clarity you can ask at any time. If you proceed with the survey the first six questions are rating your experiences on a scale of 1-4. Following that there are four short answer anecdotal questions where you can answer thoughtfully and offer insight into your experiences.

The following information is important for you to understand with respect to making an informed decision to participate in this research study, as per Article 3.2 of the TCPS 2 policy document:

You are being invited to participate in this study.

You understand the information mentioned above as to the purpose of this study and that your participation is limited to completing an online survey.

There are no foreseeable risks and no potential benefits to participating in this study. You are under no obligation to participate and are free to withdraw at any time. There will be no possibility of commercialization of the research findings. Participants will not be identified either directly or non-directly.

The nature of the study does not warrant a qualified designated representative to explain scientific or scholarly aspects of the research. Mrs. Rutledge would be happy to discuss and answer any questions you may have.

If you have any concerns, about your rights as a research participant and/or your experiences while participating in this study, please contact the Director, SFU Office of Research Ethics.

The only information collected about the participants is grade level and gender. The survey is anonymous and confidential and only Mrs. Rutledge and the program supervisor, Michelle Nilson, will have access to the data.

Participation in this study does not include any payment, incentive, reimbursement or compensation. By consenting, you do not waive any rights to legal recourse in the event of research-related harm.

Please take time now to consider all the information provided, ask questions and seek further clarification before consenting.

If you feel you fully understand the information that has been conveyed to you, and would like to participate in the research study, you may continue to the online survey.

Once you have read all of the Informed Consent Information your choices are:

Yes – I have read and understood this Consent Form and agree to participate in the study

No – I do not wish to participate in the study

Please continue to work quietly on your CPR workbook after you have completed the survey, or right away if you decide not to participate. Thank you very much.

Appendix D. Quantitative Data Table

Summary of responses to the survey questions including calculations using the 4-point Likert scale and mean, median and mode.

	"I enjoy PE class"				"I feel Included"				"There are sports I enjoy"				"Teacher considers students opinion"				"Active outside of PE class"				"Prefer same gender classes?"			
	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts	Strongly Disagree 1 pt	Disagree 2 pts	Agree 3 pts	Strongly Agree 4 pts
Females (19)																								
# of responses	0	3	12	4	0	3	13	3	1	0	14	4	0	0	12	7	3	5	9	2	4	8	5	2
Likert point total	0	6	36	16	0	6	39	12	1	0	42	16	0	0	36	28	3	10	27	8	4	16	15	8
Mean			3.05				3				3.11				3.37				2.53				2.26	
Median			3				3				3				3				3				2	
Mode			3				3				3				3				3				2	
Males (10)																								
# of responses	0	0	5	5	0	0	3	7	0	1	4	5	1	0	5	4	0	2	4	4	1	6	3	0
Likert point total	0	0	15	20	0	0	9	28	0	2	12	20	1	0	15	16	0	4	12	16	1	12	9	0
Mean			3.5				3.7				3.4				3.2				3.2				2.2	
Median			3.5				4				3				3				3				2	
Mode			4				4				4				4				4				2	
Non-Binary (1)																								
# of responses			1				1				1				1				1				1	
Likert point total			3				3				3				2				2				2	
Mean			3				3				3				2				2				2	
Median			3				3				3				2				2				2	
Mode			3				3				3				2				2				2	
TOTAL (30)																								
# of responses	0	3	18	9	0	3	17	10	1	1	19	9	1	1	17	11	3	8	13	6	5	15	8	2
Likert point total	0	6	54	36	0	6	51	40	1	2	57	36	1	2	51	44	3	16	39	24	5	30	24	8
Mean			3.2				3.23				3.2				3.27				2.73				2.23	
Median			3				3				3				3				3				2	
Mode			3				3				3				3				3				2	

Appendix E. Cronbach's Alpha (Reliability)

Cronbach's Alpha (Reliability)							
<i>I enjoy PE class</i>	<i>I feel included</i>	<i>I enjoy PE activities</i>	<i>Student opinion & choice</i>	<i>Active outside PE</i>	Sum of items		
4	3	4	3	3	17		
2	2	3	4	1	12		
4	4	4	4	4	20		
3	3	3	4	3	16		
3	3	3	4	2	15		
3	3	3	3	3	15		
3	3	3	3	3	15		
3	3	3	3	3	15		
4	4	4	4	2	18		
3	3	3	3	2	14		
3	3	3	3	2	14		
3	3	3	3	2	14		
2	3	2	3	1	11		
3	3	3	3	3	15		
3	2	3	4	3	15		
3	3	3	3	3	15		
3	3	3	3	3	15		
2	2	3	3	2	12		
4	4	4	4	4	20		
3	4	2	1	2	12		
4	4	4	4	4	20		
3	3	3	3	2	14		
4	4	4	4	3	19		
3	4	3	3	3	16		
4	4	4	3	4	19		
4	4	4	4	4	20		
3	3	3	3	3	15		
4	4	4	4	4	20		
3	3	3	3	3	15		
3	3	3	2	2	13		
					7.18	Variance of sums	
0.37	0.39	0.32	0.48	0.74	2.30	Sum of Variance	
					0.85	Alpha	