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PHYSICAL ACTIVITY PREFERENCE AND PARTICIPATION
IN MIDDLE SCHOOL AGE STUDENTS IN KENTUCKY

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Education
at the University of Kentucky

By

Fabian Correia

Lexington, Kentucky

Director: Dr. Heather Erwin, Head of Kinesiology and Health Promotion Department

Lexington, Kentucky

2023

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ABSTRACT OF THESIS

PHYSICAL ACTIVITY PREFERENCE AND PARTICIPATION IN MIDDLE SCHOOL AGE STUDENTS IN KENTUCKY

Physical activity (PA) in youth is significant as it begins to lay the fountain for a healthier lifestyle as children age. The benefits of being regularly physically active are plentiful as it improves muscle strength, cardiovascular, fitness, and cognitive functions (Rodgers, 2008). However, oftentimes in physical education classes, the voice of the student tends to go unheard. The purpose of this study was to determine how the perception or preference to be physically active differs by age, gender, and/or ethnicity in a middle school setting. The goal of this study is to shed light on how building a more inclusive and student-driven (PE) curriculum may improve participation. The significance of this study would be the potential to improve students' PA levels through enjoyment and awareness of activities. Focusing on activities students prefer to participate in during class may lead to a more positive perception of PA, potentially, leading to lifelong PA engagement.

Participants completed the validated PEAS (Orlic et al., 2017), modified for this study, along with a list of the activities offered in their regular PE curriculum. The surveys used a 5-point Likert scale ranging from strongly prefer (5) the activity/statement to strongly dislike (1) the activity/statement. Data were analyzed using SPSS to provide descriptive statistics via a Chi-Square Test. Data were grouped by age, gender, or ethnicity using the different activities or statements to compare. The PEAS measured four dimensions: Satisfaction, Comfort, Activity, and Teacher, while the second survey divided items into three groups: Team sports, Individual Sports, and Leisure activities.

The results when determined using Chi-Square resins to show significance in multiple areas, the most prominent being in gender and ethnicity. Gender played a large role in students feeling uncomfortable and be unsatisfied with their current PE classes. Ethnicity was mainly a factor in students preferring individual sports above all else.

KEYWORDS: Physical Activity, Age, Gender, Ethnicity, Preference

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PHYSICAL ACTIVITY PREFERENCE AND PARTICIPATION
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CHAPTER 1. INTRODUCTION

1.1 Background

Physical activity in youth is significant as it begins to lay the foundation for a healthier lifestyle as children age. The benefits of being regularly physically active are plentiful as it improves muscle strength, cardiovascular, fitness, and cognitive functions (Rodgers, 2008). Children also benefit socially from being physically active and learning sportsmanship and respect through group gameplay. Focusing on being physically active during youth has become agreed upon (Rodgers, 2008), as developing movement skills and healthy habits at this age can be the foundation needed for success later in life. As children age, their motivation to be active may dwindle around their early teenage years because other interests or detriments begin to be more prevalent (Rodgers, 2008). Other factors such as gender, ethnicity, access, transportation, and cost could steer adolescents in other directions (Hill & Hannon, 2008). It is also to be mentioned that the Covid-19 pandemic put a strain on physical activity as many schools had to move online (Yuan et al., 2021). For physical education, this could be seen as an issue as one cannot account for a student's space and equipment at home. Outside of school, many physical activities (PA) programs had to be canceled as well, forcing families to become active on their own. However, despite these barriers to PA, being active does not need to be a daunting task and may be incorporated differently for everyone.

Often structured environments, such as childcare, afterschool programs, summer camps, and physical activity/sports programs are crucial to promoting physical activity and work best for promoting physical activity to the youth (Tassitano et al., 2020). Schools offer a great opportunity as scheduled physical education classes offer various activities

and sports (Rodgers, 2008). A student's interest in class activities may range depending on their age, gender, and/or ethnicity (Hill & Hannon, 2008). Providing a chance for the student's voice to be heard in a physical education setting is imperative as once they are allowed, the goal is for them to select activities they enjoy and engage in their preferred activities. Adjusting the curriculum of a physical education classroom to better tailor students' interests has been discussed for several years (Hill et al., 2008). Students will have different preferences for activities based on their backgrounds, and the goal of physical education may not only adhere to these preferences but also introduce new skills.

Widening the array of physical activities offered in class could have an extensive range of benefits. One prominent example uses the self-determination theory (SDT) to promote lifelong PA participation by providing positive experiences and attitudes. This theory asserts that humans have three basic psychological needs: autonomy, competence, and relatedness; and environments that promote the satisfaction of these needs are more likely to facilitate the internalization of motivation (Ryan & Deci, 2017). Giving youth opportunities to engage in activities they prefer during physical education may improve their attitudes towards physical activity as they progress towards these three pillars. Thus, it may improve their intrinsic and extrinsic motivation to be active both in class and out (Ryan & Deci, 2017).

Intrinsic motivation is an entirely volitional form of motivation where behaviors are undertaken due to inherent interest or enjoyment (Ryan & Deci, 2017). On the other hand, extrinsically motivated behaviors are performed for a separable consequence, and therefore, vary in terms of how controlled (e.g., avoidance of punishment) versus autonomous (e.g., attainment of a valuable outcome) they are (Ryan & Deci, 2017). Within

physical education, intrinsic motivation is positively associated with adaptive outcomes including enjoyment and physical activity intentions (Vasconcellos et al., 2019) and increased physical activity levels, while extrinsic motivation is positively associated with maladaptive outcomes including boredom and negative affect (Vasconcellos et al., 2019). The introduction of newer activities (leisure, individual, or group) may lead to students finding a favorite and improving upon the skills needed in a classroom setting. This, in turn, would allow others to accompany them which may create an environment where autonomy, competence, and relatedness are all enriched.

1.2 Purpose

This study will determine how the perception or preference to be physically active differs among different ages, genders, and/or ethnicities in a middle school setting. The present study will do this by grouping the skills most likely to be taught in the yearly curriculum along with activities students may participate in outside of class to determine which activities are enjoyed the most. The goal of this study will be to shed light on how building a more inclusive and student-led physical education class will improve participation. The study's significance would be improving students' physical activity levels through enjoyment and awareness of activities. Focusing on activities students prefer to participate in during class may lead to a more positive perception of PA, potentially, leading to lifelong physically active students in whatever field is most comfortable for them. Examining different ages, genders, and ethnicities will help determine the preference of each group and the perception behind why each student is participating.

1.3 Hypothesis

We hypothesize that gender will play a significant role in preference for individual or leisure activities. We hypothesize no differences in preferences by ethnicity or age.

1.4 Review of Literature

Only one in five adolescents in the United States meets physical activity guidelines for aerobic and muscle-strengthening activities (Healthy People, 2030). As a result, they are increasingly becoming at risk for obesity, elevated insulin, blood lipids, and high blood pressure (Healthy People, 2030). Becoming more physically active can serve as a precaution against these and many other health conditions. Allowing students an opportunity to have input on what movements in which they will participate may potentially increase participation as the perception of physical education may be more positive (Howard et al., 2011). Researchers indicated that children who have more positive attitudes toward physical activity are more likely to participate in physical activity outside of school (Chung & Phillips, 2002).

Howard et al. (2011) investigated how positive attitudes affected participation in physical activity in their study including 1,317 (603 boys and 714 girls) participants in the 9th to 12th grades. All students were from public high schools in five different school districts in New York City. The students were given Physical Education Activity Attitude Scale questionnaires administered by their physical education teachers. They were scored using a five-point Likert Scale (1 strongly agree to five strongly disagree) to garner results. Scores of 20 indicated the most negative attitude, 21-40 indicated a negative attitude, 41-60 indicated a neutral attitude, 61-80 indicated a positive attitude and 81-100 indicated a highly positive attitude (Howard et al., 2011). The second questionnaire was the

Sports/Activities Preference Questionnaire. Reflecting on these scores indicates that students are not only aware of the need for physical education but also enjoy participating in group activities while in class. Another major point this study unveiled was that students did not think high school would be better with physical education, showing that students desire teachers to meet their demands.

SDT is particularly concerned with how social-contextual factors support or thwart people's thriving through the satisfaction of their basic psychological needs for competence, relatedness, and autonomy (Ryan & Deci, 2017). SDT can be looked at through multiple lenses, being both practical and critical. SDT is practical as far as it points to how features of contexts facilitate or undermine the motivations and satisfactions underlying effective self-regulation and wellness (Ryan & Deci, 2017). By identifying (and measuring) varied types of motivational regulation and the conditions that foster them, SDT can be thoughtfully and systematically applied within varied social contexts, including families, classrooms, sports teams, health clinics, interactive media, and workplaces. At the same time, SDT is inherently critical as far as it examines and compares social contexts in terms of their adequacy in supporting versus impairing human thriving (Ryan & Deci, 2017).

The use of SDT can play an extensive role when examining physical activity. Jonsson et al. (2017) found when looking into students (age range 12-13) from multicultural communities with low socioeconomic status in Sweden, that students mostly referred to spontaneous PA rather than organized PA. They also expressed that they enjoyed their PA engagement which they indicated was promoted by the variation of PA, available options for PA, their physical skills, and the presence of peers. This ties into SDT

as the results stress the importance of facilitating intrinsic motivation with a supportive PA environment in which students in the 12-13 range can satisfy their needs for autonomy, competence, and relatedness (Jonsson et al., 2017). These ideas are further cemented when looking into Vasconcellos et al. (2019), as they found results that show the effect of peers. Examples include, “I like sport, one is with friends, one can laugh,” along with, “I am with my friends and my class is great to be around and it is just fun,” (Vasconcellos et al., 2019, p. 5) when looking at positive quotes that improve relatedness. The results, however, were not all positive as peer comparisons and varying interest in activities halted motivation. “... our teacher says, ‘what do you want to do today?’ and the boys yell, ‘dodgeball’ ... so it’s dodgeball ... we just stand there,” and “because I’m always sort of behind what everybody’s doing” (Vasconcellos et al., 2019, p. 6).

Having a student's voice play a factor in a classroom setting can be conducive to a more successful environment (Howard et al., 2011). In few places is this more prevalent than in a physical education setting, where students are allowed more freedom than in other core classes. Here they can move candidly and communicate as opposed to sitting and being lectured to, as other classes may do. Physical education creates a setting for a safe and inclusive, yet competitive space. One study done by Couturier (2005) explains this very idea as faculty and teachers worked in unison to design, administer, and analyze a student survey that would give voice to middle and high school students' perspectives on physical education. The idea of enhancing a classroom with students' perceptions and opinions allows for the staff to directly address concerns they may not have been aware of previously. This study distributed 7000 surveys, of which 5308 were returned for analysis (76% response rate). The school system was composed of four high schools (grades 9-12)

and seven middle schools (grades 6-8), and the participants ranged in age from 11 to 20 years (Couturier & Chekpo, 2005). The survey results showed varying statistics about students' participation among other topics in physical education. The top response for why students participated was, "It makes me healthier" (70.7%), followed closely by, "I like participating because I have fun" (69.6%), and "I like getting out of the classroom and moving" (68.8%) (Couturier & Chekpo, 2005). These results show most students understand the benefit of being active while also enjoying leaving the more sedentary classroom to participate in movement activities. Moving forward in the survey, a large majority of students liked the idea of having input stating, "I would like to be able to pick my activities" (75.5%) and "I would like to be able to tell the teacher the activities I would like to do" (73.6%) (Couturier & Chekpo, 2005). This, once again, puts the curriculum, which is usually set in stone for teachers, in question. Equally as important is when asked why students did not want to participate, many answered with, "I don't like doing the same activities every year (45.1%) (Couturier & Chekpo, 2005). With almost half of the population agreeing that repetition is an issue in physical education, it emphasizes the teacher to adjust, and using students' perceptions to adapt seems to be poised for success.

In previous literature, many seemed to agree that adding in the perception of students in the classroom may be successful. However, many studies also pointed to the differences in perception from student to student. Boyd (2021) found that Black, Latinx, Asian/Pacific Islander, and Native American students (i.e., students of color) in the United States represent more than 50% of public-school students. Among this group, a teacher will find children of all different backgrounds, genders, ages, and differing opinions on physical activity.

1.4.1 Grade / Age

Age tends to become more of a factor in physical activity participation once students arrive at adolescence with many dropping physical activity for other reasons such as art, music, school, work, or relationships. Couturier et al. (2005) found that when asked about the curriculum, high schoolers were more likely to want to choose their activities (79.3%) as opposed to middle schoolers (71.7%). Middle schoolers scored higher in “wanting to choose my group” (67.1%) as opposed to high schoolers (56.8%). A more concerning contrast is why students in each age range participate. High schoolers in this area selected “because I have to” more than their middle school counterparts with 41.3% and 32.4%, respectively (Couturier et al., 2005, p. 173). This shows the increase in students who feel they are forced to participate or only attend for a grade as they age.

1.4.2 Gender

Gender differences play a large role in participation in different activities during a physical education class. Bradley et al. (2000) state that middle school girls prefer non-competitive or individual activities, whereas middle school boys tend to choose traditional team sports. Typically, most curriculum revolves around group activities to better involve most of the class, but it may isolate those who do not prefer this. Girls in this age group tend to prefer individual and noncontact activities such as swimming, volleyball, contemporary dance, aerobics, gymnastics, and rope jumping compared to boys who more frequently selected contact and power activities such as weight training, floor/street hockey, and football (Hill, 2005). This can be linked to the suggestions by Greenwood and Stillwell (2001) that appears boys tend to conceptualize those physical activities as providing an opportunity for competitive experiences whereas girls may focus more on the

socializing nature of activities. Finding footing in between these ideas is where a physical education teacher will likely improve the physical activity levels of their class significantly.

A study done by Hill and Hannon (2008) focused on preferences of activities for physical education students, particularly those in middle school. The study was conducted in two middle schools and comprised 750 students each in grades 7, 8, and 9. When analyzing the results based on gender, Hill et al (2008) observed that most boys selected football (72.7%) and basketball (70.1%) as their preferred sports, while girls chose swimming (68.6%), skating (68.4%), and volleyball (66.8%). The two most prevalent overlapping sports two were basketball 70.1% for boys and 64.3% for girls and swimming 51.7% for boys and 68.6% for girls. The largest differences in this study were found in dance as an aerobic dance was 44.0% for females and 5.7% for males, swing dance was 36.5% for females and 9.6% for males, line dance was 30.3% for females and 6.7% for males, all showing major discrepancies. Allowing students to complete surveys such as this would give greater insight into how teachers can make their classes more inclusive and encourage participation.

1.4.3 Ethnicity / Race

Different ethnic and cultural backgrounds can also play a factor in students' preference for different activities. Although research in this area is not extensive, Howard et al. (2011) state that students are likely to become more positive toward physical activity if they are in a learning environment that makes them comfortable and confident. An example of this could be Caucasian and African American children like and are good at team sports, Hispanic children like and are good at dancing and Asian children prefer to play individual sports and martial arts (Howard et al., 2011). Creating safer and more

inclusive environments for students with different backgrounds would encourage participation across these fields. Representation also matters here as teachers have remained homogeneously White (80%) for decades in public school settings, and it was determined that 83% of undergraduate physical education majors were White, with only 1% Black women (Boyd, 2021). The lack of representation from those charged to lead the physical education classroom could negatively affect the students.

If given opportunities minority students have been shown to have improved levels of physical activity (Taverno et al., 2012). Minority girls who usually participated in an after-school program engaged in approximately 3 more minutes per hour of moderate to vigorous physical activity (MVPA) per day during after-school hours compared to those who usually went home after school. Further, minority girls who attended an after-school program accrued an additional 5 minutes per hour of total PA compared to those who went home after school. For white girls, the amount of time spent in sedentary behavior, MVPA, and total PA did not differ by after-school setting (Taverno et al., 2012). Taverno and colleagues (2012) also found that though the interaction effect between race/ethnicity and the after-school setting was not significant for boys, minority boys who usually attended an after-school program (17.3%) spent less time in sedentary behavior ($p < 0.05$) and had higher levels of MVPA and total PA compared with minority boys who usually went home after school.

More information and research into this matter may be presented relating to physical activity and ethnicity, a sentiment echoed by Grieser (2006). Their findings suggest that “factors other than ethnic background may contribute to physical activity preferences and that distinct physical activity interventions may likely be unnecessary for

adolescent girls of various ethnic groups. However, cultural factors should still be considered in the development of interventions” (Grieser et al., 2006, p. 50). Continuing with their implications stating "additionally, the low rate of agreement within ethnic groups on preferred activities indicates the need for a broad array of physical activity programs to attract all types of girls. Although this study indicates few ethnic differences in physical activity perceptions or preferences of adolescent girls, there may be additional factors that could affect physical activity interventions, which should be explored further across ethnicities (Grieser et al., 2006, p. 50).

1.4.4 Ethnicity and Gender

The physical activity levels of adolescent girls and boys vary as they begin to age, and when factoring in ethnicity, the decline is evident (Grieser et al., 2006). Boys begin to experience barriers in adolescents such as increasing interest in interpersonal relationships and dating, getting a driver's license, worrying about what to do following high school graduation, and (in some cases) spending more time on academic subjects to improve the chances of entering college or university. Thus, it is not simply age, but the meaning of age, which may represent barriers to physical activity among adolescents (Allison et al., 2005, p. 157). To extend this argument, likely, the meaning of such factors as gender, ethnicity, and race are important when considering barriers to physical activity rather than simply their correlational or predictive relationship to outcomes (Allison et al., 2005).

The Centers for Disease Control and Prevention found that with Hispanic and African American high school females there is a higher prevalence of inactivity among African American girls than among Caucasian girls. In addition, the prevalence of girls who receive insufficient physical activity is higher among eleventh and twelfth-grade girls

compared with ninth and tenth-grade girls (Grieser et al., 2006). The need for intervention is clear, as evidenced by a study conducted by Grieser et al. (2006). They used semi-structured interviews and checklists to gauge interest in physical activity and determinants. Participants were from twelve schools selected for variety in setting, ethnicity, and socioeconomic status. Eighty interviews were completed, half for students in seventh grade and half for students in eighth grade. The checklist contained 54 activities ranging from sports, and recreation, to chores completed by 130 girls (half in the sixth, half in the eighth). Participants were then asked to check activities they had done in the past week and list their three favorites.

The results from this study showed the girls perceived that the biggest benefit of physical activity was staying in shape; 88% of African American girls indicated the biggest benefit of PA was staying in shape. Eighty-five percent of Caucasian students and 64 % of Hispanic students selected staying in shape as the biggest benefit (Grieser, 2006). The girls in this study correlated staying in shape with a healthy, strong, and attractive body with one student saying, “I think it would help to keep myself in shape, like if I’m busy all the time, then I’m not just loafing around. . . . When I get older, [like] 40, I can still look like I’m 30” (Grieser, 2006, p. 44).

Other major benefits of physical activity had mixed results during the study. Socializing was mentioned by Caucasian girls during 63% of responses as opposed to 43% and 15% percent for Hispanic and African American girls, respectively. Remaining busy also showed differences as African American girls (32%) and Caucasian girls (22%) cited higher scores than Hispanic girls (7%). Showing the benefits of physical activity are not clear outside of the physical domain. Helping to remain busy can help students avoid

dangerous distractions. Socializing can encourage competitiveness and long-lasting friends through activities. These must be placed at the forefront of classrooms for students to maximize time spent being active.

The study also reported on determinants that fell into the categories of injury (41%), sweating (20%), and disliking certain sports or exercises (20%) (Grieser, 2006). The results showed injury concerns were based on either past injuries (their own or friend's) or fear of future injuries (aggressive players or perceived risk). Addressing these concerns would come with safer equipment, personal space, and playing games for time limits instead of the score (limiting the need for overly aggressive students). The determinant of sweating also came with the potential for embarrassment or physical discomfort with students saying, "I don't like to sweat. Because, for example, I have dance first period, and it gets my hair all messed up, and it just makes you stink and everything." Another student stated, "I have been knocked down before . . . and then, I got back up and I was breathing very heavily. It looked so embarrassing because the other girls were so physically active, still breathing right, and it was just horrible." (Grieser et al., 2006, p. 45). Addressing concerns about embarrassment is difficult, as each student perceives moments differently, but being able to hear their thoughts in advance should lead to teachers making their space more inclusive and giving information that tells students they are not alone in their feelings. Most students disliked activities centered around running; this can be adapted by incorporating games that do not have much running and building towards movements that require more running. A physical education teacher could plan a curriculum that starts slowly at the beginning of the year and gradually increases the level of exercise in the class.

1.5 Summary

Through multiple studies, there seems to be a consensus that including student voice in the classroom has positively affected interest and will lead to more participation as students are given activities they prefer. It will also open the door for teachers to offer activities like those selected by students to diversify their palettes. Observing the differences in age, ethnicity, and gender will also help eliminate any confusion about who prefers what and paints a clear picture of preference. Thus, the purpose of this study is to determine how the perception or the choice to be physically active changes among different ages, genders, and/or ethnicities in a middle school setting and how it affects participation.

CHAPTER 2. METHODS

2.1 Participants

Participants were 147 students (n= 85 male) from three local middle schools (grades 6th, 7th, and 8th) in Fayette County, Lexington, KY. The ages of the students ranged from majority 11 to 14 (11 years old: 39, 12 years old: 49, 13 years old: 43, 14 years old: 14) with one student each who was ten and 15. Ethnicity broke down as follows: 38 Caucasian, 48 African American, 61 Other. The schools involved were Leestown Middle School, Morton Middle School, and Winburn Middle School. Recruitment took place through the school's physical education classes and their willingness to involve the students. Participants' identities were completely anonymous as no names were collected. It is unclear however the number of students who missed the day of data collection (possible reasons include absence, transfer, and suspension) and were not included in the data, even though their consent form was signed.

2.2 Instruments

Students were given a survey with a list of the activities/units offered in their regular curriculum for their physical education class along with the already validated Physical Education Attitude Scale (PEAS) (Orlic et. al., 2017). The survey was previously validated using consisting of 659 students from three different schools in urban communities. It also used external validity measures such as Academic Self-concept in PE, a scale for assessment of academic self-concept in PE and the Gender, PE grade and participation in organized sport, short socio-demographic questionnaire (Orlic, 2017). The PEAS was modified for this study. Students were also given a survey consisting of a list of different activities (35) that they may or may not have in their regular physical education class and asked to rank each based on their preference with the hopes of the survey allowing the students to include their voices in potential activities. The surveys used a Likert scale with a 5-point rating scale ranging from strongly prefer (5) the activity/unit to strongly dislike (1) the activity/statement.

At the end of the survey, participants were asked to add written information on why they placed certain activities in the strongly preferred or strongly disliked categories, to search for reasoning by their preferences. Included in the survey was also a section for a participant to give their age, gender, and/or ethnicity if they were comfortable sharing. Names were not included as the questionnaire was anonymous. The goal of this was to better group responses by these parameters to observe preferences while maintaining anonymity. The only other equipment needed during the survey was either pen or pencil for filling in information. Directions were included on paper copies of surveys to help alleviate any confusion. The researcher was present to answer any questions.

2.3 Surveys

The Physical Education Activity Scale (PEAS) was chosen for this survey due to it being all-encompassing for a PE class. Some statements covered the satisfaction and comfort of the students and the activities and teacher in the class. The order of these questions was also meticulously thought out as the arrangement had statements from each category randomized to not overwhelm one category at a time. Once separated these categories led themselves well to a Chi-Square Test as the dependent variables were weighed against age, ethnicity, and gender. The same was done for the activities list, as the groups of team sports, individual sports, and leisure activities were placed against the independent variables to find any significance.

2.4 Procedures

Data collection consisted of a one-time visit to the schools (although researchers visited once before handing out consent forms) and was conducted in the gymnasium. The surveys were completed on paper copies during the student's regularly scheduled physical education class and were completed only once.

Both surveys were given to the students at the same time to minimize movement during completion. The lead researcher along with the student's physical education teacher went over the instructions for the survey and the expectations. The instructions consisted of, "Students will complete the Physical Education Attitude Scale (PEAS) to the best of their ability. They are answering the statements as honestly as possible. Following this, students will also complete a rating scale for the activities that they currently have in their Physical Education class. Please mark with an X in the box you most agree with," for the

first survey. Along with this, there was a section that states, "please rank your favorite activities to do while being physically active" in the second survey.

Students were instructed to answer truthfully and complete the survey to the best of their ability. The researcher attempted to have students remain quiet during the survey to avoid skewing others' biases toward others around them during the survey. Following the completion, students raised their hands, and the survey was collected by the proctors. Students were given about twenty minutes of class time to complete the survey. If not completed, students were allowed more time, while the regularly scheduled class activities began.

2.5 Data Analysis

Research questions for this study included: Does PA preference differ by age, gender, or race/ethnicity? Does the perception of PA change?

Following the completion of surveys, codes were created according to the answers to be obtained from participants, and then any common themes were tracked in terms of what age, gender, and ethnic group is choosing what activities, and the data were analyzed. The results of the questionnaire could potentially lead to changes in students' curricula. Three-way ANOVAs (Analysis of variance) were conducted to analyze any significance in preference of PA by age and ethnicity, while t-tests were administered for genders.

Data were analyzed using SPSS to provide descriptive statistics via a Chi-Square Test. Data were grouped by age, gender, or ethnicity using the different activities or statements to compare. The PEAS measured four dimensions: Satisfaction, Comfort, Activity, and Teacher. The satisfaction factor was saturated by items related to general emotional experience about PE. The Comfort factor was comprised of somewhat more

specific emotions toward PE, such as relaxation or anxiety related to PE. The third factor, Activity, covered motivational processes related to participating in PE classes. The last factor, the Teacher, was saturated by items measuring the student's view of the PE teacher (Orlic et. al., 2017).

In the second survey, items were broken down into three groups consisting of Team Sports, Individual Sports, and Leisure Activities. The independent variables in the study were the students' genders, ethnicities, and ages/grades. The dependent variables for this study were the activities, grouped in either team, individual, or leisure. This was done to better understand the differences in participation. Bias towards certain activities was noted, for example, a student who solely enjoys individual sports may lean strongly towards activities such as tennis or archery as opposed to other activities. Students placing bias towards other students were dealt with during the presentation of surveys as proctors informed students to remain silent.

CHAPTER 3. RESULTS

3.1 Results

The purpose of the present study was to determine if there were any PA preferences in middle school students based on their age, gender, or ethnicity. We observed perceptions of physical education using the four different dimensions of the PEAS. Upon running the descriptive statistics, the frequency and proportions for the different age, gender, and ethnic groups were presented (see Table 3.1). The largest student age groups were 11 (n=39), 12 (n=49), and 13 (n=43). The student gender groups of males (n=85) and female (n=59) were the most common with 'other' only listing a few (n=3). Ethnicities were majority White (n=38), Black/African American (n=48), and Hispanic (n=47), while Asian (n=3) and

Other (n=11) were the minorities. This, in turn, led them to be grouped with Hispanic to create the “other” category in the Chi-Square Tests. For each group (genders, ethnicities, and ages), a Pearson Chi-Square value was reported. Along with this value, there was an Asymptotic Significance (2-sided) column, which shows the level of significance between activity and either age, gender, or ethnicity. The same results were provided for the PEAS, as any statements with Asymptotic Significance (2-sided) score lower than 0.05 were deemed to be significant. The significance is related to the statement/activity concerning either age, gender, or ethnicity of the student.

Table 3.1 Descriptive Statistics

	Frequency	Proportions
Ethnicity		
White	38	.26
Black / African American	48	.33
Asian	3	.02
Hispanic	47	.32
Other	11	.07
Gender		
Female	59	.40
Male	85	.58
Other	3	.02
Age		
10	1	.07
11	39	.26
12	49	.33
13	43	.29
14	14	.10
15	1	.07

After the completion of the Chi-Square Tests, Pearson Chi-Square value scores were placed into the groups of Team Sports, Individual Sports, and Leisure Activities (see Tables 3.2 - 3.4) as well using the PEAS dimensions of Satisfaction (further broken down into positive and negative), Comfort, Activity, and Teacher (Tables 3.5 - 3.7, 3.10 - 3.11). Once each group was created, the P-value scores for each activity or statement were then recorded. The significance of these scores was also marked with one or two asterisks. The number assessed to determine significance was 0.05 with one asterisk signaling the Asymptotic Significance (2-side) was lower (.037; Table 3.8), while two asterisks showed that the Asymptotic Significance was much lower (.001; Table 3.9). The significance is related to age, ethnicity, or gender relationship to either a statement or activity. With an Asymptotic Significance (2-side) lower than .05 in their age, ethnicity, or gender the student is more likely to prefer an activity or statement as opposed to the other groups. There were instances where no significance was shown for an activity or statement, meaning neither age, ethnicity, nor gender affected how the students perceived it. On a few occasions, some statements/activities had significance for two categories at once, showing that it was potentially affected two by age, ethnicity, or gender.

Table 3.2 Team Sport comparison across different groups

	Gender	Ethnicity	Age
Baseball / Softball	9.467	27.762	30.288
Basketball	23.829**	43.931**	29.953
Field Hockey	12.335	13.445	24.270
Football / Flag Football	21.710*	28.450	24.963
Frisbee	3.172	27.247	34.691
Kickball	17.915	25.722	30.933

Table 3.3 (continued) Team Sport comparison across different groups

Hockey	14.352	19.243	22.760
Lacrosse	10.686	19.951	18.095
Relay races	10.392	28.573	18.397
Rugby	12.003	19.664	24.759
Soccer	19.809*	19.609	26.808
Volleyball	12.812	23.703	32.850

Note: Gender refers to females and males; ** refers to $p < 0.001$; * refers to $p < 0.05$; Ethnicity refers to White, Black / African American, and Other (categorized as other, Asian, and Hispanic). All numbers are taken from P-value scores.

Table 3.4 Individual sports comparison across different groups

	Gender	Ethnicity	Age
Archery	7.870	19.842	23.715
Badminton	8.471	35.125*	37.754
Dancing	27.730**	49.104**	23.152
Golf / mini golf	5.714	34.023*	31.436
Gymnastics	15.792	30.202	20.491
Outdoor activities	12.123	20.329	19.025
Racquetball	8.976	29.459	27.498
Running	11.013	27.074	28.914
Swimming	4.570	56.091**	22.253
Table Tennis	13.360	27.236	20.893
Track activities	7.250	23.486	30.676
Tennis	9.393	34.103*	24.684
Weightlifting	16.883	25.217	33.782

Table 3.5 Leisure activities comparison across different groups

	Gender	Ethnicity	Age
Bowling	6.861	20.026	22.752
Biking	13.435	20.685	34.201
Climbing activities	3.405	33.318*	27.688
Jogging	15.104	17.206	24.782
Juggling	6.919	32.639*	22.871
Rope activities	6.248	22.037	32.070
Skating activities	10.676	36.139*	27.089
Tag like games	10.700	27.781	22.030
Yoga	24.538**	20.889	17.244

Table 3.6 Positive Satisfaction comparison across different groups

	Gender	Ethnicity	Age
I like to attend PE classes.	14.937	19.602	34.360*
I would like to have more PE classes weekly.	6.535	20.893	18.650
I can't wait to have a PE class.	7.655	13.756	15.192
Physical education is the most interesting school subject	18.950*	18.147	21.859
I am happy in PE classes.	6.381	26.235*	11.564
I don't like to miss a PE class	20.266**	12.012	21.623
I find PE classes interesting	10.119	48.674**	22.738

Table 3.7 Activity comparison across different groups

	Gender	Ethnicity	Age
I like it when a PE teacher pays me a compliment.	8.583	26.218	14.772
I do my best in PE classes.	4.446	16.225	14.178
I like that we are in movement in PE classes.	16.427*	23.251	13.309
What I learn in PE class is useful for everyday life.	4.735	14.399	8.807
I've learned a lot in PE classes.	13.471	16.146	15.110
I like to show what I know in PE classes.	5.604	22.542	16.078
I like to attend PE classes wearing appropriate gear.	19.309*	17.910	19.372
I like when we use equipment and apparatus in PE class.	6.243	27.421*	16.618
I like when the PE teacher assigns us some harder exercises	15.540*	11.270	16.445
PE classes encourage me to exercise in my free time.	6.226	14.082	23.307
I am active in PE classes	18.730*	28.758*	25.328

Table 3.8 Teacher comparison across different groups

	Gender	Ethnicity	Age
The PE teacher is friendly toward all of us.	2.444	12.878	14.838
I think that PE teachers design classes well.	10.915	10.386	10.946
The PE teacher is not interested in working with students.	8.092	16.058	20.142
My PE teacher encourages me to exercise in my free time.	6.426	17.855	11.194
My PE teacher is too strict.	12.916	32.239**	16.549
The PE teacher is always eager to teach us new exercises.	5.993	9.372	11.749
I like PE thanks to my teacher	8.963	14.376	17.357
The PE teacher encourages me in class.	12.866	19.837	12.456

Table 3.9 I like that we are in movement in PE classes. * Gender

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	16.427 ^a	8	.037
Likelihood Ratio	15.356	8	.053
Linear-by-Linear Association	.114	1	.735
N of Valid Cases	143		

^a 9 cells (60.0%) have an expected count of less than 5. The minimum expected count is .04.

Table 3.10 Sometimes I'm afraid while we exercise in PE Classes. * Gender

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.642 ^a	8	<.001
Likelihood Ratio	25.063	8	.002
Linear-by-Linear Association	1.896	1	.169
N of Valid Cases	146		

^a 7 cells (46.7%) have an expected count of less than 5. The minimum expected count is .06.

Note: Tables 3.8 and 3.9 were chosen to demonstrate the level of Asymptotic Significance that determines slight significance (.037) or major significance (<.001) compared to .05

3.1.1 Does PA preference differ by age, gender, or race/ethnicity?

Upon review of the results of the Chi-Square Tests, multiple areas of activities resulted in varying differences. Age, however, did not have any significance between Team Sports, Individual Sports, or Leisure Activities meaning there was no specific age group that preferred one activity above another within this data set. This differed for gender and ethnicity as on two separate occasions there was a major significant difference present for the same activity. These activities were basketball (Team Sport) and dancing (Individual Sport), although it is unclear which groups particularly enjoyed them due to the nature of the Chi-Square Test. Table 3.10 shows the average scores of each significant sport by gender.

Table 3.11 Average scores of sports between genders

	Female	Male
Dancing	3.2	2.0
Basketball	3.3	3.6
Yoga	3.0	2.0

The major correlation, however, shows an opportunity to include activities that students enjoy leading to greater engagement during class time as multiple were included in these categories. Continuing with gender differences, yoga appeared to show major significance as opposed to ethnicity or age. When viewing ethnicity, several individual sports showed significant differences in this category: swimming ($p < .01$), tennis ($p < .05$), badminton ($p < .05$), and dancing ($p < .01$), many of which are typically associated with high socioeconomic areas.

3.1.2 Does the perception of PA change by age, gender, or race/ethnicity?

A constant while conducting the analysis was the significant differences associated with gender. When exploring satisfaction, there was more likely to be significant satisfaction compared to ethnicity and age (see Table 3.11). Statements such as, “I’m mostly bored in PE classes,” “I can’t wait for PE class to end,” and “I skip PE classes whenever I can,” all showed major significance with gender, but not age or ethnicity. Continuing with the trend of Negative Satisfaction, several statements in Comfort showed more significance for gender than age or ethnicity. These statements were, “Sometimes I’m afraid while we exercise in PE classes,” “I avoid some exercises we perform in PE classes,” “I think that PE is only a waste of time,” “and I feel uncomfortable in PE classes” and “I feel fear in PE class” (see Tables 3.12 and 3.13). In terms of age and ethnicity, very few statements were significantly different. Statements such as, “I like to attend PE classes,” “Too much competition in PE classes bothers me,” and “PE classes are too tiring for me,” all showed significance by age, however, it was unclear whether this was due to students being older or younger during their PE classes. It is to note however that all these statements are associated with more negative experiences in PE. When looking at ethnicity,

two statements had major significance: “I find PE classes interesting” from Positive Satisfaction, and “I find PE classes interesting,” from Teacher. Both are also being affected by their respective PE classes and teachers as well as ethnicities.

Table 3.12 Negative Satisfaction comparison across different groups

	Gender	Ethnicity	Age
I’m mostly bored in PE classes	26.683**	26.256	16.594
I can’t wait for PE class to end.	22.371**	14.250	21.171
I don’t like PE	11.114	20.555	16.160
I skip PE classes whenever I can	35.295**	6.877	18.592

Table 3.13 Comfort comparison across different groups

	Gender	Ethnicity	Age
Sometimes I’m afraid while we exercise in PE classes.	32.642**	12.375	21.352
I avoid some exercises we perform in PE classes	26.944**	7.314	32.931*
I think that PE is only a waste of time	41.862**	11.359	15.968
I do not feel comfortable when wearing PE gear	11.348	13.410	26.655
I feel uncomfortable in PE classes	30.870**	19.806	21.014
Too much competition in PE classes bothers me	13.575	11.848	36.696*
PE classes are too tiring for me	12.060	20.262	34.476*
I think that PE is less important than other school subjects	10.158	20.103	21.200

Table 3.14 (continued) Comfort comparison across different groups

PE class does not stimulate socializing	6.025	23.678	15.819
I feel uncomfortable changing my clothes in front of others in the dressing room	4.308	24.010	23.605
I feel fear in PE classes	22.191**	9.758	12.880
I feel uncomfortable as soon as I enter the school gym	11.599	23.375	18.624

Table 3.15 Average scores of comfort between genders

	Female	Male
I feel uncomfortable in PE classes.	2.6	1.8
I'm mostly bored in PE classes.	2.0	1.6
I avoid some exercises we perform in PE classes.	2.5	1.8
I skip PE classes whenever I can.	1.5	1.2
I can't wait for PE class to end.	2.2	1.6
I feel fear in PE classes.	2.0	1.4
I think that PE is only a waste of time.	1.5	1.3
Sometimes I'm afraid while we exercise in PE classes.	2.3	1.8

CHAPTER 4. DISCUSSION

4.1 Discussion

The present study was meant to examine current middle school students around the Fayette County area to determine if age, ethnicity, or gender affects their preference or participation in PE class. The findings showed that gender played the largest role in

preference and participation across the statements and activities. In the satisfactory (negative) table, three out of the four statements showed statistical significance in gender while there were no differences in age or ethnicity. When exploring the activities, it was shown that no age group showed signs of significance, while gender and ethnicity overlapped twice (see results sections). Ethnicity also played a key role in which activities were favored, often showing significance toward individual sports as opposed to any other activity list.

There are varying reasons why a student may prefer one sport or activity to another. In schools, for example, it could be due to their friends already participating, viewing it through television/social media, or perhaps they have seen the game played by their family members at home and are curious. After reviewing the final questions of the survey students were asked to write out their favorite activities, which provided more qualitative data.

4.2 Age

The ages for students in this study primarily focused on those entering adolescents. Typically, students in this age group are at a time in their lives when they drop PA for other reasons such as art, music, school, work, or relationships (Couturier et al., 2005). When looking at the results of the Chi-Square Tests for all types of activities, none stood out as being highly preferred or disliked. This may be perceived in both positive and negative ways. The former can be viewed as the students being willing and able to participate in any type of activity presented. If this is the case, then their PE curriculum could include more variety during class units as the open-minded students then engage in activities typically not done in PE. The negative side could be that the students did not show significance in

the activities listed due to a lack of interest in PA. Students in this age group may begin to phase out of being active. Research presented by Couturier et al. (2005) is supported by the significance shown in age and the comfort table of the current study. Statements such as, “I avoid some exercises we perform in PE classes,” “Too much competition in PE classes bothers me,” and “PE classes are too tiring for me,” showed significance regarding age and all have negative connotations associated with them. This may be related to the student's particular PE class, curriculum, or teacher, but regardless shows a lack of interest in PA which moving forward could lead to those students not being active at all.

4.3 Ethnicity

While going through the results related to ethnicity, Howard et al. (2011) comes to mind as they state that students are likely to become more positive toward PA if they are in a learning environment that makes them comfortable and confident. In this study, this sentiment is echoed as there was major significance shown with the survey choice, “My PE teacher is too strict,” and ethnicity. This could lead to these students being disinterested in PE or PA. However, there is optimism as significance was also shown in statements such as: “I am happy in PE classes,” “I am active in PE classes,” and “I find PE classes interesting.” The latter showed major significance with ethnicity. All the statements presented show a clear attraction to PE and the need to foster a safe environment for the students to succeed. Improving ethnic representation may be needed at this point as all PE teachers in this study were Caucasian, which aligns with Boyd's (2021) previous indication that most teachers in public school settings are homogeneously White (80%) and have been decades. Meanwhile, only 38% of this study's population identifies as Caucasian again echoing Boyd (2021) as it was “found that Black, Latinx, Asian/Pacific Islander, and

Native American students (i.e., students of color) in the United States represent more than half of public-school students.”

Ethnicity also appeared to be a factor affecting how the students responded to the activity list, as many sports showing any significance were or could be considered individual sports. The sole exception to this was the team sport basketball but the likes of tennis (.025), dancing ($p < 0.001$), climbing ($p = .031$), skating ($p = .015$), swimming ($p < 0.001$), badminton ($p = .019$), and golf/ mini golf ($p = .026$) all showed significance with ethnicity. No other activities ($n = 27$) were shown to have any significance, and many assumptions could be made from this list. One may consider the students in the present survey did not enjoy working with others in the classes. It could be that many of the individual sports are not offered in their PE classes, leading them to only be involved if they are genuinely interested. Finally, it may be a result of their family; either a relative plays/played the sport and the child became interested that way or a family member placed the student in that activity at an early age. This thought process is like Hill and Cleveland (2005), who found similar disparities in their results as they also found strong evidence of ethnic differences in the preference of activities might also have some basis in socioeconomic status, racial stereotyping, perceived dominance of sports by a culture, and role modeling within a culture. Both confirm Williams and Bedward's (2001) findings of different cultures giving sports are more highly valued than others and making it imperative to hear the inputs of students moving forward.

4.4 Gender

For gender, there was major significance present for only three activities: basketball, yoga, and dancing. The latter of the two is supported by Hill (2005), as they

write about how girls in this age group may favor individual and noncontact activities such as swimming, volleyball, and contemporary dance, as opposed to boys who select sports such as football, which received some significance as well. Along with the Chi-Square results, the use of descriptive averages conducted earlier in the study verifies the previous literature girls preferred these noncontact activities such as dancing ($M_{\text{girls}}=3.2$; $M_{\text{boys}}= 2$, respectively) and yoga ($M_{\text{girls}}=3.1$; $M_{\text{boys}}=2$ respectively) as opposed to boys.

Concerning the PEAS survey for gender, it was clear that the Satisfactory (negative) levels of the students involved were not received well. Three out of the four statements in the negative satisfactory category were shown to have major significance with gender (See Table 3.11). In other words, girls were receiving more negative satisfaction from their PE class than boys. When going through descriptive averages for their scores it was shown that girls placed scores higher on average for all these statements than boys. Statements such as, “I’m mostly bored in PE classes, ($M_{\text{girls}} = 2$; $M_{\text{boys}} = 1.6$)” “I can’t wait for PE class to end, ($M_{\text{girls}} = 2.2$; $M_{\text{boys}} = 1.6$)” and “I skip PE classes whenever I can, ($M_{\text{girls}} = 1.5$; $M_{\text{boys}} = 1.2$),” all show the major significance towards girls. Based on previous literature it has been established that allowing students an opportunity to have input on what activities in which they will participate may potentially increase participation as the perception of PE may be more positive (Howard et al., 2011). Findings from this study may allow teachers to give students more input into what activities are offered in the curriculum, which may alleviate the disdain that could be developing for PE.

This issue was also shown in the Comfort table as statements such as, “Sometimes I’m afraid while we exercise in PE classes,” “I avoid some exercises we perform in PE classes,” “I think that PE is only a waste of time,” and “I feel uncomfortable in PE classes,”

all showed major significance. Taken from table nine, girls felt more strongly about the following statement when analyzed with descriptive averages; “Sometimes I’m afraid while we exercise in PE classes, ($M_{\text{girls}} = 2.6$; $M_{\text{boys}} = 1.8$)” “I avoid some exercises we perform in PE classes, ($M_{\text{girls}} = 2.5$; $M_{\text{boys}} = 1.8$)” “I think that PE is only a waste of time, ($M_{\text{girls}} = 1.5$; $M_{\text{boys}} = 1.3$)” “and “I feel uncomfortable in PE classes, ($M_{\text{girls}} = 2.6$; $M_{\text{boys}} = 1.8$)” and ‘I feel fear in PE class, ($M_{\text{girls}} = 2$; $M_{\text{boys}} = 1.4$)” (Table 3.13). The higher score on the Likert Scale for these types of statements shows a potential long-term dislike for PE. Once again it makes the need for students' voices in PE more prevalent as it could be conducive to a more successful environment (Howard et al., 2011). These findings demonstrate a lack of communication between the parties involved as the students are not getting the most out of PE class currently. This may be the result of several determinates such as injury, sweating, or disliking certain sports and exercises (Grieser, 2006) or level of competition/intensity. Although this study did not measure these determinants, it is of note due to the nature of the statements and the outcomes of previous literature.

4.5 Most/Least Favorite Quotes

An additional and uniquely helpful portion of the activity survey was the short answer questions asking the students to list a few of their favorite and least favorite activities, along with defining why they were picked. A few notable, positive quotes for activities students favored were; “volleyball, freeze tag, and kickball because I’m not as competitive in these games,” from an eleven-year-old Hispanic girl, “basketball because it is my dream,” from a thirteen-year-old African American boy, “weightlifting because I like to challenge myself,” from a thirteen-year-old Hispanic boy, and “volleyball, basketball, and football because those sports want you to work hard and motivate you,” from an

eleven-year-old Hispanic girl. All offer different perspectives on the “why” behind a particular sport or activity. Both intrinsic and extrinsic motivation, competition level, and future goals are but a few reasons to gravitate toward an activity. Often, this input is not at the forefront of the class, predetermined lessons are established long before these students arrive.

A few activities listed as the least favorite of students were; “football, risk of injury, baseball/softball, not very engaging,” from a white thirteen-year-old who chose not to identify gender, “soccer, football, and dancing, because I get too sweaty and I feel uncomfortable,” from an eleven-year-old Hispanic girl, “I don’t like the track because I have asthma and it makes it hard,” from a thirteen-year-old Hispanic girl, “basketball because I don’t like running,” from a twelve-year-old African American girl, and “bowling and climbing because they can be boring,” from a twelve-year-old Hispanic girl. These quotes present a different set of issues for their PE teachers, as some can be addressed directly such as “bowling and climbing because they can be boring,” or “baseball/softball, not very engaging,” while others are more complex such as “I don’t like the track because I have asthma and it makes it hard,” and “soccer, football, and dancing because I get too sweaty and I feel uncomfortable.” The former can be fixed with modifications to the respective activity to them more engaging those who are not interested at first. The latter poses issues due to the students being uncomfortable or having medical issues that cause the activities to falter. In these, it is best to leave the participation of the student up to them. Having these perspectives will give the teacher insight to understand that the students are not deviant by not engaging but are uncomfortable.

4.6 Limitations

During this study, limitations were noted. There were instances in which students did not complete portions of the surveys. This may be the result of students rushing to begin the PE class, lack of interest in the survey, or confusion about the wording of statements of activities. It is unclear what directly caused students to leave blank answers. All surveys were still used for data analysis, as the data were not affected by missing responses. The Chi-Square Testing was meant to evaluate the relationships between age, ethnicity, and gender-related to Team Sports, Individual Sports, and Leisure Activities as well as Satisfaction, Comfort, Activity, and Teacher. In doing this, the Chi-Square Tests did not show specifics in regard to what different groups preferred but instead showed how age, ethnicity, and gender played a role in the students selecting their answers and showing their preferences. It also points to which category was specifically affecting either an activity or statement.

4.7 Strengths

On multiple occasions, there were instances of female students not feeling satisfied with their experience or comfortable in PE class. This could be a key contributor to this student being inactive moving forward and must be addressed. Including the input of the students in the class would be essential in changing these perceptions of PE. Hearing the “why” behind the students’ feelings toward class would allow for a more inclusive, productive environment. There are also gaps in how ethnicity is affecting PE class. As significance was shown for most individual sports, as opposed to team sports or leisure activities. There are several reasons this may be the case including but not limited to; socioeconomic status, racial stereotyping, perceived dominance of particular sports by a

culture, and role modeling within a culture. Outside of participation issues, there were also some discrepancies with how the students were perceiving PE. Significance was shown for statements such as "my PE teacher is too strict," "I am happy in PE classes," "I am active in PE classes," and "I find PE classes interesting."

CHAPTER 5. CONCLUSION

The findings in the present study show a plethora of information in favor of including students' voices in physical education classes moving forward. Examining the lens of age, gender, and ethnicity, each grouping has its dilemmas with current PE. Gender and ethnicity specifically have the most work to still be done as students are yet to have their needs met. More research must be conducted into this matter; however, it has shown that there is a need for improvement but also ground to build on. The surveys involved in the study cover a wide range of activities and topics, all of which may contribute to a better understanding of what the students enjoy in PE. Ideally, future teachers will use this study and the information provided to adjust how their classes are being run throughout the semesters. Placing a focus to better ensure that the students will enjoy being active, it is in everyone's best interest to have their opinions heard.

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VITA

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