

**Influence of Social Status on Fifth Grade Students' Group Work during
Physical Education**

by

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ABSTRACT

Education utilizes group work to increase social development, engagement, and learning outcomes of students in a less traditional way (Baines, Blatchford, & Kutnik, 2016). However, classroom research claims social status can influence the participation and engagement of group members, creating issues of inclusiveness and equity (Cohen, 1994). In the physical education setting, little research has explored the influence of social status in affecting the experiences of students participating in groups. Therefore, the purpose of this investigation was to examine the influence of social status in a physical education group work context. Three studies are included in this dissertation. The first study explored the effect of various status characteristics in predicting social hierarchy during a Sport Education unit. The second study investigated the effect of social status on moderate to vigorous physical activity (MVPA), skill improvement, and knowledge development from a Sport Education unit. Lastly, the third study, using Bourdieu's theory of habitus as the framework, present insight into students' perceptions of their social status and experiences while participating in group work. The research design for all three studies was based on utilizing sport education model to frame the group work portion of the hockey unit. Results from the first study indicated height and perceived skill ability significantly predicted social status in 12 teams of four participants (n= 48).

Additionally, the second study yielded results showing significant gains in skill and knowledge development between high and low-status students participating in a group work unit. Moreover, there was no significant difference in MVPA between high- and low-status students. Lastly, the qualitative study revealed diverse perceptions of students as they experienced the group work phenomenon. The results from these studies emphasize a need for revisiting effective group work as an instructional strategy in physical education. Future research should explore strategies and grouping methods to provide equal learning opportunities for all students.

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CHAPTER I

INTRODUCTION

Group work in education has been prolific in allowing students to learn content knowledge in a less traditional way (Slavin, 1992). Specifically, group work promotes social development, engagement, and learning outcomes (Baines, Blatchford, & Kutnik, 2016). However, effective group work is only successful when interpersonal and small-group skills are utilized (Johnson & Johnson, 1990). Interpersonal and small-group skills are those for which individuals can interact, engage, and form relationships effectively within the group (Johnson & Johnson, 1999). While education provides, in theory, equal learning opportunities for all individuals, a social phenomenon appears to challenge this claim. Cohen (1994) dubs the phenomenon a “status problem” in which social status influences equal participation and interactions in educational settings. While group work has been shown to be an effective teaching method in increasing engagement and learning potential through collaboration, the “status problem” demonstrates how social standings within a group affect impotent students and their initiated contributions (Cohen & Lotan, 2014). Social status can be viewed as the perceived hierarchy of individuals in the groups to which they belong (Sidanius & Pratto, 2001). Magee and Galinsky (2008) define status as, “related to the respect one has in the eyes of others, generating expectations

for behavior and opportunities for advancement that favor those with a prior status advantage” (p. 2). Additionally, Cohen (1994) describes status as, “socially evaluated attributes of individuals for which it is generally believed that it is better to be in the high state than the low state” (p. 24). While status influences the social hierarchy, the acquisition of power is inevitable (Magee & Galinsky, 2009). That is, in attaining high-status, individuals are consequently perceived as having more power and importance than someone of low-status based on the resources and knowledge they may offer (Lin, 1999). Due to status being dependent on the perception of others, the dynamic concept is evaluated during each setting (Cohen, 1994) and even mutually agreed upon among the group (Cohen & Lotan, 2014). Moreover, individuals’ perceptions of their status have been shown to closely match the group’s perception, leading status to be a generally universal concept (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006). Status advantages can entail characteristics like attractiveness (Webster & Driskell, 1983), academic ability (Cohen & Lotan, 2014), physical ability (Barker, Quennerstedt, & Annerstedt, 2015a), popularity, socio-economic status, and gender (Brock, Rovegno, & Oliver, 2009; Ridgeway, 1991), among many other factors. A status characteristic must consist of at least two or more states to which expectations form and social hierarchy follow suit. For example, gender consists of two states: male and female, in which males are typically assigned higher status based on their competence for tasks utilizing higher order thinking skills (Ridgeway, 2001).

Educational research shows that social status affects the influence of students in their group, potentially affecting learning outcomes and social development (Cohen, 1994; Brock & Hastie, 2016). In fact, Cohen (1994) implied that higher interactions lead to increased learning, specifically “those who talk more, learn more” (Cohen & Lotan, 1995, p 100). Studies found that the high-status members spoke 15 times more frequently than their low-status members (Bales, Strodtbeck, Mills, & Roseborough, 1951), and 30% of members in an 11-person group contributed to more than 75% of the group’s discussions (Buzaglo & Wheelan, 1999). Therefore, status characteristics are important because they lead to major differences in participation, influence, and student achievement (Leechor, 1988). Additionally, high-status students tend to dominate group work to benefit themselves, while excluding those of low-status (Johnson & Johnson, 1990). This example presents a “rich get richer” effect in which those with power and wealth benefit from the exercise. Consequently, the decisions made for the group’s performance or processes are dominated or based on input from high-status members (Anderson & Kennedy, 2012).

The film *Legally Blonde* (Platt, Kidney, & Kuketic, 2006) portrays the pervasive impact on perceptions of competence. Reese Witherspoon plays a beautiful woman (Elle Woods) attending Harvard Law School. Since Witherspoon represents two status characteristics typically viewed less important in law school (gender and attractiveness), she is perceived as having low intellectual competence and consequently mocked by others, as it is assumed that her contributions are irrelevant and lacking influence. When Witherspoon participates

in group work during her law classes, her influence and interactions were considerably lower than her male counterparts, affecting her potential to learn the content. The following is an excerpt from the Legally Blonde script:

“Elle: Hi, everybody.

Male: Elle, what are you doing here?

Elle: I've come to join your study group.

Elle: Look, I brought sustenance (muffins). Who's first?

Male group member: Our group is full.

Elle: Is this like an RSVP thing?

Male: No. It's like a smart people thing.”

Anderson and Kilduff (2009) sum up this phenomenon well by stating:

“First, an individual member’s influence in a group is determined by the group. Second, groups give influence to members who possess superior competence and expertise. Third, by putting their most qualified members in charge, groups stand the best chance of achieving their collective goals” (p. 491).

Status plays an influential and dominant role in interactions within group work, but is surprisingly underdeveloped in physical education research (Barker, Wallhead, Quennerstedt, 2014). Consequently, research in classrooms and physical education is focused on creating optimal learning experiences by promoting equal participation of students despite the social hierarchy.

RESEARCH QUESTIONS AND HYPOTHESES

- a.** Which status characteristic/s predict social hierarchy during a physical education group work activity?
 - i. We have hypothesized that perceived skill ability will contribute the most to high-status, as the perceived competence level and contribution to the team will be considered more important than other factors.
- b.** What is the effect of social status on physical activity, skill, and knowledge outcomes of high-status students compared to low-status students in physical education group work?
 - i. We have hypothesized a difference in physical activity during gameplay, skill, and knowledge outcomes between high and low-status students.
- c.** What are students' perceptions of their status and the effect on their discourse during a sport education unit?
 - i. We aim to understand how students construct the meaning of their perceived status vantage.

OPERATIONAL DEFINITIONS

Discourse: production of knowledge through language (Hall, 1997)

Interaction: characterized by verbal or non-verbal communication of the students

Relationships: affinities with peers

Perception: views or opinions regarding peers

Physical Activity: a bodily movement that is produced by the contraction of skeletal muscle and that substantially increased energy expenditure (Pangrazi, 2007).

Physical Education: education through movement (Pangrazi, 2007)

Social Hierarchy: “implicit or explicit rank order of individuals or groups concerning a valued social dimension” (Magee & Galinsky, 2008, p. 5)

Social Power: “asymmetric control over valued resources in social relations” (Magee & Galinsky, 2008, p. 16)

Sociometry: “the science of the human group and the study of the interaction of people” (Skubic, 1949)

Status: “socially evaluated attributes of individuals for which it is generally believed that it is better to be in the high state than the low state” (Cohen, 1994, p. 24).

CHAPTER II

REVIEW OF THE LITERATURE

Educational Research

Educational research studying the influence of status on interactions within classroom contexts has been well articulated but is far from developing a panacea for equal participation in groups (Cohen & Lotan, 2014). Initial understanding of the concept recognized not all students contributed and interacted in group work equally, but a focus on the influence of social power and contributions to status has been prominent. To explore this phenomenon in depth, sociologist Elizabeth Cohen dedicated her research to gain a better understanding. In particular, Cohen aimed to understand the conditions for which group work can benefit all participants in all aspects, despite social hierarchy and power. Cohen (1984) coined the term “status characteristics” to better define the aspects contributing to an individual’s status. In fact, Berger, Fisek, Norman, and Zelditch (1977) developed a theory to explain the status paradigm. These researchers developed the theory of status characteristics and expectation states to explain how the “power and prestige order in a newly constituted group of high and low-status members comes to parallel the relative ranking on a status characteristic initially held by members of the group” (Berger et al., 1977). Additionally, social inequity within group work is stimulated by establishing status

beliefs and expectations: "When a task-oriented group is differentiated with respect to some external status characteristic, this status difference determines the observable power and prestige within the group whether or not the external status characteristic is related to the group task" (Berger et al., 1977, p. 243).

Given the impact of high-status students on group work outcomes, a question in research involves how members attain status. Status characteristics theory outlines two types of status characteristics that contribute to status attainment: diffuse and specific. Diffuse characteristics are attributes that are external to the person, like gender, race, ethnicity, and educational level. Specific characteristics, however, relate to specific skills resembling athletic, writing, and reading abilities. The expectation states theory, in turn, explains that individuals and society will place expectations or stereotypes on others based on their characteristics. For example, if a child excels in mathematical ability, a teacher could expect this student to excel in all areas of academics. The issue with this concept, however, is individuals will place expectations on their peers within group work, even if the status characteristics are unrelated, and participate in the task accordingly (Berger et al., 1977). Understanding expectations are necessary to comprehend the impact of different status characteristics. Researchers have focused specifically on gender, race, popularity, attractiveness, motivation, personality, and academic ability as the more prolific contributors to status.

Status Characteristics

Gender has been shown to influence status and subsequent interactions. Specifically, men are generalized to be more superior or competent to women in society in completing important roles that require higher order thinking skills (Ridgeway, 2001). This assumption leads researchers to believe that men are more influential over women during group conversations (Webb, 1984). Webb (1984) studied the differences in gender and how it relates to the interactions initiated and achievement within majority-female, majority-male, and equal heterogeneous groups. Seventy-seven students (43% female, 57% male) from two junior high schools were recruited to participate in videotaped group work completing a mathematical problem. Videos were coded according to the type of interaction made by each student and tallied by gender. Results were dependent on each group: the females directed their interactions to males and had lower achievement in the majority-female groups ($p < .05$), males had higher achievement and ignored the females in the majority-male group ($p < .01$), and the equal heterogeneous group seemed to observe dissimilar results to the prior groups ($p < .01$). These findings suggest that females are less influential and academically hindered during group work of adolescents. Among the differences in perceived superiority between status, characteristics are the notion of race and ethnicity. Cohen and Roper (1972) attempted to produce equal interaction and participation of students based on their race and perceived competence status. Using theory of states characteristics and expectation states theories as the research lens, the researchers reinforced perceived and actual competence of their Black participants above their White counterparts to emphasize and assign

high-status to the Black participants. During a task to which participants were required to build a structure and teach the directions to their peers, 57 four-man groups (demographics not indicated) were videotaped and analyzed for the influential acts each participant initiated. Through questionnaires, results indicated despite an increased perceived and actual competence for Black participants; White participants were still observed as attaining higher status. However, from video data, race or competence was not a factor in determining influential acts, suggesting that deficiencies in low-status students do not contribute to the interactions, but rather the expectations of the low and high classification based on diffuse status characteristics. With an understanding that diffuse characteristics like race and ethnicity affect influence and initiation of individuals in group work, a focus on more specific status characteristics was called to action (Cohen, 1982). Her review of five other studies with similar research designs (Cohen, 1972; Cook, 1974; Riordan & Ruggerio, 1980; Rosenholtz & Cohen, 1983; Cohen & Sharan, 1980) found differences in initiated influences and acts based on race and ethnicity, with the White population dominating those influences. Cohen (1982) posits a concern for the racial discriminations in classrooms during a time when White dominance is present in society. Cohen (1982) explains that there is a decreased competence expectation for Black students than White students, serving a direct repercussion from a social status inequality.

The status value is sometimes confounded with attractiveness and popularity, also a direct reflection of societal beliefs. Moreover, popularity is

highly correlated to academic status, creating another variable to the concept of social status (Rosenholtz & Wilson, 1980). The expectation of attractiveness is that “what is beautiful is good” (Dion, 1972, p. 285). Despite sociologists associating beauty and popularity with expectations and status within society, there appears to be a large gap in studying the influence of attractiveness and popularity on interactions within group work (Frevert & Walker, 2014). While interactions were not measured, Webster and Driskell (1983) used the theory of status characteristics and expectation states to attribute diffuse characteristics like attractiveness and popularity to the influence of individuals. In a two-part study, college students ($n = 25$) were asked to differentiate 800 photographs of unattractive and attractive individuals. Part 1 involved eight photographs (four unattractive and four attractive individuals) chosen based on the consensus among the participants. Part 2 of the study consisted of asking participants to choose which of the individuals in the eight photographs they expected to be more important, react better behaviorally, more capable of reading ability and abstract ability, and have a higher GPA. Analysis of Variance (ANOVA) from part 1 of the study showed a significant main effect for attractiveness ($p < .001$) indicating that perceptions of attractiveness are a fairly consensual and cohesive concept. Part 2 results found that college students associate attractive people with high expectations of ability for almost any task. These findings support the idea that attractiveness contributes to status characteristics affecting the expectations individuals have toward their peers. Despite no studies that have measured attractiveness and popularity as causal relationships to interactions,

the variables contribute to the set of characteristics one may exhibit, thus affecting the amount of holding power. Though anecdotal, this information supports our understanding of the transfer of expectations and generalizations within society into the classroom and the advantages they pose regarding influence.

Among contributions to status and interactions was the idea that level of perceived motivation could be a determinant and direct reflection on perceived competence (Ridgeway, 1978). In a position paper by Ridgeway (1978), perceived motivational orientation and task competence were proposed to determine the extent to which external status characteristics affected individuals' participation in small groups. Although data was not collected, findings from the review indicated that a level of motivation could, in fact, contribute to the participation toward the group. The work by Ridgeway (1978) stimulated work on types of leaders and personality traits as they relate to status. Kalma, Visser, and Peeters (1993) further defined types of leaders, or those of high-status, as aggressive or sociable based on personality traits. Furthermore, college students who are considered more neurotic (based on results from a personality test) attained lower status within their fraternity than those students considered to be more extroverted (Anderson, John, Keltner, Kring, 2001). Suggesting that sociable, extraverted individuals could exhibit higher status, Anderson and Kildruff (2009) studied the attempt to gain influence over a group based on specific personality traits. The researchers argued that extroverted high-status individuals provide competence related cues to allow their peers to believe they

are capable of dominating the task, even if they are not able to. Therefore, dominant group members will exert confidence and competence to gain influence over the group. For example, during the commencement of a group task, a student claims: "I have done this before, this is easy" consequently assuming and promoting his dominance. Status of 68 undergraduate students participating in a group task was measured through observations from external research assistants (John & Srivastava, 1999). Group members were asked to rank their peers based on their influence. Then, the research assistants ranked group members in order of status, based on their observations of the behavior with the task. Lastly, participants completed self-reported ratings of personality dimensions (John & Srivastava, 1999) to measure trait dominance. The personality tests also provided information on the amount of extraversion, which researchers hypothesized would be directly related to trait dominance in group work. Results indicated trait dominance predicted the influence of individuals in the group ($p < .01$). Additionally, individuals of influence or dominance were significantly predicted by outside observers ($p < .01$). During the group task, results showed groups chose the first option proposed as their final answer 94% of the time, in which the two highest status members were three times likely to make that proposal. Anderson and Kilduff show that personality traits can influence group tasks, implying that high-status could be determined by confidence and promoted competence of the task. That is, if a person exerts themselves as overly confident or better than others, it could help them achieve higher status (Anderson, Brion, Moore, & Kennedy, 2012; Kilduff, Willer, &

Anderson, 2016). To further examine these implications and critically examine discourse within group work, Richmond and Striley (1996) studied six groups of four students and their planning, execution, and interpretation of a 10th-grade science assignment. These researchers decided to observe how status was assigned by the participants through the videotapes and audio recordings. This method allowed researchers to observe who was more dominant in the activity and who was more silent. Researchers then measured their engagement and construction of knowledge through the discourse analysis. Findings from the video analysis found that participants assuming the leadership or high-status role were not necessarily associated with who was more academically advanced in the task, but rather their social status within the school. In fact, these leaders were further defined as either inclusive or persuasive, which transferred to the engagement of the peers. In groups with inclusive leaders, participation by their peers was somewhat similar and equal. In contrast, groups with persuasive leaders consisted of discussion dominated by the leader, or high-status member, to which knowledge was constructed through convincing and alienating. Implications indicate that the leader's style within a group will, in fact, shape the construction of knowledge for others group members.

Status characteristics like race, gender, motivation, popularity, attractiveness, and personality all contribute to the attainment of status and power. However academic ability is more prominent in educational research (Cohen, 1982). In fact, Lord, Phillips, and Rush (1980) found that individuals

prefer leaders and assign influence to their peers based on their perceived competence over their social skills.

Academic Ability

In classroom settings, academic ability is the most powerful status characteristic influencing interactions due to the expectations of perceived competence and expertness in completing a task (Cohen, 1982). The work of Zander and Van Egmond (1958) has shown perceived intelligence to be correlated with power and dominating behaviors in group work, instead of actual intelligence. Initial work found that actual intelligence of children was not related to their interpersonal relations within a series of problem-solving tasks, so a question of perceived academic ability was raised (Zander & Van Egmond, 1958). In the study, Zander and Van Egmond (1958) focused on the impact of a set of characteristics (intelligence and gender) on social power and influence. Researchers hypothesized that boys with high intelligence and attractiveness have high social power, and in turn would be most influential in the decision-making task. This assumption was based on the resources that they have and know above their female and less intelligent peers. The sample included 226 boys and 192 girls in second grade ($n = 230$) and fifth grade ($n = 188$). Intelligence (school records), attractiveness (peer ratings), and gender were analyzed to determine the relationship to social power, measured through peer-ratings by classmates. An observer measured the behavior within the group task by coding interactions based on types like influence attempts, successful influence attempts, unsuccessful influence attempts, and demanding influence

attempts. Results found that intelligence alone was not significantly correlated with social power, but a combination of attractiveness, gender, and intelligence yielded significant results. Related to the small group task, however, students with high intelligence and high attractiveness significantly related to high social power and more demanding behavior ($p < .05$). Additionally, students associated with low social power did not contribute and were less influential in group work. To advance the notion of perceived academic ability influence, Tammivaara (1982) used the theory of status characteristics and expectations states to explain how participation rates of 144 fifth and sixth-grade group members could be controlled by modifying the task structure in dissociating reading ability. Status was determined by academic ability, reflected by reading achievement scores on a bogus "Reading Insight Ability Test." In between-subjects research design, the participants were made aware of their peers' reading ability as they were placed into their four-person groups consisting of 2 high-status and two low-status students. First, the groups were given a criterion task to control the effects of the treatment task. Criterion measures of initiation and influence attempts through interactions found that high-status students initiated more (mean = 5.3 acts) than low-status students (mean = 4.1) per minute. Next, the task structure for the treatment was modified regarding introducing and delivering the task. For example, teachers introduced the task by explaining that reading ability irrelevant to the task. Results from the treatment task indicated that performance scores from the high and low-status students were relatively similar. Additionally, participation rates were not related to the participants' ability to read. Implications

from this study indicate that the delivery and presentation of a task to a small-group could influence the participation rates of students of all academic status ability.

Since competence must be known for groups to assign status, Dembo and McAuliffe (1987) sought to determine if students' absolute ability (grade level) or relative ability (perceived competence) was more influential in homogenous and heterogeneous groups of four. To ensure race, gender, and socio-economic status did not contribute to the status assignment, 80 fifth and sixth-grade white males with similar academic abilities were recruited to participate in the study. Additionally, sociometrics (method for measuring affinities and relationships) were conducted to ensure the students were not assigned to a group with their friends. Students were asked to complete a fake aptitude test to allow expectations to form based on these results alone. After students took the aptitude test, scores were publicly assigned based on perceived competence. This method allowed participants to associate their peers with a particular competence ability, despite their grade level. Homogenous and heterogeneous groups were formed based on the premise of which ability was publicly assigned to the participants. Influence of the participants was measured by assessing Spearman Rank-Difference coefficients (ρ) for each group. Additionally, the tasks were videotaped so interactions could be coded into four categories: give help, request help, positive reaction, or negative reaction. Results found that high-status students assigned above average scores on the bogus aptitude test,

dominated interactions, were more influential, and were more likely to be leaders than low-status students ($p < .05$).

Classroom research shows that actual academic ability does not predict status, but perceived competence of ability in fact influences the hierarchy. Despite a decline in the research surrounding academic ability among group work after the 1980s, these researchers have established the foundation for what we understand about perceived competence (Cohen & Lotan, 2014). Understanding the extent of perceived academic ability influence on status and power within classroom group work, two interventions (complex instruction and ability grouping) were proposed to create a more equitable setting (Cohen, 1994; 1998). These interventions, or strategies, stimulated additional research and strengthened our understanding of the phenomenon.

Modifying Status Inequalities in the Classroom

To find a solution to the inequitable group work participation heavily influenced by the perceptions of others, Cohen and her colleagues at Stanford University proposed the Complex Instruction (CI) model (Cohen, Lotan & Leechor, 1989). Cohen (1984) advocates for the shift of focus from studying interdependence and accountability in group work to a less holistic view of interactions and the type of task structure taught. For example, task structure should always be open-ended to encourage students to work together to finish the task, and not necessarily dominate or alienate the rest of the group members (Cohen, 1984). Using contingency theory to connect the teaching methods, the

type of supervision by the teacher, and work arrangements for the students, researchers developed a theoretical model to maintain effective communication and influence within group work, while improving learning outcomes for all participants. CI, based on previous literature, propose two interventions or status treatments to address these problems.

1. Multi-ability approach emphasizes different intelligences of group members, so they do not value one academic ability over another. For example, a group is assigned a task to develop a diet plan for an overweight individual. During the task delivery, the teacher emphasizes reading, math, or science ability is not necessary to finish the task. This allows group members to alter expectations of the contributions their peers could make toward the group and not attribute one intelligence to be more competent over another.
2. Another approach is to encourage teachers to publicly assign competence to low ability students to encourage participation and eliminate alienation. For example, a group is assigned the task of developing a budget for a bread company. While supervising the groups, the teacher publicly recognizes a low-status student on their comment about including costs for advertising, to promote that student has perceived competence and confidence in contributing to the task.

The premise behind this theory is status influence could be eliminated, and the focus is shifted to completing the task with all students participating and learning equally. To use CI as a status treatment, Cohen and Lotan (1995) collected data from 13 second to sixth-grade classrooms to examine the differences in interactions. Sociometrics determined the social status of each group member, as each student was asked to circle the names of their peers who were “the best at math and science” (p. 107). Of the 13 classrooms, 128 students were selected for further analysis based on their status (high = 67, low = 61). Group work was videotaped and analyzed for the amount of interactions related to the task, cooperation, or roles. In the control classes (no CI), high-status students talked about the task over four times more (per 3 minutes) than the low-status students and were more likely to assume the facilitator role ($p < .01$). In the classes that received status treatments (CI), there was no significant relationship between student status and their task-related interactions. This means there was no difference between low and high-status students regarding their interactions.

To understand the effects of CI, Bianchini (1999) investigated the multi-ability method with three classes of sixth-grade science and their peer-to-peer relationships and student performance. Bianchini (1999) focused on the perceived academic ability and popularity as the primary definition of status. Through quantitative and qualitative techniques, Bianchini (1999) used semi-structured student interviews and observation instruments to measure group work dynamics, systematic observation instrument (Rate of Talk Instrument) to

record students' participation through frequency count, and science tests to measure academic performance. Results found that low to middle-status students found difficulty in accessing materials and participation within their groups. In the qualitative case study of one of the groups, a low-status student felt silenced and did not share ideas for the majority of the time, but spoke up when criticized of her ability by her peers. Supporting the qualitative evidence was the rate of initiated acts tallied from the Rate of Talk Instrument. The low-status student in particular initiated acts (1.87 speech acts per minute) significantly less than her high-status counterparts (3.71 speech acts per minute). Moreover, the rate of on-task speech acts were significant predictors of posttest scores. Bianchini (1999) recommended an emphasis on the teacher and curriculum in creating more equitable group work settings. Specifically, teachers need to be aware and make a conscious effort toward implementing status interventions in their classroom to address the "status problem" (Cohen, 1984).

Ability Grouping (AG) is structured on the premise of clustering students with similar abilities. Cohen (1984) stipulated this method could eliminate the effects of academic ability as a status influence since students would be grouped with their ability cohort. For example, students of high academic ability would be grouped with their high counterparts, and students of low academic ability would be grouped with their homogenous peers. In fact, Hallinan and Sorenson (1987) claim that teachers particularly use this technique for reading and math group tasks with elementary students. Preliminary findings from research indicate that ability grouping shows greater gains of achievement for students in high ability

groups than students in low ability groups. In fact, assigning homogenous groups according to ability serves as a disadvantage to low-status students, especially within one class (Cohen & Lotan, 2014). Despite a deep understanding of the effects of AG, there is a lack of understanding of the influence of AG on interactions. In a study by Saleh, Lazonder, and Ton De Jong (2007), researchers examined students' achievement and social interaction based on grouping arrangements. Researchers assigned 104 fourth grade students from five classes to either homogenous or heterogeneous groups based on their performance on the Science Elementary Achievement Test. Out of the 13 homogenous groups, there were four students assigned to either four high, five average, or four low ability groups. The 13 heterogeneous groups included at least one high, one low, and two average ability students. To measure social interaction, all lessons were videotaped and coded according to initiated acts and classified to the type of interaction (statement, argument, question, etc.). Pre-test average of the homogenous and heterogeneous groups were similar ($f(1,98) = 1.45, p = 0.23$). Analysis indicated that interactions, group composition, and student ability contributed to post-test scores ($p < 0.01$). Scores for high ability students were similar across both heterogeneous and homogenous groups. However, low ability students achieved higher scores when they were working with the heterogeneous groups. Regarding social interactions, students participating in the heterogeneous groups used significantly more individual elaborations. Homogenous groups encouraged more collaborative elaborations or interactions. Interestingly, in the heterogeneous groups, low-status students

asked questions about the task 8 times more than their high-status peers, but only contributed to explanations 10% of the time. These findings indicate that AG based on academic ability as status may influence the interactions made by students, but does not support student achievement. Webb and Kenderski (1984) sought to compare the interactions and relationships between 107 middle school students participating in either group work or traditional whole-class instruction from a school utilizing ability grouping. The middle school taught mathematics through ability grouping methods, rather than grade level. This meant that students were strategically placed in classes based on their ability. The conversations between the students were recorded on an audio recorder and later coded as different types of interactions. Both conditions were taught a 3-week instructional unit on perimeter and area in geometry. Results indicated almost identical achievement scores between the two groups, showing that neither of the teaching methods was more effective than the other regarding student learning outcomes. Interestingly, regarding interactions and student achievement, those students who frequently received no response to their questions or errors or received only the correct answer without an explanation, obtained lower achievement-test scores than those who did not experience this interaction. Researchers indicated that these lower-ability individuals are hindered, regarding learning achievement, when they do not feel apt to interact with their peers of the similar ability. This still begs the question of how group work can be structured to increase interactions and student achievement while controlling for the inevitable factor of status.

Status inequalities in classroom settings have been well established regarding effective group work. While perceived academic ability and competence has dominated student contributions to tasks in the classroom, physical education settings do not necessarily value academic ability as much. Hence, perceptions of the hierarchy are skewed to reflect physical ability as a more competent characteristic. Group work in physical education, therefore, invites a research line that is more focused on creating equal participation opportunities for students despite their skill level.

Status and Interactions in Physical Education

Research on group work in physical education has focused on developing insights into theoretical frameworks associated with interactions in group work, rather than status (Barker, Quennerstedt, & Annerstedt, 2015b; Casey & Dyson, 2009). Lafont, Proeres, and Vallet (2007) found that verbal exchanges play an important part in the construction of learning in applying to tactical choices within the competitive context. From video data of 30 primary school students participating in a basketball unit, the researchers compared the effects of verbal exchanges in the mixed-skill teams compared to the homogenous teams. Despite no differences in the interpersonal relationships measured by sociometrics, results indicated a significant positive effect of team discussions on the skill ability achieved post-unit ($p < .01$).

Barker, Quennerstedt, and Annerstedt (2015a) took a Vygotskian constructivist theoretical approach to study peer interactions after Ward, Lee, and

Lee (2005) postulated that group work in physical education is in critical need of a strong theoretical foundation. Barker and his colleagues (2015a) assessed the impact of individuals relating to one another in learning situations, noting group work as a method to decrease the distance or “zone of proximal development” (ZPD) between students to interact and learn. With video data of two group situations in a secondary physical education class, the researchers analyzed the interactions through the lens of Vygotsky’s ZPD (Vygotsky, 1978). The major difference between the two situations was the occurrence, or lack of, mutually compatible interactions. Barker and his colleagues imply interactions within group work are unpredictable in nature and continues to require further investigation into the power relations. Status and power relations interrelate (Magee & Galinsky, 2009) and contribute to interactions in classroom literature, however research in physical education is not as prevalent. This concept is especially of concern since physical ability contributes to the attainment of status and is arguably more influential than academic ability within physical education settings (Dunn, Dunn, & Bayduza, 2007). Research by Dunn and colleagues (2007) shows perceived athletic competence is a significant predictor for status in physical education. These researchers used sociometric methods to measure status of the participants. Sociometrics requires individuals to rank their peers in order of importance using a peer-nomination scale (Moreno, 1941). Researchers collected sociometric and perceived athletic competence data from 208 elementary students. Results from MANOVA statistical analysis found that popular, or high-status, students received higher athletic ability ratings from their

peers ($p < .005$). In addition to perceived athletic ability in predicting status in physical education, gender plays a role in participation. Initial research focused on the effect of gender and participation within middle school physical education (Griffin, 1985). Griffin (1985) utilized qualitative techniques including class observations, formal interviews, and informal interviews to explore the experiences of male participants during team sport events. Findings indicated that boys who were considered “macho” or high skilled were much more present and involved within their teams than their “invisible” peers or “wimps”. These findings strongly support the notion that physical ability and competence is regarded as preferential in terms of status in physical education. Supporting these findings was the work from Lee, Fredenburg, Belcher, and Cleveland (1999) that found individuals associate different sports toward a specific gender. Lee and colleagues conducted semi-structured interviews with 50 middle school physical education students to explore the perceived competence and motivation associated with dance and basketball. Findings indicate that gender stereotypes are solidified according to the expectation of particular sports, in turn affecting the motivation or competence to do well in the task. With strong evidence showing that gender as a diffuse status characteristic, influences participation in physical education, Hastie (1998) conducted interviews with middle school girls to understand their perceptions of competence and motivation within the group-based pedagogical model, SEM. The SEM aims to replicate the season of a sport during a unit, in which teams are formed to provide opportunities for students to work together and create affinities (Siedentop, 1998). Siedentop

(1998) claims students create affinities and relationships while holding a role (like a captain) within a team, with social skills and interactions developing as the team works together. Additionally, the main pillar of SEM is to provide an equitable and inclusive model for all students (Siedentop, 1994). The SEM model allows the didactic contract between the teacher and students to shift the responsibility of promoting supportive behavior and actions to the students (Amade-Escot & Bennour, 2016). Contradictory to this assertion and supporting previous classroom literature, Hastie (1998) found that during the hockey unit, the girls stated that despite the boys dominating much of the conversation and team decisions, they preferred to play in heterogeneous teams because “if you are just with girls, you are expected to lose” (p. 167). This posits the understanding that girls believe they are not as physically competent and therefore require the presence of boys to complete the task well, or in this case, win a season of floor hockey. Moreover, the participants noted that they preferred the boys to be captains or referees (more influential roles) because they were more capable and dominating. Hastie’s (1998) findings support the literature on the superiority of males being more influential and dominating interactions over females (Kunesh, Hasbrook, Lewthwaite, 1992; Parker & Curtner-Smith, 2011). Following the work of Hastie (1998) on pedagogical models, Brock and colleagues (2009) conducted qualitative research on the experiences and interactions of students aged 10-11 participating in a SEM unit. In fact, these researchers shifted the focus from researching participation in physical education to critically examining the effect on interactions. Video recordings, interviews,

journals, and observations provided the data from the 26-lesson modified soccer unit. The researchers measured status by simply asking participants during interviews: “why do some students have high-status?” Participants indicated that high-status characteristics included socio-economic level, attractiveness, athletic ability, and personality, which supports the previous literature using status characteristics theory (Berger et al., 1977). Moreover, the impact of status expectations were evident throughout the unit in terms of the interactions and alienation of peers. Additionally, observations saw low-status students’ interaction decline and eventually disengage from team conversation and decision-making. Although the researchers stipulated popularity to be the predominant factor in determining social status, gender and skill level predicted playing time of the students in the unit. The implications of this study stimulated critical concern for physical education research on status characteristics and the evident influence on interactions, especially as it contributes to pedagogical models structured on the premise of effective group work.

Using another pedagogical model focusing on group work, cooperative learning (Dewey, 1924), Smith, Markley, and Goc Karp (1997) examined the interactions of 24 third grade physical education students. Smith and colleagues used interviews and the sociometric peer-rating scale to measure status (Moreno, 1941) with the Social Participation Scale to tally the amount of positive and negative interactions made by those students during a cooperative learning unit focusing on team-building. Consistent with the literature above, Smith found the number of proactive interactions (those contributing to the task effectively)

differed between the students. Specifically, high-status students initiated increased amounts of positive social interactions than their low-status peers. Despite the opportunity to interact more with the group setting, low-status students were again silenced and even disregarded. However, interview data suggested that low-status students felt intimidated by their high-status peers contrary to the high-status students perceiving low-status students as being uncooperative and disruptive. Despite an attempt to focus on team building in group work to promote interactions, expectation states contributed to initiated participation.

Barker and Quennerstedt (2016) examined the influence of power on interactions within the physical education context. Using Foucault's theory of existence of power within all actions and reactions (Foucault, 1982), Barker and Quennerstedt sought to explore the power relations within group work of upper secondary students in Sweden. Video recorded data provided 32 lessons of data to which researchers generated an understanding of the power affairs. The researchers indicated external factors, particularly the nature of the unit, plays a large role in determining influential members of groups. For example, if a student is perceived as good at soccer, they may be assumed as having more power during a soccer unit. Recommendations for ambiguity in the task where expertise is unprecedented could offer alternatives to influential people, similar to Cohen's (1984) suggestion of CI in which no ability should be perceived as superior to another.

Brock and Hastie (2016) is a crucial study within physical education to directly compare the frequency and focus of high and low-status students' interactions while participating in homogenous or heterogeneous skilled leagues of SEM. Researchers structured the leagues into a graded competition format, so students played with peers of similar ability. This meant that less pressure was emphasized on skill competence and expertness and more on creating an inclusive climate. A fourth-grade class was organized into teams based on different skill abilities (heterogeneous league), while another fourth-grade class was organized into teams based on same skill abilities (homogenous league). Once students were placed into teams, researchers conducted a peer-nomination scale to which participants ranked their teammates in order of importance. This method assigned the level of status to each participant. Results from analyzed video data of interactions found middle and high-status students had increased interactions at the beginning of the season, which requires most of the decision-making, than the low-status students. Interestingly in the homogenous low skill league, low-status students had a higher average number of interactions per lesson ($n = 41$) than their low-status counterparts in the heterogeneous league ($n = 15$). Lower skills students in the low skill league exhibited the highest rate of interaction amongst any of the groups. These findings indicate that status could, in fact, be strongly related to skill ability. Brock and Hastie (2016) suggest a critical need for status influences on interactions as they relate to team and game decisions.

To mediate the status influence within SEM units, Farias, Hastie, and Mesquita (2017) intervened with a group of seventh-grade students (10 girls, 16 boys) to create a more inclusive climate of participation. Student coaches wore an audio recording armband device to capture the verbal interactions between the three units. Additionally, researchers conducted focus groups with the student leaders and coaches to address inclusive and stereotypical concerns. Results from the basketball unit found that students were deemed high-status due to athletic ability, affiliation with community sports, and popularity. Moreover, these high-status students marginalized low-status students during game play: “high-status students do not pass the ball to certain less-status teammates or students who are not in their circle of friends during game play” (p. 7). The researchers stipulate a more developmentally appropriate practice that can legitimize the effect of skill ability could address the differences in influential participation. Additionally, researchers encourage the need for social skills being taught instead of expected.

Measuring Social Status

Sociometry has been used extensively in classroom education, sports, and briefly physical education research to analyze cohesion and relationships in group work. The topic of sociograms was coined by Moreno in the 1930s to establish connections between people (Moreno, 1941). To put it simply, “sociometric status” is defined as the degree to which individuals are appealed or repelled by their peers (Dunn, Dunn, & Bayduza, 2007; Weiss & Stuntz, 2004). Furthermore, children who are typically accepted by their peers are strongly liked

by the majority of their peers, while those who are somewhat disliked typically have lower levels of peer acceptance (Weiss & Duncan, 1992). Sociometrics develops an understanding of the dynamic relationships of the group members by producing a sociogram as the final product. According to Chelcea (2005), using sociometric methods provide appropriate information about group cohesion, structure, and social hierarchy of the group members. Coie and colleagues (1982), utilized sociometry to assign distinct behaviors to professed high and low-status profiles of students. Findings indicated that popular (or high-status) students are those who cooperate in groups, demonstrate care toward their peers, and follow the rules. Students who are considered low-status, or those who are rejected, demonstrate aggressive and disruptive behaviors. Since status is a dynamic component evaluated during each setting (Cohen, 1994), social rankings are developed as a agreement among the group (Cohen & Lotan, 2014).

Sabin, Mihai, and Marcel (2014) utilized sociometrics in a school sports team to recognize affinities, mutual election or rejection between the students. The sample included ten elementary school students between 7 and 11 from a school football team. From the sociometric data and subsequent interviews, the researchers identified group leaders, marginalized students, group cohesion, and the social status of each student within the football team. The researchers identified one student as the preferred team leader based on status (social index of 0.88) and an additional two members identified as high-status. There were three students classified as low-status (social indexes of -0.77, -0.66, and -0.44)

and the most unlikely to be a leader of the team or picked to be captain.

Researchers stated that the sociometric data provides vital information about opinions, attitudes, and motivations of the group and its members. Based on the literature above, sociometry serves a strong premise for classifying social status among individuals. With this method, we can gauge the true perceived status of the peers of the group based on the perceptions of the peers themselves.

Physical Activity and Group Work

Research has found that when children are ostracized from their friends, they are less active and indeed more sedentary than children who are surrounded by their friendship group (41% more minutes; $p < .04$) (Barkely, Salvy, & Roemmich, 2012). Concerning physical activity in school settings, however, much of the physical education group work research has predominantly focused on pedagogical models (Kirk, 2012). This is in response to the international guidelines by World Health Organization (WHO) recommending 60 minutes of physical activity a day for children (World Health Organization, 2014), and the Healthy People 2010 report recommending physical education lessons should consist of a minimum 50% moderate-to-vigorous physical activity (MVPA) (U.S. Department of Health and Human Services, 2010). Physical activity is defined as “any bodily movement produced by skeletal muscles that require energy expenditure” (Donnelly et al., 2016, p. 1198). Typically, physical activity has been measured in outcome measures like the intensity of activity and skill tests because they indicate improvements in cardiorespiratory fitness and fundamental motor skills (Corbin & Pangrazi, 2003). Focusing on measuring

physical activity in group work within school settings has proven limited regarding methods (Fairclough & Stratton, 2006). Specifically, there are no studies to date using pedometers, heart rate monitors, or self-reported measures of students working in group work. In fact, the majority of studies have utilized accelerometers and systematic observation as the method of choice. However, this is not of concern since Trost, Mciver, and Pate (2005) highlighted accelerometers to be the reliable method of choice when measuring physical activity. Hastie and Trost (2002) measured physical activity levels of team-based seventh-grade boys participating in a floor hockey SEM unit. Researchers used the Computer Science and Applications Inc. (CSA) 7164 accelerometer to monitor and detect normal human motion (Hastie & Trost, 2002). Using the accelerometers to measure the intensity of physical activity and skill tests to measure motor skill ability, researchers aimed to discover if high skill and low skill differed regarding physical activity. Initial results indicated all students reached an average of 31.6 minutes of MVPA (63.2%) per class. Furthermore, the high skill and low skill boys demonstrated no significant difference regarding physical activity levels (33.4 mins and 30.4 mins, respectively). More recently, Ward and colleagues (in press) used the Actigraph GT3X triaxial accelerometer to measure the intensity of physical activity of fifth-grade students participating in teams during a SEM fitness unit. Results from the physical activity data indicated students spent 54.5 % MVPA during the lessons (41.8 % moderate, 9.4% vigorous, 3.3% very vigorous). Additionally, students were sedentary during an average of 33.2% of the lesson. The work of Pritchard, Hansen, Scarboro, and

Melnic (2015) also measured physical activity using accelerometers (Actigraph GT3X triaxial accelerometer) in a SEM fitness unit. In addition to the increased scores on fitness pre- to post-tests, the high school students achieved 60.47% MVPA, supporting the notion of a team-based instructional model. Contradictory to the abovementioned literature however, Parker and Curtner-Smith (2005) found that students participating in teams within a SEM unit spent significantly less time in MVPA than students participating in a multi-ability (more traditional) unit. It should be noted that pre-service teachers implemented the SEM unit so that experience may have been an important variable in the results. These researchers used the System for Observing Fitness Instruction Time (SOFIT) to measure physical activity of the participants. SOFIT, (McKenzie, Sallis, & Nader, 1992) aims to measure physical activity levels by observing randomly selected individuals in 20-second intervals and their current state within the context. An individual's activity is coded as lying down, sitting, standing, or walking. SOFIT data then generates percentages to reflect the intensity of physical activity. Within Parker and Curtner-Smith's study of sixth and seventh-grade students, the multi-activity unit encouraged and an average of 52.85% per lesson in MVPA, while SEM (students working in teams) missed the gold standard of 50% (USDHHS, 2000) with an average of 36.60%. With a clear dearth of the research studying physical activity levels of children participating in group work, a focus on the effectiveness of this teaching method in physical activity outcomes needs to be addressed.

CHAPTER III

METHODS

Human Subjects Approval

Approval from Auburn University Institutional Review Board for Research Involving Human Subjects (IRB) was provided for the research study to commence. The full-board research protocol submission (17-281 MR 1708) was approved for use from 8/16/17 to 8/15/18 as per the regulations and protocol outlined by the IRB.

Participants and Setting

Fifth-grade students were recruited from a suburban elementary school in the southeastern region of the United States. Recruitment scripts and informed consents (Appendices A and B) were sent home with the students in their take-home packets to inform and gain consent from the parents or legal guardians. All fifth-grade students in the school were eligible to take part in the study. Students without parental consent were still eligible to participate in the physical education unit as part of their school requirements. A total of 46 participants (19 boys, 27 girls; average age = 10.7 years) met the criteria and provided consent and assent to participate in the study. The local elementary school was chosen based on the stable and positive relationship between the university and the physical

education teacher (Coach Carter). Additionally, Coach Carter is considered an expert teacher in the field. He has 15 years of teaching experience, which includes certification in highly qualified teacher training. Coach Carter has a strong reputation in the school due to his continuous integration with classroom teachers and an open invitation for parent/ community support. In addition to his teaching expertise, Coach Carter teaches 4 – 5 SEM units per year to his fourth and fifth-grade classes, upon which the study is functionally based. The students have participated in more than ten SEM units, so they were familiar with the organization of the model. Enrollment at the school is approximately 500 students consisting of a demographically representative sample (50% White, 25% Black, and 25% Asian students). Of the 500 students, 16% receive free or reduced-price school lunches and 89% claim English as their first language. All students participated in 30 minutes of physical education each school day.

Sport Education Season

The SEM is a student-centered model aimed at providing authentic sport experiences during physical education. Patterned after a professional sport season, SEM is organized using preseason for skill development and team practice, formal team competition for game practice and application of skills, and postseason for healthy competition and celebration of the unit. The goal of this model is to help students mature into competent, literate, and enthusiastic sportspersons (Siedentop, Hastie, and van der Mars, 2004). The premise behind SEM is to ensure students develop through six main pillars: participation in seasons, schedule of competition, culminating events, motivation and

assessment through records, sense of festivity and celebration, and a sense of affiliation through teams (Siedentop, 2002). As part of this unit, there is an intended transfer of power from the teacher to the student in teaching skills and roles, building the sense of responsibility and accountability. The model promotes many outcomes, but one of particular interest is the concept of team affiliation. MacPhail, Kirk, and Kinchin (2004) found team affiliation to be a particularly appreciated feature of the model to fifth grade students, as they enjoyed being part of a team and celebrating unified success. Additionally, students are encouraged to work effectively with their peers to develop skills and team success requiring the use of teamwork and collaboration (Siedentop, 2002). The model served as the unit for the study due to students being affiliated with one team for the entire unit.

The hockey SEM season was selected as the unit based on purposeful reasoning: field hockey is a considered a gender neutral sport thus controlling for gender as a confounding variable (Plaza, Boiche, Brunel, Ruchard, 2017); peer-reviewed knowledge and skill tests are available (Martinek & Turner, 1999) and physical activity data from accelerometers can provide MVPA from consistent altering of intensity. Table 1 provides a day-by-day outline of the SEM hockey season modified from the work of Hastie (1998). The 20-day SEM unit was planned considering the design and development of Siedentop's recommendations (1994). Hastie and Trost (2002) stated that a SEM unit should be at least 20 lessons. The four-week season was modified from the field hockey unit utilized in Hastie's work (1998) as well as the recommendations for model

fidelity measured through the SEM benchmark observational instrument (Ko, Wallhead, & Ward, 2006). The observational instrument checks for specific pedagogical behaviors (of the teacher and students) desired to meet the major components of the SEM: season, affiliation, responsibility, formal competition, record keeping, culminating event, and festivity (Siedentop, 1994, p. 4). Analysis of the videos concluded with 97% amenability with all seven components.

Two conferences (Eastern and Western) were utilized to nest six teams within each, totaling 12 teams of 4 students. Students decided, as a team, roles to be assigned to each team member, choosing between captain, referee, fitness coach, and equipment manager. The first six lessons included skill development, the draft, deciding on roles, and team practices. After skill development, the unit progressed to scrimmages providing opportunities for teams to play casual games against the other teams in order to develop tactics and solidify approaches. Formal competition involved round robin tournaments in which all teams within the conference played each other twice before moving to post-season consisting of play-offs and the championship game (Table 1). Games were 10 minutes in length, allowing teams to play at least 2 games per class. The eastern conference played their games during the first time period, while the western conference provided referees, scorers, ball collectors, and cheerleaders. After the first round of games were played, the western conference played their game during the second round, while the eastern conference provided referees, scorers, ball collectors, and cheerleaders. The playoffs were organized into three brackets: gold, silver, and bronze. The top four teams with the best record,

moved into the gold bracket. The next four teams moved into the silver bracket. Finally, the last four teams moved into the bronze bracket. To celebrate the season, the students and their parents were invited to the championship game and awards day to enjoy the festivity.

Table 1.

Sport Education Hockey Unit Block Plan

Lesson	Content	Teacher's role	Students' roles
1	Draft Describe class format	Class leader	Participant
2	Rules to game Beginning skills	Class leader	Participant
3	Allocation of teams and roles Small sided games Identify team's strengths and weakness	Present team lists Discuss roles Discuss fair play	Determine team roles Decide team name
4	Explain competition format and post schedule Dribbling	Program director	Coaches, players
5	Passing- push pass and hit pass Shooting	Program director	Coaches, players
6	Strategies- pressing the ball Defending- Man to Man and Zone Defense	Program director	Coaches, players
7	rules, scoring and boundaries Pre-season scrimmages	Program director	Coaches, players
8	Pre-season scrimmages Players learn and practice duty roles	Program director	Coaches, players
9	Pre-season scrimmages	Program director	Coaches, players
10	Pre-season scrimmages	Program director	Coaches, players
11	Pre-season scrimmages	Program director	Coaches, players
12	Formal competition	Program director	Coaches, players
13	Formal competition	Program director	Coaches, players
14	Formal competition	Program director	Coaches, players
15	Formal competition	Program director	Coaches, players
16	Formal competition	Program director	Coaches, players
17	Play-offs	Program director	Coaches, players
18	Play-offs	Program director	Coaches, players

19	Play-offs	Program director	Coaches, players
20	Championship game Awards and presentation	Program director Master of ceremonies	Coaches, players, duty team roles

Data Collection

Data collection methods included peer nomination surveys (social status, attractiveness, popularity, and perceived skill ability); accelerometers (physical activity); individual interviews (perceptions); school records (sex, weight, and height); Revised Interpersonal Adjective Scales (personality); Team Sport Assessment Procedure (actual skill ability); and knowledge tests (cognitive ability). The data collection methods are represented in a block plan format (Table 2).

Table 2.

Data Collection Block Plan

	Monday	Tuesday	Wednesday	Thursday	Friday
Preliminary data collection	Personality test				Knowledge pre-test
Week 1 of unit	Day 1 of unit, sociometry peer nomination survey, GoPro	Day 2, attractiveness survey, GoPro, interview	Day 3- popularity survey, GoPro, interview	Day 4- perceived skill survey, GoPro, interview	Day 5- GoPro, interview
Week 2 of unit	Day 6- GoPro, interview	Day 7- GoPro, interview	Day 8- accelerometer, GoPro, interview	Day 9- accelerometer, GoPro, interview	Day 10- accelerometer, GoPro, interview

Week 3 of unit	Day 11- accelerometer, GoPro	Day 12- accelerometer, GoPro, interview	Day 13- accelerometer, GoPro	Day 14- accelerometer, GoPro, interview	Day 15- accelerometer, GoPro
Week 4 of unit	Day 16- accelerometer, GoPro, interview	Day 17- accelerometer, GoPro	Day 18- accelerometer, GoPro, interview	Day 19- accelerometer, GoPro	Day 20 of unit- accelerometer, GoPro, interview
Final data collections	knowledge post-test, Hockey skill test				

Instruments

Peer-Nomination Surveys

A series of peer nomination rankings were administered to students to measure status, attractiveness, popularity, and perceived skill ability of their peers. Social status is defined in this study as the perceived importance in comparison to his or her peers within the group. Sociometric methods are the most common form of measuring status of individuals within groups (Chelcea, 2005). Moreno (1941) developed the technique of sociometrics to understand the relationships and status hierarchy within peer groups. Moreover, the degree to which an individual is liked or disliked by their peers can be determined through this technique (Wu, Hart, Draper, & Olsen, 2001). Degree of status was evaluated using a peer nomination technique in which participants were provided with their teammates' names and asked to nominate and rank their teammates in order of importance. It is imperative to note that the peer nominations for status were conducted as soon as groups were formed, and before team roles were designated. The only instruction to students, was that they would be participating in groups. Students were unaware of why they were being assigned to groups, to

alleviate the possibility of students automatically designating the team roles, specifically the role of captain.

To measure perceptions of attractiveness, students were presented with a list of their teammates names. Students were asked to rank their teammates' level of attractiveness by answering: "Please tell us how good looking your teammates are?" Students rated teammates on a 5-point Likert scale (1 = not very good, 3 = fairly good; 5 = very good).

Perceptions of popularity were collected through peer-nomination surveys. The students were asked, "Please tell us how popular your teammates are?" to which students rated teammates on a 5-point Likert scale (1 = not very popular, 3 = fairly popular; 5 = very popular).

Perceived skill ability was measured through peer nomination surveys of teammates, similar to the design used by Dunn, Dunn, and Bayduza (2009). Students were presented with a list of their teammates and asked to rank their athletic ability. Students were asked to respond to: "Please tell us how good your teammates are at playing hockey". Using a 5-point Likert scale (1 = not very good, 3 = fairly good; 5 = very good), students responded to the instructions for each of their teammates, including themselves in the ranking (Dunn, Dunn, & Bayduza, 2009).

The delivery timing of the peer nomination surveys were instrumental in the research design. Social status hierarchy is developed immediately following groups being formed (Cohen & Lotan, 2014). Therefore, to measure the social

hierarchy in this study, social status peer nominations were collected immediately following students being designated to teams (lesson 1). Furthermore, peer nomination rankings (attractiveness, popularity, and perceived skill ability) were collected during lessons 2, 3, and 4 respectively to ensure that their perceptions were collected based on visual perspectives, and not after they have seen each other play (potentially affecting social hierarchy).

Accelerometers

The Actigraph accelerometer GT3X (ActiGraph GT3X; ActiGraph Corp., Pensacola, FL) was used to measure physical activity. The accelerometer is a device worn on the right hip of each participant attached via an elastic belt. This device operates by capturing acceleration and movement along three axes (vertical, horizontal, and front to back) to be later converted as a measure for moderate-to-vigorous physical activity (MVPA). The participants wore the accelerometers for 13 days of the unit (pre-season scrimmages, formal competition, and play-offs) for the entire 30 minutes of each lesson.

Individual Interviews

Participants' perceptions of their status and interactions were collected through a total of 24 semi-structured individual interviews with stimulated recall techniques. Interviews were scheduled immediately after each lesson and lasted for 10 to 15 minutes. Each interview consisted of a research assistant and one student. To maintain rapport, two research assistants were assigned to one team so that the participants could feel a level of comfort with their designated research assistant. Interviews took place in two designated private rooms

attached to the gymnasium. As mentioned prior, all interviews were individual, with all participants from the two selected teams partaking in three interviews each. The individual interviews were selected over focus groups due to the sensitive nature of the material and to encourage participants to reflect openly about their peers without the fear of confidentiality concerns.

Stimulated recall methods using the GoPro video data were incorporated to encourage participants to reflect on pivotal team discussions, their position within the team, and their contributions or thoughts during those moments. After each day of the preseason (lessons 1-11), the primary researcher cut a total of 7 clips from GoPro data (four from the internal camera, three from the external camera) that involved team discussions or events (averaging four minutes in length). At the end of the next class lesson, the short clips were played to each participant during their individual interview, using an Apple iPad. The participants were asked to recall the events from their perspective, while the interviewer used conversational prompts to discuss their feelings. During the semi-structured interviews, the interviewers also asked students to describe their perceptions of their position in the team. The open-ended questions focused on personal opinions of others, factors contributing to importance, and influences on participation and engagement. All interviews were recorded using a digital voice recorder.

School Records

Sex, weight, and height for each student was collected via records provided by the school. Additionally, demographics were gathered to describe the population recruited for the study.

Revised Interpersonal Adjective Scales

To measure the effect of personality as a status characteristic, trait dominance was assessed from the Revised Interpersonal Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips, 1988). By using this method, Anderson and Kilduff (2009) found individuals with high trait dominance in three items (dominant, assertive, and forceful) were rated as more competent by peers, observers, and researchers. The three items alone have high correlations with the items on the Dominance Scale ($r = .91$) (Anderson & Berdahl, 2002) in measuring dominance-like personality. Two fifth grade classroom teachers were asked to rank their students for each of the three items ranging from 1 (does not describe the student at all) to 7 (describes the student very well).

Team Sport Assessment Procedure

Students' actual skill ability was collected by assessing their game play during pre-season and post-season. The lessons were video recorded using a GoPro Hero4 camera attached to a mount on the wall. Utilizing the video-recorded games, researchers coded students' actual field hockey skill ability using the validated Team Sport Assessment Procedure (TSAP) developed by Grehaigne, Godbout, and Bouthier (1997). The TSAP assesses individual results during a more authentic setting, as students participate in game-play. Researchers consider this instrument to be an adequate assessment procedure

for individuals learning to play sports (Lopez-Pastor, Kirk, Lorente-Catalan, MacPhail, & Macdonald, 2013). Pre-season games were recorded from Lessons 10 and 11 while post-season games were recorded from Lessons 18 and 19 of the unit. Additionally, scrimmage games during Lesson 9 were video recorded for reliability purposes.

Knowledge Test

Cognitive ability associated with field hockey was measured using a modified version of a knowledge test developed by Turner and Martinek (1999). Validated with 76 middle school students, researchers computed a Cronbach's alpha of .87 for all items with .74 for procedural and .87 for declarative questions (Turner & Martinek, 1999). The knowledge test consisted of 5 procedural and 5 declarative items related to field hockey. The cognitive test was administered 2 days before starting the unit (pre-test), 2 days following the unit (post-test), and 12 weeks after the unit (retention-test).

Data Analysis

Peer-Nomination Surveys

Sociometric analysis (Moreno, 1941) was conducted using the student peer nomination surveys from each team. A sample analysis of The Flying Pucks team is displayed in Figure 2. First, the nominations were entered into the table based on their individual nominations, with points assigned to their position. In the Flying Pucks, Claire nominated her teammates in the following order: Hunter (2 points), Candy (1 point), herself (-1 points), finishing with Andrew (-2 points).

Next, the Sociomatrix demonstrates the points received from each team member. Andrew, received -2 points by each of his teammates. Next, social status (total number of positive nominations) was converted to the social status index (social status divided by total members of the team) and preferred status (positive nominations minus negative nominations) was converted to preferred status index (preferred status divided by total members of the team). Preferred status index was then converted to high or low-status by assigning the closest index to 1 as the highest status, and the closest index to -1 as the lowest status. The remaining group members were then assigned status based on the number of members on the team and their preferred status index. Hunter's preferred status index was 1 and was assigned highest status, whereas Andrew's preferred status index was -1, and was therefore assigned lowest status. The social status hierarchy is then displayed on a sociogram, where the closest member to the middle of the target is considered the highest status. We were then able to determine the social hierarchy for the Flying Pucks as Hunter and Claire (high-status) followed by Andrew and Candy (low-status).

To analyze peer-nomination surveys of attractiveness, popularity, and perceived skill ability, mean scores of the ratings were computed for each student. Specifically, the composite scores (summation of ratings by each student who took the survey) were divided by the number of students who took the survey. For example, seven students rated Steven on his attractiveness and his composite score equaled 39. The peer-rated attractiveness level assigned to Steven was 5.58 (39/7).

Accelerometers

MVPA was computed as an average for all low-status students and all high-status students. Since students wore accelerometers for 13 lessons, the MVPA for 13 games were analyzed. Minutes spent in moderate and vigorous physical activity during all 13 games were used for analysis. The data were downloaded into the ActiLife software and classified into four categories: sedentary, light, moderate, and vigorous cut points. The minutes of each category are quantified on validated cut points suggested by Butte and colleagues (2014).

Individual Interviews

Qualitative data analysis techniques were used to explore students' perceptions of their status. All interviews were transcribed verbatim for analysis. The lead researcher coded the experiences of each student individually through horizontalization (Mustakas, 1994) by watching the clip used during the interview and concurrently following the interview transcript. Through the process of horizontalization, significant statements and sentences were acknowledged to provide an understanding of how the participants experienced social status within their teams. Once saturation was reached for that student, the researcher completed the process for the next student, and so forth. This process continued to develop clusters of meaning from the significant statements within the transcripts (Moustakis, 1994). Since the study was based on a phenomenological paradigm, it was essential for the researchers to immerse themselves in the data

to appreciate and accurately portray the experiences of each student. Open coding (Strauss, 1987) alongside textural and structural description (Creswell and Poth, 2017) were used by the lead researcher to label concepts and develop categories to develop the theory of the results. Following preliminary coding procedures, the researcher used comparative theme analysis to compare the different experiences of the participants. The analysis concluded with central themes to represent the conventional construction of meanings from the students (Saldaña, 2016).

School Records

School records (sex, weight, and height) were entered into an SPSS file.

Revised Interpersonal Adjective Scales

Personality scores were calculated as an average for each of the three items (dominant, assertive, and forceful). The scores were then entered into an SPSS file.

Team Sport Assessment Procedure

The video data were transferred to the GoPro Studio application on a computer for storage and subsequent analysis of actual skill ability. The TSAP assessed two main tactical skills during gameplay. Gaining possession of the ball was categorized as conquered ball or received ball. Disposing of the ball was categorized as lost ball, neutral ball, pass, and successful shot on goal. Richard, Godbout, and Griffin (2002) outlines operational definitions and computation of performance scores for invasion games (Figure 1). In establishing inter-observer

agreement, two research assistants coded two ten-minute games recorded by the GoPro Hero4. The assistants assessed three of the players on the team, comparing the results of the actions and skills utilized by the players selected. IOA was established with 97% reliability. Performance scores were reported as an average score over two matches and entered into a SPSS file for analysis. These scores were used to determine skill ability of each individual student based on their performance during the games.

Figure 1

Team Sport Assessment Procedure (TASP) (Richard, Godbout, & Griffin, 2002)

PB = Volume of Play (CB + RB)

CB = Conquered Balls – interception, steal, recovered off missed shot

RB = Received Balls – catch without immediately losing control

LB = Lost Balls (NB + LB)

NB = Neutral Balls – routine pass which does not put opponent in jeopardy

LB = Lost Balls - turnover

AB = Attack Balls (OB + SS)

OB = Offensive Ball – pass which puts pressure on opponent and often leads to score

SS = Successful Shot – shot which scores or when possession is retained after it

Instructions for observers: Use a tally to record each time a student in the game completes an action on the chart.

Volume of Play = CB + RB

Efficiency Index

$$(CB + OB + SS) / (10 + LB)$$

Performance Score = (Volume of Play/2) + (efficiency index X 10)

Names	CB	RB		NB	LB		OB	SS

Calculate the Volume of Play for each student: _____

Calculate the Efficiency Index for each student: _____

Calculate the Performance Score for each student: _____

Knowledge Test

Scores were reported as percentages for each student. The scores were entered into a SPSS file for analysis. Comparisons were made between pre- to post-scores to identify gains between high and low-status students from the unit.

Additionally, Araujo and colleagues (2014) outlined a need to measure retention of knowledge when measuring cognitive gains during a SEM unit. Therefore, a comparison was made between pre-test and post-test to retention test scores for high and low-status students to measure sustained knowledge.

Finally, we conducted two ANCOVAs to analyze changes in high-status and low-status students' knowledge. We analyzed pre- to post-test knowledge and skill to test changes within the unit. Additionally, we analyzed pre- to retention-test knowledge to test differences in maintenance of hockey cognition of high- and low-status students.

Cumulative Analysis

To address research question 1, we used a simple logistic regression to determine which status characteristic predicted high or low-status of students in physical education. We investigated the prediction of social status with status characteristics: sex, weight, height, personality, skill ability, perceived skill ability, attractiveness, popularity, and knowledge. Additionally, we ran a Pearson correlation to explore the relationship between all variables.

Research question 2 required a series of statistical analyses. A repeated measures 2 (status) by 3 (time points) analysis of variance (ANOVA) was performed to compare high-status students' average MVPA over three-time points with their low-status counterparts. To measure differences in skill ability between high- and low-status students, an analysis of covariance (ANCOVA) was run. Participants' pre-scores were compared to post-scores as a function of status. Finally, we ran two ANCOVAs to analyze changes in high-status and low-

status students' knowledge. We analyzed pre- to post-test knowledge and skill to test changes within the unit. Additionally, we analyzed pre- to retention-test knowledge to test differences in maintenance of hockey cognition of high and low-status students.

No further analysis was required for research question 3.

CHAPTER IV

MANUSCRIPTS

MANUSCRIPT ONE

Is Knowledge Really Power? Characteristics Contributing to Social Status during
Group Work in Physical Education

To be submitted to Physical Education and Sport Pedagogy

ABSTRACT

Background: Perceptions of social status can marginalize and exclude students participating in educational group work. In physical education, students have been found to alter their interactions based on the group composition. However, research has failed to identify characteristics that can potentially predict social hierarchy.

Purpose: The purpose of this study was to investigate status characteristics that predict social hierarchy during a sport education field hockey unit in physical education.

Method: Participants were 46 fifth grade students ($M_{\text{age}} = 11.8$) attending an elementary school in the Southeastern region of the United States. The participants (19 males and 27 females) took part in daily physical education for 2.5 hours per week. In addition to the students, two classroom teachers signed consent to participate in the study. Students participated in a four-week sport education field hockey unit. Data were collected for the following variables- social status hierarchy, attractiveness, popularity, perceived skill ability, sex, weight, height, personality, actual skill ability, and cognitive ability. Students were asked to complete peer nomination surveys for social status, attractiveness, popularity, and perceived skill ability. School records provided sex, weight, and height of the students. The classroom teachers were asked to rate all students in terms of their dominant personality, measured through a modified version of the Revised Interpersonal Adjective Scales. The Team Sport Assessment Procedure was utilized to measure actual skill ability, collected using GoPro recorded lessons. Lastly, cognitive ability was measured through a knowledge test of field hockey. Results were analyzed in a two-tier format. First, peer nomination scales were analyzed using the sociometric protocol to determine social status. Second, a simple logistic regression was used to determine which status characteristic predicted high or low-status of students.

Results and discussion: Results indicate perceived athletic competence and height predicted social status. Students perceived as being more skilled or athletic were more likely to be ranked high-status within their group. Students with greater perceived skill ability, are typically considered higher status within their group, based on their perceived competence in the group task, or in this case the sport education season. Additionally, the taller the student is, the more likely they are considered high-status. These findings open avenues for future research in terms of social status influence, especially if it limits the possibilities for low-status students to maximize the outcomes of group work in physical education.

Keywords: social hierarchy, sociometry, influence, sport education

While education provides, in theory, equal learning opportunities for all individuals, a social phenomenon appears to challenge this assertion. This phenomenon termed “status problem,” (Cohen, 1994) describes how social status influences equal participation and interactions in educational settings, particularly during group work. Though group work has been shown to be an effective teaching method in increasing engagement and learning potential through collaboration (Casey & Dyson, 2012), the “status problem” demonstrates how social standings within a group affect impotent students and their initiated contributions (Cohen & Lotan, 2014). Social status can be viewed as the perceived hierarchy of individuals in the groups to which they belong (Sidanius & Pratto, 2001). Theorists have extended this notion, proposing that it is better for individuals to be in the high state than the low state of social status, based on the advancement that favors individuals with a characteristic advantage (Cohen, 1994; Magee & Galinsky, 2008). With status, the acquisition of power is inevitable (Magee & Galinsky, 2008), leading high-status individuals to be perceived as having more power and importance than someone of low-status based on the resources and knowledge they may offer (Lin, 1999).

Due to status being dependent on the perception of others, the dynamic concept of status hierarchy is restructured and mutually agreed upon within seconds of group formation (Cohen & Lotan, 2014). Moreover, individuals’ perceptions of their own status have been shown to closely match the group’s

perception, leading status to be a generally universal concept (Anderson, Srivastava, Beer, Spataro, & Chatman, 2006). To understand social status in education, research has focused on status characteristics in predicting high or low-status. A status characteristic must consist of at least two or more possible states to which expectations form and social hierarchy follows suit. For example, sex consists of two states: male and female, in which males are typically assigned higher status based on their perceived competence for tasks utilizing higher order thinking skills (Ridgeway, 2001).

Predictors of social status in educational group work can be ambiguous, especially due to the dynamic nature of groups. Classroom researchers have outlined the prominent contributors to status being attractiveness (Webster & Driskell, 1983), academic ability (Cohen & Lotan, 2014), motivation (Ridgeway, 1978), sex (Webb, 1984), race (Cohen & Roper, 1972), and popularity (Rosenholtz & Wilson, 1980). Although academic ability is the strongest predictor of status in the classroom based on the perceived competence to complete the group task (Cohen & Lotan, 2014), physical education poses an alternative source of perceived competence that could shift the predictors of status. Since physical education is a setting that values physical ability more over academic ability, a question of perceived competence may be more related to that of perceived skill or athleticism. However, research surrounding this concept remains vague.

Initial qualitative studies shown status can be influenced by physical ability (Barker, Quennerstedt, & Annerstedt, 2015), popularity, socio-economic status,

and sex (Brock, Rovegno, & Oliver, 2009) in physical education. However, one quantitative study found perceived athletic competence contributed to status and loneliness in a sixth-grade physical education setting, even though these findings were indicative of the class as a whole and not necessarily focused on intact groups or individuals (Dunn, Dunn, & Bayduza, 2007). Therefore, there is limited knowledge of how the status hierarchy is developed and who attains high or low-status in group work within physical education.

Status characteristics and expectation states theory (Berger, Cohen, & Zeldich, 1972) served as the theoretical lens for exploration in this study. This theory is based on the understanding that certain characteristics of an individual can contribute to their position in the social hierarchy. In addition to the status characteristics, individuals will place expectations and perceptions on their peers, forcing social inequality and subsequent influence and power to high-status individuals, leaving low-status individuals to be ostracized within the group.

This line of research would expand the understanding of social status and the subsequent acquisition of power and dominance in the physical education setting. Therefore, the purpose of this exploratory study, was to examine the status characteristics predicting social hierarchy during a physical education unit framed around group work. Research questions included: (a) which status characteristic(s) predict social hierarchy during a physical education group work unit?, and (b) what is the relationship between all variables?

Method

This study was approved by the University Institutional Review Board and consent was obtained from the school board, school, teachers, and parents. Students who participated in the study also provided assent.

Study design

A quantitative research design was employed to analyze the effect of status characteristics in predicting social status within a sport education model (SEM) unit. Data were collected from all participants on each status characteristic during the unit. Perceived characteristics (status, attractiveness, popularity, and perceived skill ability) were purposefully collected at the start of the unit, to understand what framed the participants' social status hierarchy (determined immediately after groups were formed). Actual characteristics (sex, weight, height, personality, actual skill ability, and knowledge) were coded during the unit. The schedule of data collection for each status characteristic is outlined in Table 3.

Table 3

Timeline for Data Collection from Six Sources

Data Source and Type	Pre-Unit	Day 1 of unit	Day 2 of unit	Day 3 of unit	Day 4 of unit	Day 12 of unit
Peer Nomination Surveys						
Sociometrics		x				
Attractiveness			x			
Popularity				x		
Perceived Skill Ability					x	
School records						
Sex	x					
Weight	x					
Height	x					
Revised Interpersonal Adjective Scales						
Personality	x					
Video records of Lessons						
Skill Ability						x
Knowledge Test						
Knowledge	x					

Participants and Season Design

A convenience sample of fifth grade students were recruited from a suburban elementary school in the southeastern region of the United States. A total of 46 participants (19 boys, 27 girls; average age = 11.8 years) provided consent and assent to participate in the study. The sample of students were assigned to 1 of 12 four-person groups. Two classrooms merge for the allocated 30 minutes of daily physical education. The two classroom teachers were recruited to participate in one of the data collection methods for this study. The teachers have 8 and 11 years of teaching experience at this particular school.

The school's physical educator taught the SEM season to the physical education class. He is considered an expert teacher in the field based on his 15 years of teaching experience. Additionally, his pedagogical approach to physical education includes continuous integration with classroom teachers, open invitation for parent/ community approach, and implementing the SEM to his classes. With this experience and approach, the physical educator agreed to teach the four-week SEM unit to the participants.

In an effort to measure several different variables in predicting social status, we required a suitable group work unit that could foster a competitive and intense collaborative effort by students. SEM is an instructional model that requires collaborative group work during a four-week unit to bring team success. Utilizing six pillars (seasons, affiliation, formal competition, record keeping, festivity, and culminating event), SEM mimics the inner-workings of a sport season, designed so students are part of one team for the entirety of a four-week unit. The affiliation principle in particular, encourages self and team identification through establishing accountability and learning to work with other people (MacPhail, Kirk, & Kinchin, 2004; Siedentop, 1994). Additionally, the model provides opportunities for students to develop personal and social responsibility (Garcia-Lopez & Gutierrez, 2013). The four-week (20 lesson) hockey unit in this study was designed and taught using the principles of the SEM (Siedentop, 1994). The students were randomly assigned to 12 teams of three to four students. Lessons 1 through 11 were labeled as pre-season, in which students participated in their key conversations, strategizing, practice, and scrimmages.

The formal competition (Lessons 12- 16) involved a round robin pool play hockey season. Lessons 17 – 20 (post-season) finished with play-offs, a championship game, and an awards presentation during the post-season.

Data Collection

Peer Nomination Surveys

A series of peer nomination rankings were administered to students to measure status, attractiveness, popularity, and perceived skill ability of their peers. Social status is defined in this study as the perceived importance in comparison to his or her peers within the group. Sociometric methods are the most common form of measuring status of individuals within groups (Chelcea, 2005). Moreno (1941) developed the technique of sociometrics to understand the relationships and status hierarchy within peer groups. Moreover, the degree to which an individual is liked or disliked by their peers can be determined through this technique (Wu, Hart, Draper, & Olsen, 2001). Degree of likeability or dislikeability was evaluated using a peer nomination technique in which participants were provided with their teammates' names and asked to nominate and rank their teammates in order of importance. Peer nominations for status were conducted immediately as groups were formed, and before team roles were designated. The only instruction to students, was that they would be participating in groups. Students were unaware of why they were being assigned to groups, to alleviate the possibility of students automatically designating the team roles, specifically the role of captain.

To measure perceptions of attractiveness, students were presented with a list of their teammates names. Students were asked to rank their teammates' level of attractiveness by answering: "Please tell us how good looking your teammates are?" Students rated teammates on a 5-point Likert scale (1 = not very good, 3 = fairly good; 5 = very good).

Perceptions of popularity were collected through peer-nomination surveys. The students were asked, "Please tell us how popular your teammates are?" to which students rated teammates on a 5-point Likert scale (1 = not very popular, 3 = fairly popular; 5 = very popular).

Perceived skill ability was measured through peer nomination surveys of teammates, similar to the design used by Dunn, Dunn, and Bayduza (2009). Students were presented with a list of their teammates and asked to rank their athletic ability. Students were asked to respond to: "Please tell us how good your teammates are at playing hockey". Using a 5-point Likert scale (1 = not very good, 3 = fairly good; 5 = very good), students responded to the instructions for each of their teammates, including themselves in the ranking (Dunn, Dunn, & Bayduza, 2009).

The delivery timing of the peer nomination surveys were instrumental in the research design. Social status hierarchy is developed immediately following groups being formed (Cohen & Lotan, 2014). Therefore, to measure the social hierarchy in this study, social status peer nominations were collected immediately following students being designated to teams (lesson 1). Furthermore, peer

nomination rankings (perceived skill, attractiveness, and popularity) were collected during lessons 2, 3, and 4 respectively to ensure that their perceptions were collected based on visual perspectives, and not after they have seen each other play (potentially affecting social hierarchy).

School Records

Sex (male, female), weight (pounds), and height (feet, inches) for each student were collected via school records provided by the school.

Revised Interpersonal Adjective Scales

To measure the effect of personality as a status characteristic, trait dominance was assessed from the Revised Interpersonal Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips, 1988). By using this method, Anderson and Kilduff (2009) found individuals with high trait dominance in three items (dominant, assertive, and forceful) were rated as more competent by peers, observers, and researchers. The three items alone have high correlations with the items on the Dominance Scale ($r = .91$) (Anderson & Berdahl, 2002) in measuring dominance-like personality. Two fifth grade classroom teachers were asked to rank their students for each of the three items ranging from 1 (does not describe the student at all) to 7 (describes the student very well).

Team Sport Assessment Procedure

Students' skill ability was collected by assessing their game play on Day 10 and Day 11 of the unit. Day 9 was also recorded to establish reliability. The lessons were video recorded using a GoPro Hero4 camera attached to a mount on the wall. Utilizing the video-recorded games, researchers coded students'

actual field hockey skill ability using the validated Team Sport Assessment Procedure (TSAP) developed by Grehaigne, Godbout, and Bouthier (1997). The TSAP assesses individual results during a more authentic setting, as students participate in game-play. Researchers consider this instrument to be an adequate assessment procedure for individuals learning to play sports (Lopez-Pastor, Kirk, Lorente-Catalan, MacPhail, & Macdonald, 2013).

Knowledge Test

Knowledge ability associated with field hockey was measured using a modified version of a knowledge test developed by Turner and Martinek (1999). Validated with 76 middle school students, researchers computed a Cronbach's alpha of .87 for all items with .74 for procedural and .87 for declarative questions (Turner & Martinek, 1999). The knowledge test consisted of 5 procedural and 5 declarative items related to field hockey. This test was administered 2 days before starting the unit to measure the students' knowledge of field hockey. Scores were reported as percentages for each student.

Data Analysis

Sociometric data were analyzed to produce preliminary descriptive categorical results of status. After peer nomination surveys were collected, frequency of positive and negative nominations were calculated for each student to determine social rankings within the group. Results were then transferred to a sociogram, representing hierarchy within a target-like figure. Typically, the individual in the middle of the target demonstrates or exhibits the highest status within the group, with the individual furthest away from the middle classified as

the lowest status. Using these targets, all 4 participants of the team were classified as higher-status (first 2 participants on the sociogram) or lower-status (last 2 participants).

To analyze peer-nomination surveys of attractiveness, popularity, and perceived skill ability, mean scores of the ratings were computed for each student. Specifically, the composite scores (summation of ratings by each student who took the survey) were divided by the number of students who took the survey. For example, seven students rated “Steven” on his attractiveness and his composite score equaled 39. The peer-rated attractiveness level assigned to “Steven” was 5.58 (39/7).

Sex, weight, and height for each participant were entered into the SPSS file for analysis. Additionally, average ratings of personality for each student was entered into the file for analysis.

The video data were transferred to the GoPro Studio application on a computer for storage and subsequent analysis of actual skill ability. The TSAP assessed two main tactical skills during gameplay. Gaining possession of the ball was categorized as conquered ball or received ball. Disposing of the ball was categorized as lost ball, neutral ball, pass, and successful shot on goal. Richard, Godbout, and Griffin (2002) outlines operational definitions and computation of performance scores for invasion games. In establishing inter-observer agreement, two research assistants coded Day 9. The assistants assessed three of the players on the team, comparing the results of the actions and skills utilized

by the players selected. IOA was established with 97% reliability. Performance scores were reported as an average score over two scrimmage matches during Day 10 and 11, as these games were played during the pre-season phase. These scores were used to determine skill ability of each individual student based on their performance during the scrimmages.

Finally, scores from the knowledge test were reported as percentage correct and stored in the SPSS file for analysis.

To address the research question, we used a simple logistic regression to determine which status characteristic predicted high or low-status of students in physical education. We investigated the prediction of social status with all status characteristics: attractiveness, popularity, perceived skill ability, sex, weight, height, personality, actual skill ability, and knowledge. Additionally, we ran a Pearson correlation to explore the relationship between all variables.

Results

Descriptive statistics were calculated for each group (high and low-status) and reported as actual characteristics (Table 4) and perceived characteristics (Table 5) of students by status.

Table 4

Descriptive Statistics for Students' Actual Characteristics

Sex	Status	Skill Ability		Knowledge		Height		Weight		
		Q*	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Girls	High (n= 12)	1	2	(17)	0	(0)	0	(0)	2	(17)
		2	2	(17)	7	(58)	0	(0)	2	(17)
		3	6	(50)	2	(17)	10	(83)	7	(58)
		4	2	(17)	3	(25)	2	(20)	1	(8)
	Low (n= 15)	1	6	(40)	4	(27)	6	(40)	3	(20)
		2	1	(7)	5	(33)	6	(40)	6	(40)
		3	6	(40)	4	(36)	2	(13)	3	(20)
		4	2	(13)	2	(13)	1	(6)	3	(20)
Boys	High (n= 11)	1	2	(18)	0	(0)	1	(9)	2	(18)
		2	2	(18)	3	(27)	1	(9)	4	(36)
		3	3	(27)	3	(27)	6	(55)	3	(27)
		4	4	(36)	5	(45)	3	(27)	2	(18)
	Low (n= 8)	1	0	(0)	1	(13)	3	(38)	2	(25)
		2	2	(25)	1	(13)	2	(25)	3	(28)
		3	4	(50)	4	(50)	3	(38)	1	(13)
		4	2	(25)	2	(25)	0	(0)	2	(25)

*scores are reported by quartiles based on the mean and standard deviations of results

Table 5

Descriptive Statistics for Students' Perceived Characteristics

Sex	Status	Q*	Perceived Competence		Popularity		Attractiveness		Personality	
			<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Girls	High (<i>n</i> = 12)	1	0	(0)	0	(0)	0	(0)	3	(25)
		2	2	(17)	1	(8)	2	(16)	1	(8)
		3	6	(50)	8	(67)	8	(67)	2	(17)
		4	4	(33)	3	(25)	2	(17)	6	(50)
		5	0	(0)	0	(0)	0	(0)	0	(0)
	Low (<i>n</i> = 15)	1	3	(20)	2	(13)	1	(6)	5	(33)
		2	7	(47)	2	(13)	5	(33)	5	(33)
		3	4	(27)	9	(60)	6	(40)	3	(20)
		4	1	(6)	2	(13)	3	(20)	2	(13)
		5	0	(0)	0	(0)	0	(0)	0	(0)
Boys	High (<i>n</i> = 11)	1	0	(0)	0	(0)	0	(0)	1	(9)
		2	0	(0)	0	(0)	0	(0)	3	(27)
		3	1	(9)	5	(45)	8	(73)	3	(27)
		4	9	(81)	5	(45)	3	(27)	4	(36)
		5	1	(9)	1	(9)	0	(0)	0	(0)
	Low (<i>n</i> = 8)	1	0	(0)	1	(13)	1	(13)	3	(35)
		2	4	(50)	1	(13)	1	(13)	5	(63)
		3	3	(38)	4	(50)	5	(63)	0	(0)
		4	1	(13)	2	(25)	1	(13)	0	(0)
		5	0	(0)	0	(0)	0	(0)	0	(0)

*Scores are reported by quintiles as rankings were based on a 5-point Likert scale.

Sociometric analysis (Moreno, 1941) was conducted using the student peer nomination surveys from each team. A sample analysis of The Flying Pucks team is displayed in Figure 2. First, the nominations were entered into the table based on their individual nominations, with points assigned to their position. In

the Flying Pucks, Claire nominated her teammates in the following order: Hunter (2 points), Candy (1 point), herself (-1 points), finishing with Andrew (-2 points). Next, the Sociomatrix demonstrates the points received from each team member. Andrew, received -2 points by each of his teammates. Next, social status (total number of positive nominations) is converted to the social status index (social status divided by total members of the team) and preferred status (positive nominations minus negative nominations) is converted to preferred status index (preferred status divided by total members of the team). Preferred status index is then converted to high or low-status by assigning the closest index to 1 as the highest status, and the closest index to -1 as the lowest status. The remaining group members are then assigned status based on the number of members on the team and their preferred status index. Hunter's preferred status index is 1 and is assigned highest status, whereas Andrew's preferred status index is -1, and is therefore assigned lowest status. The social status hierarchy is then displayed on a sociogram, where the closest member to the middle of the target is considered the highest status. We were then able to determine the social hierarchy for the Flying Pucks as Hunter and Claire (high-status) followed by Andrew and Candy (low-status).

Figure 2

Sociometric Analysis of the Flying Pucks

Step 1. Enter positive and negative nominations into table

Name	Number	Points			
		2	1	-1	2
Claire	1	2	4	1	3
Hunter	2	2	1	4	3
Andrew	3	2	1	4	3
Candy	4	2	1	4	3

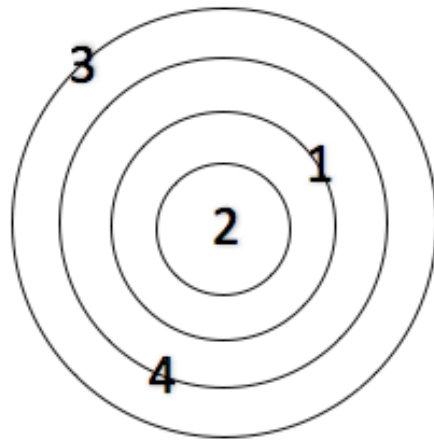
Step 2. Enter points based on table in Step 1 into Sociomatrix

Name	Number	Nominatee with points			
		1	2	3	4
Claire	1	-1	2	-2	1
Hunter	2	1	2	-2	-1
Andrew	3	1	2	-2	-1
Candy	4	1	2	-2	-1

Step 3. Calculate Social Status and Preferred Status scores

Name	Number	SS (/4)	SS Index	PS (/4)	PS Index	Status
Claire	1	3	0.75	2	0.5	H
Hunter	2	4	1	4	1	H
Andrew	3	0	0	-4	-1	L
Candy	4	0	0	-2	-0.5	L

Step 4. Design Sociogram based on Preferred Status scores.



The sociometric analysis was conducted for all 12 teams. Descriptive results indicated twelve of the 27 girls were considered high-status within their group (26%) while 11 boys out of 19 were high-status (24%).

After social status hierarchy was determined, analysis of the data was then performed. A logistic regression analysis was conducted to predict high or low-status for 46 participants using knowledge, perceived skill ability, popularity, attractiveness, actual skill ability, height, personality, weight, and sex as predictors (Table 6). A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between high and low-status students (chi square = 41.683, $p < .001$ with $df = 9$).

Nagelkerke's R^2 of .816 indicated a strong relationship between prediction and grouping. Prediction success overall was 93.2% (95.5% for low-status and 90.0% for high-status). The Wald criterion demonstrated that only perceived skill and height made a significant contribution to prediction ($p < .05$). Knowledge, sex, personality, actual skill ability, attractiveness, popularity, and weight were not significant predictors of social status. Exp(B) value indicates that when students are perceived as having a greater skill ability, they are 34 more times likely to be nominated as high-status. Additionally, when height is raised by one unit (one inch), they are 1.5 times more likely to be nominated as high-status.

Table 6

Logistic Regression Analysis of Status Prediction

Independent variable	B	S.E	Wald	P Value	Exp (B)	95% C.I. for EXP (B)	
						Lower	Upper
Sex	-1.020	2.174	.220	.639	.361	.005	25.567
Personality	-.370	.680	.296	.586	.691	.182	2.618
Skill Ability	-.090	.185	.238	.626	.914	.957	1.192
Perceived Skill	3.536	1.682	4.417	.036	34.323	1.269	928.222
Knowledge	.066	.056	1.371	.242	1.068	.523	208.458
Popularity	2.345	1.528	2.357	.125	10.438	.004	3.383
Attractiveness	-2.141	1.714	1.560	.212	.118	.636	1.312
Height	.414	.202	4.207	.040	1.513	1.019	2.248
Weight	.012	.037	.111	.739	1.012	.941	1.089
Constant	-	13.064	7.867	.005	.000		
	36.642						

Model $X^2 = 41.683$, $df = 1$

We also conducted a Pearson correlation to measure the relationship between all variables (Table 7). Based on the results of the study, five significant relationships were discovered. Perceived skill ability showed significant weak positive correlations with height ($r(48) = .38$, $p < .001$), attractiveness ($r(48) = .42$, $p < .001$), and popularity ($r(48) = .42$, $p < .001$). Additionally, height and weight yielded a significant moderate positive correlation ($r(48) = .435$, $p < .001$).

Table 7

Pearson Correlations among Status Characteristics

	1	2	3	4	5	6	7	8
1. Height	-							
2. Weight	.435**	-						
3. Perceived Skill	.383**	.023	-					
4. Popularity	.223	-.076	.428**	-				
5. Attractiveness	.129	-.047	.426**	.621**	-			
6. Actual Skill	.155	-.019	.205	-.016	.154	-		
7. Personality	.285	.026	.248	.257	.134	-.236	-	
8. Knowledge	.195	-.078	.282	.271	.239	.006	.131	-

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Discussion

Before we can truly unmask the potential effects of social status influence on physical education outcomes, we need to understand how status is acquired, who attains status, and why some students are perceived as more competent than other students. Classroom research has attempted to identify predictors of social status in group work and make inferences toward the influence in participation (Cohen & Lotan, 2014). While this research focuses on group work within the classroom, we attempted to explore the predictors of social status within the physical education setting, where perceived competence may not be related to intellectual intelligence. In this study, we explored the relationship between potential predictors of social status in a 20-lesson group work unit within physical education.

Results from this study indicated perceived skill ability and height predicted social status. Status characteristics and expectation states theory supports our results in that perceived athletic competence and height contributed to the students' positions in their groups' social hierarchy (Berger, Cohen, & Zeldich, 1972). Our results also supported the work of Dunn, Dunn, and Bayduza (2007) in that a student who is perceived to be more athletic, or skilled, is more likely to attain high-status over a student who is perceived to be less athletic and skilled in physical education. Perhaps this result is indicative of the perceived competence and capability in which the skilled student requires to complete the group task. Since members of a group aim for success and completion (Cohen & Lotan, 2014), their instinctive strategy is to rely on a person who they feel can bring their team the most success. In addition to perceived skill ability, we found students who were taller, were more likely to be high-status than shorter students. Students who are taller may be "looked up to" in a sense, in that they are presumably perceived more powerful and less vulnerable simply because they look the part. Relationships between significant variables (height and perceived skill ability) show that a small part of the variance can be explained by other characteristics (sex, attractiveness, popularity, and weight). Therefore, the results indicate there could be some shared explanatory power of variables for social status. The literature shows that taller people are more likely to hold high-status jobs, higher social esteem, and earn more money because height is often considered as conveying authority (Carrieri & De Paola, 2012).

Since perceived skill significantly predicted status in the SEM hockey unit, it would be interesting to measure the dynamic nature with other sport contexts to validate these findings. For example, if a student is assigned low-status in this unit because of she is perceived as having low perceived hockey skill ability, would her status type shift in a gymnastics unit, because she is perceived as more competent in that context? Additionally, what would predict social status in a “new games” (like Kinball) or student-designed game SEM unit, in which students are not aware of which skill could bring their team more success? The ambiguity and unpredictable nature of status is compelling, yet under-appreciated.

In the case of this four-week SEM hockey unit, perceived skill ability and height were the only significant predictors of social status, however we acknowledge potential limitations. Indeed, this study was designed upon a 20-lesson SEM unit, changing the length of unit and model used may alter results. In one lesson of group work, for example, the task is more immediate and time sensitive, therefore the characteristics predicting status could change. Additionally, the context of the lesson (individual vs team sports, fitness units) could produce different results based on the nature of competition. We do not know if and how variables may shift during group work in one lesson of physical education, where results from the task is more time-sensitive and immediate. This concept is a possible limitation of our study, since we looked at long-term group work social hierarchy. Personality is a factor that may stand out in a shorter period, for the simple fact that students who are dominant from the very

beginning of assigning groups could alter their perceived competence and attempt to influence the activity. For example, if a student joins a group and states “I’ve done this before, I can do this” then this could lead his peers to designate perceived competence and high-status to that student (Barker, Quennerstedt, & Annerstedt, 2015). In addition to understanding if status could shift over time, task delivery from the teacher could influence investment and performance of the group, offering a different perspective into how group work occurs. For example, if the students within a team believe their team can achieve success through their joint effort, their personal identities are strengthened and may change the dynamics altogether. Individuals will ultimately alter their behavior and interactions based on their setting and the people with whom they work.

Another limitation to the study, is the measure of social status as a single item indicator. Even though the social status nomination protocol (Chelcea, 2005; Moreno, 1941) has been lightly used within physical education settings (Dunn, Dunn, & Bayduza, 2008), more research is needed to unravel the act of hierarchical development. By simply asking students to rank their teammates in order of who is more important, we are not able to determine the reasoning behind their nominations. Additionally, using the single item indicator of status could potentially raise questions on validity and reliability, and asking students to rank their teammates could potentially make them feel uncomfortable. By using indirect dissociative-type questions (e.g. who do you wish was your friend, who do you not wish was your friend?) with some qualitative techniques, we might we

be able to dissect and appreciate why a student nominates a person to be highest or lowest status, thus providing the personal prediction of status in that specific setting. We also acknowledge that we had a medium sample size with unequal ratio of boys to girls (19 to 27 respectively) which could potentially affect generalization. We recommend researchers replicate this study with a larger sample size, with equal personal characteristic data (e.g. gender, height, skill, etc.) With these limitations in mind, more research is needed to understand how social status is attained in physical education, as well as to validate the current findings and investigate this concept in depth. Additionally, researchers should investigate height in relation to social status and group work using qualitative research methods, especially when this variable is likely underestimated and currently non-existent in the physical education literature.

Conclusion

A critical facet of social status is that students create ideologies about their peers as soon as they are assigned to their groups (Cohen, 1994). The process of unpacking can be tedious and extensive being that the social hierarchy is unspoken and immediate upon group assignment. From a research perspective, studying this facet and providing its due diligence can be difficult based on its ambiguity and undervalued nature. Sociometrics provide us a tool to measure social hierarchy, however understanding the reasoning and rationale behind each decision is limiting and hard to come by. Social status is potentially an unidentified focal point regarding inclusion and social justice within physical education. Evidence shows that perceived skill ability and height will influence

social hierarchy in a SEM unit. Additionally, this concept can encourage the impression that only some students can do physical education, therefore potentially creating an unsafe and unequitable environment. This issue could potentially affect how students experience and perceive physical education and physical activity. Perhaps physical education research needs to reconsider promoting a more equitable and inclusive environment for students to participate and learn during group work.

Disclosure statement

No potential conflict of interest was reported by the authors

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MANUSCRIPT TWO

“Involve Me, and I Learn”; Effects of Social Status on Students’ Learning
Outcomes in Sport Education

To be submitted to Journal of Teaching in Physical Education

Abstract

Purpose: This study explored the influence of social status on students' physical activity levels, skill development, and knowledge outcomes in a sport education hockey unit. **Method:** Fifth-grade students participated in a field hockey sport education unit as part of their physical education class. Students ($n=44$) wore accelerometers to measure their moderate to vigorous physical activity (MVPA), and pre- and post-unit skill ability and knowledge was collected via the Team Sport Assessment Procedure (TSAP) and cognitive tests respectively.

Sociometric peer nomination surveys assessed the social status hierarchy of all students. **Results:** Repeated measures ANOVA showed no significant difference between high and low-status students' average MVPA over all phases of the unit (pre-season, season, and post-season). ANCOVAs revealed significant increases in skill ability and knowledge based on social status. **Discussion/**

Conclusion: Results suggest physical activity levels are similar between high- and low-status students participating in sport education, however students may be discriminated by social status in learning knowledge and developing skill during a sport education unit.

Keywords: knowledge, skill ability, physical activity, sociometry, group work

Social Status

Educational research in the classroom suggests social status affects the influence of students working in groups, potentially affecting their interactions, learning outcomes, and social development (Cohen, 1994). Learning outcomes and social development can depend greatly on the interactions that occur within the group (Cohen & Lotan, 2014) since individuals use language to develop their ideas and organize knowledge (Vygotsky, 1962). If we use Cohen's (1994) theory implying higher interactions lead to increased learning, specifically "those who talk more, learn more" (Cohen & Lotan, 1995, p 100), then we may need to revisit the concept of effective group work as it relates to outcomes. Furthermore, utilizing group work as an instructional strategy could be problematic, as students may not profit equally. Therefore, reviewing the effect of social status on group work outcomes could be pivotal regarding participation, influence, and student achievement (Leechor, 1988). If we take into consideration Cohen's idea that those who initiate more interactions are more likely to learn the material, then we need to understand how status could influence these outcomes and why this phenomenon occurs. Interactions from individuals participating in group work are imbalanced. For example, Bales and colleagues (1951) found high-status or more powerful members spoke 15 times more frequently than their low-status members during a group work task. Supporting this finding, the research found that 30% of members in an 11-person group contributed to more than 75% of the group's discussions (Buzaglo & Wheelan, 1999). The high-status individuals who are contributing the majority of interactions, tend to dominate the group

discussions to benefit themselves, to exclude those of low-status (Johnson & Johnson, 1990). This example presents a “rich get richer” effect in which those with power and wealth benefit from the group task. Consequently, the decisions made for the group’s performance or processes are dominated or based on interactions by high-status members (Anderson & Kennedy, 2012). Anderson and Kilduff (2009) sum up this phenomenon well by stating:

“First, an individual member’s influence in a group is determined by the group. Second, groups give influence to members who possess superior competence and expertise. Third, by putting their most qualified members in charge, groups stand the best chance of achieving their collective goals” (p. 491).

It is vital that we start to unpack the concept of social status and group work to create a more inclusive learning environment for all students. Status plays an influential and dominant role in interactions within group work, but its dearth continues in physical education research (Barker, Wallhead, Quennerstedt, 2014). Research has outlined major gaps with utilizing pedagogical models, namely the sport education model (SEM), that focuses on group work as the scaffold for student learning (Araujo, Mesquita, & Hastie, 2014). Learning outcomes like skill development, cognitive ability, or physical activity are consistently used in physical education research; however, with pedagogical models trusting students to learn content from their peers, concerns are raised regarding influences on the concept of the teaching-learning process

(Araujo, Mesquita, & Hastie, 2014). Consequently, research in classrooms and physical education is focused on creating optimal learning experiences by promoting equal participation of students despite the social hierarchy.

Learning Outcomes from Sport Education

SEM is a physical education instructional approach that shifts the responsibility of teaching content and developing skills from the teacher to the student. Siedentop (1998, p. 18) developed the model “to provide authentic, educationally rich sports experiences for girls and boys in the context of school physical education.” By allowing students to work in teams for the entirety of a three to four-week unit, they are exposed to developing competence, physical literacy, and social responsibility while experiencing sport culture. Using six characteristics (seasons, culminating event, affiliation, record keeping, formal competition, and festivity), students participate as members of a team to work collaboratively while enjoying successes and failures together (Siedentop, 1994).

SEM, compared to direct instructional teaching, has been thoroughly researched regarding benefits and outcomes. Hastie and Sharpe (1999) found that SEM improved social behavior of seventh and eighth grade boys through increased positive interactions and decreased negative interactions. SEM has also been shown to impact knowledge and skill outcomes. In a study of a SEM compared to direct teaching of rugby, researchers found significant improvements for skill and knowledge. However, SEM significantly improved perceived learning and understanding of the game (Browne, Carlson, & Hastie, 2004). Additional studies have revealed supporting findings of greater skill and

knowledge improvement for students during SEM than direct teaching (Browne et al., 2004; Mohr, Townsend, Bulger, Rairigh, & Mohr, 2006). In addition to skill and knowledge outcomes, game performance (quality gameplay) was significantly impacted by the instructional approach, indicating that SEM provides more effective opportunities for students to practice their skills in an authentic setting (Pritchard, Hawkins, Winegand, & Metzler, 2008).

Since SEM has been proposed as an effective instructional strategy, recent research has focused on the learning outcomes for individual students based on specific characteristics. In a review by Aruajo and his colleagues (2014), most of the SEM research was focused on three main dimensions of student learning: skill development, tactical development, and gameplay. Of the studies measuring learning outcomes in SEM, very few studied the impact of individual characteristics. Hastie, Ward, and Brock (2017) investigated the impact of skill ability on participation and success rates from a SEM graded competition. Results found that in a mixed-ability league, lower skills students were hindered regarding success rates, engagement, and playing efficiency. These findings propose the idea that students may receive different gameplay experiences within SEM based on their skill ability, potentially affecting their achievements. In addition to skill, gender has been shown to affect the skill, student achievement, and gameplay improvements using SEM (Mesquita, Farias, & Hastie, 2012). Some studies have found that boys and higher skill students have increased learning opportunities (Alexander & Luckman, 2001; Brock, Rovegno, & Oliver, 2009), while other studies have shown girls and lower skilled students to improve

their learning achievements using a more hybrid approach combining SEM and other instructional models (Carlson & Hastie, 1997; Mesquita, Farias, & Hastie, 2012). While gender and skill ability are two main characteristics influencing learning outcomes through the SEM, there appear to be no studies exploring the concept of social status as an impactful variable on student achievement.

In SEM, the most common assessment of physical activity is the amount of time students spend in moderate to vigorous physical activity (MVPA) (Kirk, 2012). The World Health Organization (WHO) recommends 60 minutes of physical activity a day for children (World Health Organization, 2014), and the Healthy People 2010 report recommends physical education lessons should consist of a minimum 50% moderate-to-vigorous physical activity (MVPA) as the gold standard (U.S. Department of Health and Human Services, 2010).

Therefore, researchers have concentrated on reaching the gold standard of physical activity by comparing SEM to the more traditional teacher-directed instruction (Hastie & Trost, 2002; Pritchard, Hansen, Scarboro, & Melnic, 2015; Ward et al., 2017). The work of Pritchard, Hansen, Scarboro, and Melnic (2015) found students increased their scores on fitness pre- to post-tests while achieving 60.47% average MVPA, supporting the notion of the team-based instructional model in reaching high skill improvement and physical activity levels. Supporting these findings, Ward and colleagues (2017) measured physical activity of fifth-grade students participating in teams during a SEM fitness unit. Results indicated students spent 54.5% MVPA on average during all three phases of the unit (pre-season, season, and post-season). While SEM can

effectively promote physical activity levels of students by reaching the gold standard of MVPA, we are still unclear of which characteristics can potentially affect MVPA within the student-centered model. Hastie and Trost (2002) touched on this idea when they compared physical activity levels of high and low skill seventh grade boys participating in a floor hockey SEM unit. Researchers found all students reached an average of 31.6 minutes of MVPA (63.2%) per class. Furthermore, the high skill and low skill boys showed no significant difference regarding physical activity levels (33.4 mins and 30.4 mins, respectively) indicating skill level does not affect students' MVPA.

Gender and skill level are the only characteristics analyzed for their impact on skill, knowledge, and physical activity outcomes within SEM. Indeed, we could compare a range of characteristics as they pertain to learning outcomes, however the social status hierarchy is one that has been shown to affect participation and outcomes in classroom group work (Cohen & Lotan, 2014), so it is only fitting to use a more sociological perspective within this realm.

Statement of the Purpose

The purpose of this study was to examine if physical activity, skill, and knowledge outcomes differ between high and low-status students during a physical education group work unit. It was hypothesized that high-status students would spend more time in MVPA than low-status students during the unit. Additionally, high-status students would improve their skill development and knowledge of hockey more than the low-status students.

Theoretical Framework

The theoretical lens we used to support our prediction of the results is socio-constructivism developed by Vygotsky (1978). Vygotsky theorizes that individuals create the meaning of material by interacting with their peers. Based on the literature and socio-constructivism theory, we hypothesize that learning outcomes of students will be altered based on their status within the team, and subsequently the type of experience they receive from group work.

Method

This study was conducted in an elementary school located in the southeastern region of the United States. The school population of 482 students was 67% White, 26% Black, 4% Hispanic, and 3% Asian. The participants who assented to the study included 44 students (19 males and 25 females) from 2 fifth grade classes that attended physical education daily as one large class. Physical education was taught by one teacher who has over 10 years of teaching experience and teaches 3-4 SEM units a year. The students were well versed with SEM in their physical education class. The unit was designed by the physical education teacher and the first author, with weekly meetings scheduled to ensure model fidelity was being met (Hastie & Casey, 2014).

Sport Education Season Design

Students participated in a 20-lesson (4 weeks) SEM season of field hockey with each lesson lasting 30 minutes in duration. The unit followed a typical season outlined by Siedentop (1994), which included the six pillars: seasons, affiliation, festivity, formal competition, record-keeping, and culminating event. The early stages of the season (Lessons 1-3) were allocated to establish

duty roles, and rules and routines. Teacher-directed instruction during lessons 4-6 involved skill development and drills about field hockey skills like dribbling, shooting, defending, and content knowledge. The pre-season phase, Lessons 7-11, included scheduled 10-minute scrimmages and team focused strategizing. The formal competition phase (Lessons 12-16) was comprised of two conferences. The Western Conference played their round robin games during the first 15 minutes of class, with the Eastern Conference playing their round robin games during the final 15 minutes of class. When teams were not playing, they were refereeing, scoring, and cheering for the other conference. The final three lessons (17-20) were dedicated to playoffs, finishing with the championship game, and the awards presentation. The double elimination playoff schedule ensured each team played a minimum of 2 games during post-season. Teams making the playoffs were based on wins from their round robin play, and team points accumulated over the course of the unit.

Measures

Social Status

Social status was measured using Sociometric methods developed by Moreno (1941). Sociometry uses quantitative techniques to determine social relationships and positions within a group (Moreno, 1941). The protocol for collecting this information in an education setting was designed by Chelcea (2005) which involves students nominating their peers to determine the ranking of group members and their perceived importance. In this particular study, the only instruction to students was that they would be working as a team, without

mention of the sport. After teams were assigned, the nomination protocol was administered to all students. Students were asked to find a personal space in the gym where they could answer a survey privately. They were then handed a survey and pencil, and were asked to answer the question: “please rank your teammates in order of importance”. The survey provided four blank lines for the participant to enter their teammates names in order of importance (1= most important, 4= least important). The students were provided ten minutes to complete the exercise. This procedure ensured that students avoided ranking their teammates based on their role in the team or physical capabilities in the sport. The sociometrics data collection provided categorization of students as either high-or low-status within their team.

Physical Activity

Physical activity was measured through the use of an Actigraph accelerometer GT3X (ActiGraph GT3X; ActiGraph Corp., Pensacola, FL). The accelerometer is a device worn on the right hip of each participant attached via an elastic belt. This device operates by capturing acceleration and movement along three axes (vertical, horizontal, and front to back) to be later converted as a measure for moderate-to-vigorous physical activity (MVPA). The participants wore the accelerometers for 13 days of the unit (pre-season scrimmages, formal competition, and finals) for the entire 30 minutes of each lesson.

Skill Ability

Four lessons (Lesson 10-11 and 18-19) were recorded using a GoPro Hero4 device mounted to the wall in the gym to capture the students playing.

Additionally, scrimmages in Lesson 9 were recorded to establish reliability. The video data were transferred to GoPro Studio for analysis and storage. Using the four recorded lessons, researchers coded each student for their skill ability using the Team Sport Assessment Procedure (TSAP) (Grehaigne, Godbout, & Bouthier, 1997). The TSAP provided game-play performance as well as tactical behavior within the game setting, providing a more authentic measure of skill ability. The TSAP provides an efficiency index (successful offensive actions minus unsuccessful actions), the volume of play (passes received more than balls conquered), and a performance score (the overall result of the volume of play and efficiency index) for each student. For this study, however, we used performance score to represent the skill ability of the students.

In establishing inter-observer agreement (IOA), two research assistants coded two ten-minute games from Lesson 9 recorded by the GoPro Hero4. The assistants assessed three of the players on the team, comparing the results of the actions and skills utilized by the players selected. IOA was established with 97% reliability.

Knowledge Ability

Knowledge ability associated with field hockey was measured using a modified version of a knowledge test developed by Turner and Martinek (1999). Validated with 76 middle school students, researchers computed a Cronbach's alpha of .87 for all items with .74 for procedural and .87 for declarative questions (Turner & Martinek, 1999). The knowledge test consisted of 5 procedural and 5 declarative items related to field hockey. Scores from the cognitive test were

administered at three-time points: pre-test (before the unit), post-test (succeeding the unit), followed by a retention test (12 weeks succeeding the unit).

Data Analysis

IBM Statistical Package for the Social Sciences (SPSS) System (version 23.0) for Windows® was used for all statistical analysis. Data were entered into Microsoft Excel and uploaded into SPSS. Individual results for MVPA, skill ability and knowledge were entered along with their status label (High or Low).

Descriptive analysis (means and standard deviations) were examined to compare means by sex.

Physical Activity

Data were extracted during the times that each student participated in a game. MVPA was computed as an average for all low-status students and all high-status students for pre-season (Lessons 7-11), season (Lessons 12-16), and post-season (Lessons 17-19). Minutes spent in moderate and vigorous physical activity during all games were used for analysis. The data were downloaded into the ActiLife software and classified into four categories: sedentary, light, moderate, and vigorous cut points. The minutes of each category are quantified on validated cut points suggested by Butte and colleagues (2014). MVPA results were entered into a SPSS file for analysis.

A repeated measures 2 (status) by 3 (time points) analysis of variance (ANOVA) was performed to compare high-status students' average MVPA over three-time points with their low-status counterparts.

Skill Ability

We averaged the performance scores of two scrimmage games (Lessons 10-11) as the pre-performance score, and the final two games during playoffs (Lessons 18-19) as their post-performance scores. We appreciated that students' skill play could potentially be affected by their opponent, so we used the average scores over two games for both variables. Performance scores were entered into a SPSS file for storage and analysis.

To measure differences in skill ability between high- and low-status students, an analysis of covariance (ANCOVA) was completed. Participants' pre-scores were compared to post-scores as a function of status.

Knowledge Ability

Scores were reported as percentages for each student. The scores were entered into a SPSS file for analysis. Comparisons were made between pre- to post-scores to identify gains between high and low-status students from the unit. Additionally, Araujo and colleagues (2014) outlined a need to measure retention of knowledge when measuring cognitive gains during a SEM unit. Therefore, a comparison was made between pre-test and post-test to retention test scores for high and low-status students to measure sustained knowledge.

Finally, we conducted two ANCOVAs to analyze changes in high-status and low-status students' knowledge. We analyzed pre- to post-test knowledge and skill to test changes within the unit. Additionally, we analyzed pre- to retention-test knowledge to test differences in maintenance of hockey cognition of high- and low-status students.

Results

Social Status

Social status was analyzed using sociometrics (Moreno, 1941) for each team. Since there were four people in each team, the students with the two highest indices were considered high-status, while the two lowest indices were assigned low-status. Table 8 provides the indices and subsequent assignment of high- and low-status for each student within their team (Pseudonyms have been used to protect the participants' confidentiality). Social Status (SS) is represented by the total number of positive nominations, which is then divided by the number of members of the group to calculate Social Status Index (SS Index). Furthermore, Preferred Status (PS) represents the standardized score by taking the SS number minus negative nominations. Preferred Status Index (PS Index) is calculated by dividing the PS by the number of members again. PS Index is represented as a scale from -1 to 1 in which the highest status member has a score closest to 1. The order of the hierarchy is then determined based on the PS Index score each member receives. For example, the status hierarchy of Team 1 is David (highest status), Mindy, Sue, followed by Wynn as the lowest status.

Table 8

Social Status and Preferred Status with High-/ Low-Status Assignment for each Student

Team	Name	SS (/4)	SS Index	PS (/4)	PS Index	Status
1	Mindy	3	0.75	2	0.5	H
	David	4	1	4	1	H
	Sue	1	0.25	-2	-0.5	L

	Wynn	0	0	-4	-1	L
2	Paul	2	0.5	0	0	H
	Amy	1	0.25	-2	-0.5	L
	Pam	1	0.25	-2	-0.5	L
	Harry	4	1	4	1	H
3	Claire	3	0.75	2	0.5	H
	Hunter	4	1	4	1	H
	Andrew	0	0	-4	-1	L
	Candy	0	0	-2	-0.5	L
4	Lonnie	3	0.75	2	0.5	H
	Emma	0	0	-4	-1	L
	Nate	3	0.75	-2	-0.5	L
	Bri	2	0.5	0	0	H
5	Gary	0	0	-4	-1	L
	Mike	4	1	4	1	H
	Belinda	0	0	-4	-1	L
	Jessica	4	1	4	1	H
6	Ron	4	1	4	1	H
	Deb	0	0	-4	-1	L
	Wendy	0	0	-4	-1	L
	Jake	4	1	4	1	H
7	King	4	1	4	1	H
	Sheri	4	1	4	1	H
	Brenna	0	0	-4	-1	L
	Jess	0	0	-4	-1	L
8	Torrey	0	0	-4	-1	L
	Andy	3	0.75	-2	-0.5	L
	Ben	2	0.5	0	0	H
	Lori	3	0.75	2	0.5	H
9	Allie	0	0	-4	-1	L
	Sarah	1	0.25	-2	-0.5	L
	Hayden	3	0.75	2	0.5	H
	Jodie	4	1	4	1	H
10	Ben	0	0	-4	-1	L
	Sandy	4	1	4	1	H
	Kurt	3	0.75	2	0.5	H
	Chelsea	1	0.25	-2	-0.5	L
11	Katie	0	0	-4	-1	L
	Emily	4	1	4	1	H
	Bruce	4	1	4	1	H
	Kylie	0	0	-4	-1	L
12	Pam	2	0.5	0	0	L
	Jack	3	0.75	2	0.5	H
	Caroline	3	0.75	2	0.5	H
	Zach	0	0	-4	-1	L

Descriptive Statistics

Descriptive statistics (mean and standard deviations) are presented for physical activity (Table 9), skill ability (Table 10), and knowledge (Table 11). Students had an overall high average percentage of MVPA for the season and postseason phases of the unit, reaching 71.16% and 63.95% respectively. These percentages indicate most students reached the gold standard of a minimum 50% of the lesson spent in MVPA (U.S. Department of Health and Human Services, 2010). We expected the pre-season MVPA to be slightly lower for all students (43.02%) due to students spending more time conversing, practicing, and strategizing.

Physical Activity

A one-way repeated measures ANOVA was conducted to determine whether there was a statistically significant difference in percentage of lesson spent in MVPA by higher or lower status students over the course of a SEM season. There were no outliers and the data was normally distributed at each time point (pre-season, season, and post-season), as assessed by boxplot and Shapiro-Wilk test ($p < .05$). The assumption of sphericity was met, as assessed by Mauchly's test of sphericity ($\chi^2(2) = 2.29, p = .32$). In comparing MVPA with status, the repeated measures ANOVA indicated no significant main effect of status on the percentage of lesson spent in MVPA during pre-season, season, and post-season ($F(2, 84) = 1.99, p = .142, \eta_p^2 = .05$). Even though there was no interaction found between MVPA and status, high-status students did spend more time in MVPA than low-status students across all three phases of the

season. During the unit, high-status students spent more time in MVPA during pre-season (44.64%), season (78.19%), and post-season (68.63) compared to low-status students (41.41%, 64.13%, and 59.27% respectively).

Table 9

Means and Standard Deviations for Variables

	Status	Mean	Std. Deviation	N
Pre-Season	Low-status	41.41	11.28	22
MVPA	High-status	44.64	9.18	22
	Total	43.02	10.29	44
Season MVPA	Low-status	64.13	18.57	22
	High-status	78.19	14.51	22
	Total	71.16	17.94	44
Post-Season	Low-status	59.27	14.54	22
MVPA	High-status	68.63	17.68	22
	Total	63.95	16.68	44

Skill Ability

To compare the effect of status on skill ability outcomes of the unit, an ANCOVA was performed. Levene's test and normality checks were carried out, and assumptions were met for all tests. Findings indicated a significant difference in mean skill ability from pre- to post-test ($F(1,43)=40.28, p < .05$) within status. Adjusted pre-test scores were set at 10.94 for both high- and low-status students. Mean post-test scores of skill ability were higher for high-status students (18.63)

than low-status students (10.24). These findings indicated high-status students improved their game-play performance score by a mean gain of 7.68, while low-status students decreased their game-play performance score by a mean loss of -0.31.

Table 10

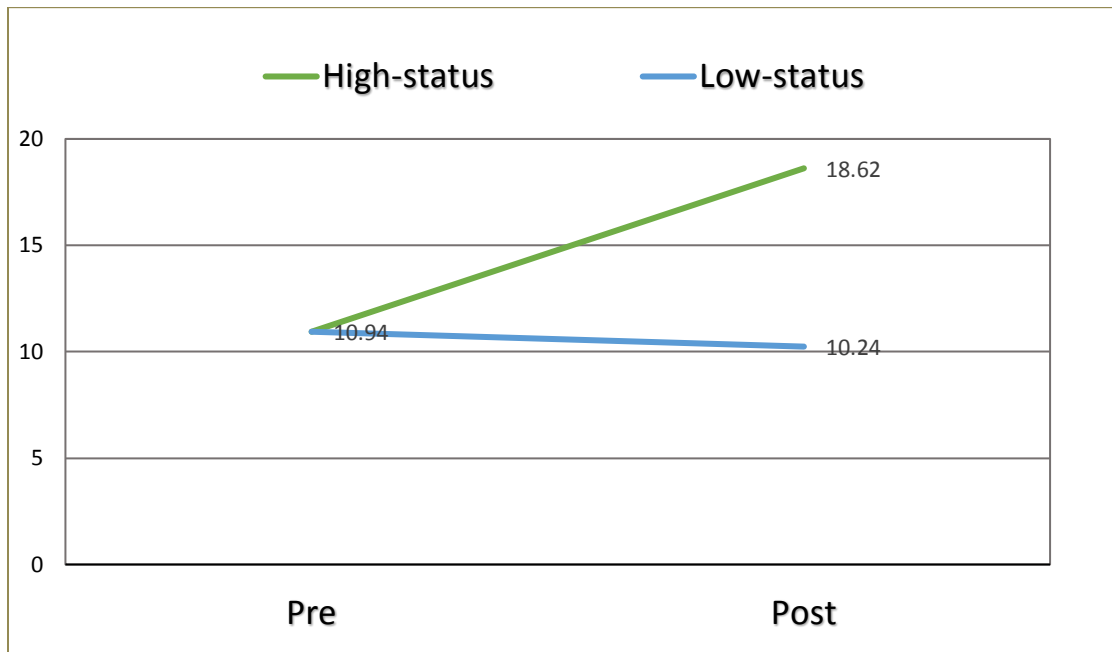
Descriptive Statistics for Post-test Skill Ability as a Function of Status

Status	Mean	Std. Deviation	95% Confidence Interval	
			Lower Bound	Upper Bound
Low-status	10.242 ^a	.93	8.36	12.12
High-status	18.628 ^a	.93	16.75	20.51

a. Covariates appearing in the model are evaluated at the following values:
Pre-test skill ability = 10.94

Figure 3

Students' Skill Ability Changes from Pre- to Post-Test.



Knowledge Ability

The second ANCOVA indicated a significant difference for pre- to post-test of knowledge ability due to status ($F(1,43)=16.88, p < .05$). Adjusted pre-test knowledge scores were set at 43.48% for the students. High-status students improved 24% to an average post-test score of 67.5% while low-status students improved 10% to an average post-test score of 53.8%. The results of the third ANCOVA showed a significant difference for pre- to retention-knowledge score between high- and low-status students ($F(1,43)= 9.56, p < .05$). The last ANCOVA showed a significant difference for post- to retention-knowledge scores between high- and low-status students ($F(1,43)= 1.36, p < .05$). Average retention-test

scores for high-status was 57.39%, while low-status students scored an average of 36.09%.

Table 11

Descriptive Statistics for Post-test Knowledge (percent correct) as a Function of Status.

Status	Mean	Std. Deviation	95% Confidence Interval	
			Lower Bound	Upper Bound
Low-status	53.790 ^a	2.29	49.16	58.43
High-status	67.514 ^a	2.29	62.89	72.15

a. Covariates appearing in the model are evaluated at the following values:
Pre-test knowledge = 43.48

Figure 4

Students' Knowledge Changes from Pre- to Post-Test.

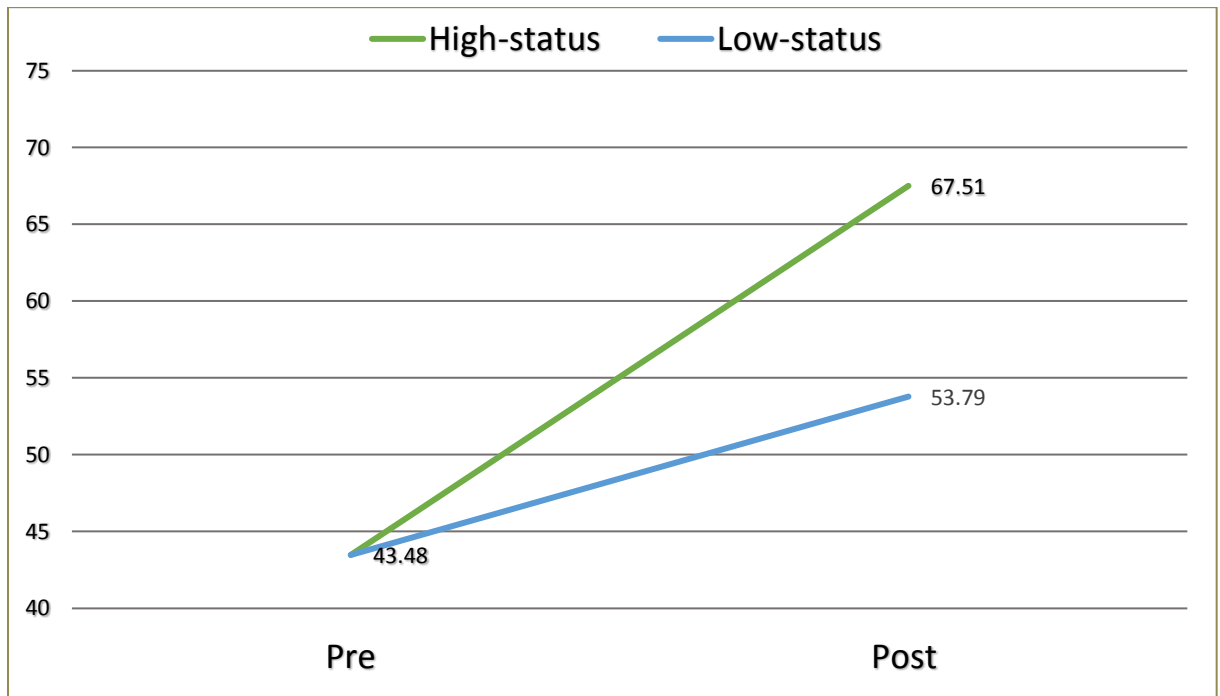
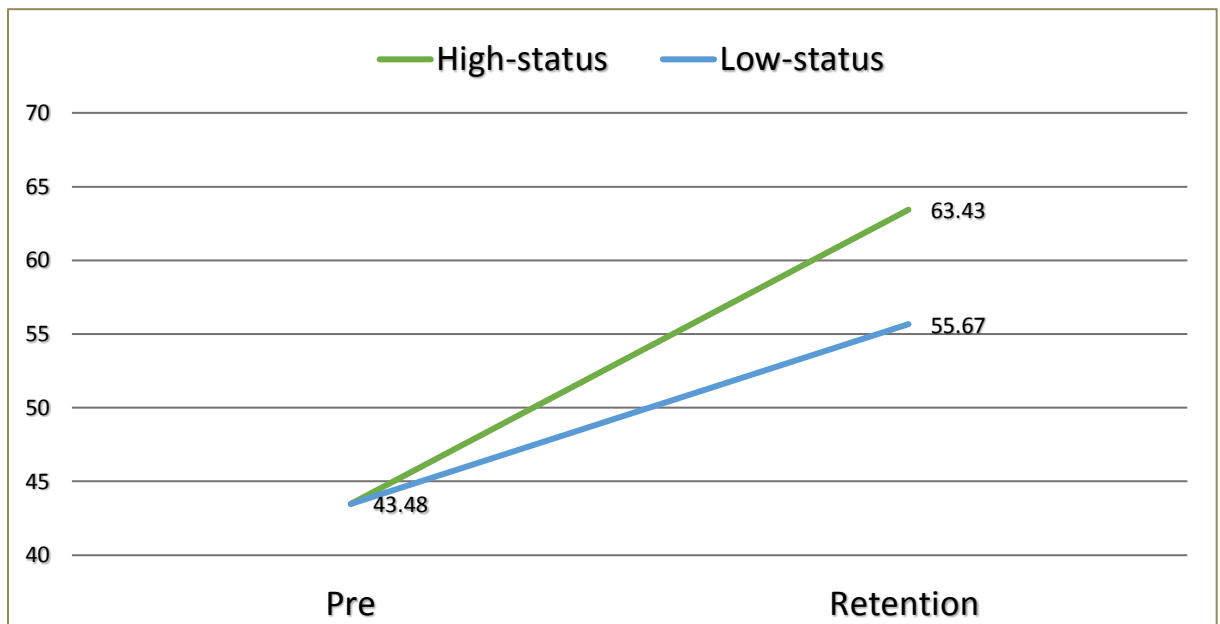


Figure 5

Students' Knowledge Changes from Pre- to Retention-Test.



Discussion

The purpose of this study was to analyze the effect of social status hierarchy on physical activity, skill level, and knowledge outcomes of fifth grade students participating in a SEM field hockey unit. Research has shown that gender and skill ability (Mesquita, Farias, & Hastie, 2012) can play a major part in these outcomes. However, social status is a somewhat concealed characteristic. The concept of social status is strictly perceptual, based on the beliefs of the group members (Cohen & Lotan, 2014), so it is understandably difficult to quantify, simplify, and comprehend from the perspective of the teacher and researcher. The relationship between social status and SEM outcomes has not been investigated. Therefore, by measuring social status and three primary learning outcomes, we can appreciate a more sociological perspective on experiences within SEM.

Research has highlighted physical activity levels (time spent in MVPA) is not affected by students based on their skill level (Hastie & Trost, 2002). Our results also found all students met the gold standard of 50% MVPA during the season and post-season phases of the model, supporting the results of Hastie and Trost (2002). Furthermore, Hastie and Trost (2002) found that all students spent an average of 60% of lesson time in MVPA with no significant difference in MVPA based on students' skill level. Similarly we found no significant differences based on the characteristic of social status. Hastie and Trost (2002) did note that high-skilled students spend more time in MVPA than low skilled students, in which our findings showed high-status students spent more time in MVPA over

all three phases of the unit than low-status students. Researcher's inferences toward the pre-season phase are due to the allotted time to students to participate in more sedentary activities like deliberating strategies, role assignment, and group consultations, therefore MVPA was expected to be slightly lower during this phase. Physical activity levels during SEM did not appear to be affected or discriminated by social status.

An alarming finding from this study is the large difference between high- and low-status students' average development of skill from the SEM. High-status students improved their skill ability greatly (+7.68) over the course of the season, however the analysis of covariance indicated low-status students declined in skill ability (-0.31). SEM relies on the students working cooperatively within their team to develop the skill ability of all students through team-practices, drills, and games (Siedentop, 1994). Therefore, students will advance their skill ability by interacting and collaborating with their teammates (Vygotsky, 1978). Skill ability was coded using the TSAP, a direct and authentic measurement of skill application in a game situation, thus we could score the students not only on their level of skill, but their ability to utilize and apply their skill with strategy during the game. Another benefit to using this measure, is that the students' skill ability would be affected by the skill play of their teammates. The reason for this benefit, is that students choose who they involve, or not involve, in the play. For example, the amount of received balls via passing, is involved in the calculation of performance score. Therefore, if Susan (low-status) does not receive the ball as many times as her teammate Adam (high-status) because her teammates do not

believe she will be successful, her performance score will be lower than Adam. Therefore, the decline in low-status students' skill ability could be based on the different tactics and strategies students used during the season. Since post-skill ability scores were measured during post-season, the heightened sense of competition (through double elimination) may have altered the game-play. Knowing that students participating in SEM will have different in-game behaviors based on their skill level (Hastie, Ward, & Brock, 2017), we theorized that social status could also influence their game performance and subsequent skill ability. Nonetheless, skill ability outcomes were significantly worse for low-status students, posing a question of social status as a potentially major influence within the SEM.

In addition to skill development, knowledge achievement outcomes differed significantly depending on the social status of the students. High-status students achieved and maintained larger improvements in cognitive ability than their low-status counterparts across pre- to post-test scores (+24.03% and +10.31% respectively) and pre- to retention test scores (+19.9% and +12.19% respectively). SEM is structured around student-centered instruction so they are held accountable for their own, and their peers', learning (Siedentop, 1994). Additionally, students will make meaning of the material by collaborating in the group setting, where they are encouraged to interact with their teammates (Vygotsky, 1978). The results from this study however, demonstrate a disconnect or detachment between high-status students and their low-status teammates. That is, low-status students were unable to conceptualize their knowledge of

hockey, because their high-status teammates were more concerned with the competitive agenda of SEM (getting the task done or winning the tournament) instead of involving their teammates. Likewise, low-status students allowed their high-status teammates to control the team, because they were more likely able to lead their team in achieving their collective goals (Anderson & Kilduff, 2009). Research has shown knowledge differences for students of differing skill ability (Alexander & Luckman, 2001), with our study showing that social status can also contribute to knowledge development. In physical education, research has shown that high-status students have higher rates of verbal exchanges at the beginning of the SEM (Brock & Hastie, 2017) during the key student-centered instruction and teamwork, ultimately affecting the learning processes of all members (Cohen & Lotan, 1995; Vygotsky, 1978). Therefore, low-status students are ostracized from their team because they are not involved in the collaborative effort upon which SEM relies. The knowledge test included declarative and procedural questions about field hockey, raising questions on the scaffolding of teaching-learning in SEM. More specifically, how are students discussing the nuances of the sport with their peers? Further, are high-status students including and involving their low-status teammates? An emphasis on accountability of knowledge and skill development of all teammates has been shown to be a weakness of SEM (Araujo, Mesquita, & Hastie, 2014). Indeed, the teacher is responsible for initially teaching the skills and content knowledge, however, the question of whether students take advantage of the opportunities to interact and discuss the material comes into play. A possible solution for encouraging a more

equitable SEM unit, is by teaching an unfamiliar sport in which students must rely on interacting and collaborating with each other to learn and practice the main skills. For example, netball is a popular sport in England, Australia, and New Zealand, although non-existent in the United States. A netball SEM unit could potentially level the playing field, if you will, by creating the opportunity for students to strategize, teach each other the rules, and examine the correct way to conduct the skill together as a team, despite the social status hierarchy. Another possibility includes the teacher controlling students' acquisition of power by rotating roles of the team (Araujo, Mesquita, & Hastie, 2014), including problem solving tasks that require more than one student to figure out the solution (e.g. "your team is leading by one point with 30 seconds in the game left, act out at least 4 different defensive formations that include all of your teammates to protect your goal"), and utilizing open-ended prompts for discussion in which there is no correct answer (e.g. "what are the benefits of keeping the ball close to the sidelines?"). Additionally, Araujo and his colleagues (2017) suggest the variable of time on learning outcomes can help minimize the gap between skill level of students. By implementing multiple SEM seasons (same sport) over consecutive years, students have time to develop their skill level and other learning outcomes.

Limitations

One of the potential limitations of this study is the measurement of long-term knowledge retention and skill development. We did not measure longitudinal effects and differences; therefore, we are unable to know if students processed

the content, or if they could temporarily recall the knowledge needed to complete the test based on a 12-week retention measure. Another limitation is there were only four people on each team, so social status hierarchy was short. That is, the top two students were assigned high-status, and the remaining two students were assigned low-status. Future research that utilizes larger group sizes (5-6 students) could potentially demonstrate more substantial differences in outcomes and participation. This is due in part because, with more group members, high-status students are more likely to dominate the unit, potentially ostracizing lower status students even more (Cohen, 1994) and therefore affecting their ability to interact with their teammates and construct their knowledge (Vygostky, 1978).

Conclusion

Comparing the results of this research with previous studies suggest that social status may also be a compounding factor in learned outcomes of the SEM, alongside gender and skill ability (Araujo, Mesquita, & Hastie, 2014). SEM remains a viable alternative to traditional direct style teaching. However, high-status students are gaining more profitable experiences regarding skill development and knowledge achievement than low-status students. Despite the goals of SEM focused on student collaboration and teaching-learning, accomplishing inclusivity and effective peer instruction remains a challenge (Kinchin, Penney, & Clarke, 2001). Additional research is desired to understand the impactful role of social status in physical education, especially within pedagogical models utilizing group work. In fostering an environment where

students are involved in the learning process, the likelihood they will learn the material.

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MANUSCRIPT THREE

'What Makes You the Boss?': Understanding Student Perceptions of their Social
Status in Sport Education

To be submitted to Sport, Education and Society

Abstract

Student's perceived identity within physical education group work can influence engagement and behavior within the group task (Cohen, 1994). In the sport education model, students experience affiliation with their teammates to build their sense of identity and investment (MacPhail, Kirk, & Kinchin, 2004). However, research shows social status can influence the experiences of students within group tasks, indicating the potential for unequal participation and interactions during group work (Cohen & Lotan, 2014). Therefore, the purpose of this study was to explore students' construction of identity and status within a group-based sport education unit. Additionally, we sought to understand students' perceptions of their group dynamics and discussions during the unit. Methods used in this study involved GoPro recorded lessons as stimulated recall for individual semi-structured interviews with eight fifth-grade participants (4 participants from 2 teams). Bourdieu's theory of social capital and habitus in developing a field of social hierarchy and construction of identity served as the theoretical framework for the study. Through transcendental phenomenology, this article reveals the perceptions of students experiences related to their group identities and socialization as they participate in physical education group work.

Introduction

The purpose of group work in education is to promote positive social development, increased engagement, and knowledge outcomes of all students within the group (Baines, Blatchford, & Kutnik, 2016). Particularly relevant, are the conditions and dynamics of the group that promote effective opportunities in fostering students to develop these outcomes. Social status hierarchy is a pervasive influence emerging from all social contexts, including group work. Individuals receiving high-status attainment are bestowed with power, prestige, and dominance, which can fundamentally determine the dynamics, opportunities, and constraints that each member experiences as part of the group (Cohen, 1994). Groups award status to individuals who possess characteristics or behaviors perceived to bring the most success to the task, goals, or needs. For example, individuals with high perceived competence (Fragale, 2006) and motivation (Ridgeway, 1991) can contribute to status and power attainment, because they can utilize their esteemed characteristics and behaviors to benefit their group. Social hierarchy is an often unspoken, yet unanimous, decision by all group members, and consequently status attainment (high or low) can potentially affect their drive to participate and contribute to conversations, develop social skills, and increase learning outcomes (Rovegno & Dolly, 2006). Group work in education settings provides a scaffold for students to develop personal and social responsibility, while learning the content in a collaborative format.

Status research in physical education is limited despite the prevalent use of groups and teams. Early physical education research on groups focused on

the influence of gender on participation in middle school (Griffin, 1985). Griffin (1985) found boys who were considered “macho” or high skilled were much more present and involved within their teams than their “invisible” peers or “wimps.” Consequently, the influential members of a team initiate more social interactions than their low-status peers (Smith, Markley, & Goc Karp, 1997) creating an issue in providing equitable opportunities. Low-status students feel intimidated by their high-status teammates, leading them to feel disregarded and silenced (Brock, Rovengo, & Oliver, 2009). On the contrary, high-status students perceive low-status students to be uncooperative and disruptive to the team tasks (Smith, Markley, & Goc Karp, 1997). More recently, Barker and Quennerstedt (2016) examined the influence of status on interactions of high school students within their groups. Findings indicated external factors, particularly the nature of the unit and skill ability, can play a significant role in determining influential members of groups. For example, if a student is perceived as good at soccer, they may be assumed as having higher status and more power during a soccer unit. Therefore, research shows students are marginalized by their status within the group, affecting interactions with team members.

Research within the sport education model (SEM) has particularly explored gender and skill based participation rates in groups (Araujo, Mesquita, & Hastie, 2014). By replicating a sport season, the team-based pedagogical model encourages students to create affinities and relationships by being part of a team and holding a significant role. Theoretically, by holding a significant role (captain, referee, scorer, etc), students will invest in their team’s success and

collaborate effectively with their peers. However, Hastie (1998) found middle school girls believe they are not physically skilled enough to help their team, therefore requiring the presence of the boys to complete the season successfully. Moreover, girls noted that they preferred the boys to be captains or referees (more influential roles) because they were more capable and dominant. Males were considered superior, influential, and dominant over group tasks, promoting an inequality of expectations for students based on their gender, especially when considering the context of the unit (Parker & Curtner-Smith, 2012; Penney, Clarke, & Kinchin, 2002).

While the SEM aims to provide an equitable and inclusive setting for students as they learn values and practices associated with sporting culture (Kirk & Macdonald, 1998; Siedentop, 1994), power and status appear to affect experiences and interactions. In a study by Brock, Rovegno, & Oliver (2009), fifth grade students suggest status in SEM is determined by socioeconomic level, attractiveness, athletic ability, and personality. Moreover, the impact of status expectations was evident toward dominated interactions by high-status peers and alienation of low-status peers. High-status group members have higher interaction rates than low-status students during the pre-season phase of SEM, which is the time period in the unit that requires most of the decision-making (Brock & Hastie, 2016). Additionally, in a homogeneous low skill league, low-status students had a higher average number of interactions per lesson ($n = 41$) than their low-status counterparts in the heterogeneous league ($n = 15$) ($p < .05$). Attempting to mediate the status influence within SEM units, Farias, Hastie, and

Mesquita (2017) intervened with a group of seventh grade students (10 girls, 16 boys) to create a more inclusive climate of participation. Results from the basketball unit found that students were perceived as high-status due to athletic ability, affiliation with community sports, and popularity. Moreover, these high-status students marginalized low-status students during gameplay where “high-status students do not pass the ball to certain less-status teammates or students who are not in their circle of friends during gameplay” (Farias, Hastie, & Mesquita, 2017, p. 7). SEM provides a scaffold for authentic teamwork and collaboration, however there is currently a dearth in research towards understanding the students’ experiences and perceptions. While we understand some outcomes are different for high and low-status students (Brock & Hastie, 2016), a need for understanding student perceptions in group work could explain learning potentials.

This study aims to further the research on status influence in physical education group work, particularly in the SEM context. The purpose of this phenomenological case study was to explore the experiences of fifth grade students participating in a group during a SEM unit. Focus was placed on how students perceive their status and identity within their team while understanding the thoughts and emotions related to team dynamics.

Theoretical Perspective

French sociologist Pierre Bourdieu developed Field Theory to explain the social order developed in groups in society, particularly in education. He posed

the notion that individuals (agents) will experience different positions (habitus) in groups based on the social and cultural capital they bring to the group. When students are assigned to a group or team, they bring a variety of knowledge, skills, and characteristics to the table which can determine the expectations placed by their peers. Therefore, the beliefs and values of the social hierarchy (doxa) will reflect the level of power and prestige provided to each group member based on the range of attributes they possess. Bourdieu (1985) argues that “social capital is resources based on connection, networks and group membership: basically who you know, used in pursuit of favor and advancement” (Sözbilir, 2017, p. 93). In this study, we used the Bourdieusian theory to support the experiences of the participant's perceptions of their position in the status hierarchy.

Method

Understanding fifth grade students' construction of their identity and status within their group is predominantly ambivalent since the complexities of teams are so dynamic. Therefore, the design of this study was framed by aspects of phenomenological research to describe the common meaning of these students' lived experiences in their teams (van Manen, 2001). The researchers aimed to grasp the universal essence of the participants as they experience the social status phenomenon. Thus, the research design involved interviewing the participants who experienced the group work and systematic analysis of the data to essentially discover the essence of the experiences for individuals.

Participants and Season

A sample of 46 fifth grade students (19 males, 27 females) enrolled in an elementary school located in the southeastern United States region were eligible to participate in the study. The student sample was from two separate general classrooms which typically merge for physical education. Ethical permission to conduct the study was granted, and informed consent was obtained from all participants and their parents or legal guardians. Of the 46 students who met the criteria for recruitment, two teams of 4 students were randomly selected to participate in the study. All eight participants ranged in age (9 to 11 years), gender (4 boys, 4 girls), and race (Black= 3, White= 3, Asian= 2). Participant profiles and pseudonyms are available in Table 12. Sarah, Bella, Liam, and Nick made up the Legendary Knights team, while the Magnificent Mavericks consisted of Adam, Christine, Hunter, and Caroline.

Table 12

Participants' Characteristics

Participant	Sex	Age	Race	Team	Role
Sarah	Girl	9	White	Legendary Knights	Equipment Manager
Bella	Girl	11	Black	Legendary Knights	Flag Bearer
Liam	Boy	10	White	Legendary Knights	Captain
Nick	Boy	10	Black	Legendary Knights	Trainer
Adam	Boy	9	Black	Magnificent Mavericks	Captain
Christine	Girl	9	Asian	Magnificent Mavericks	Flag Bearer
Hunter	Boy	10	White	Magnificent Mavericks	Trainer
Caroline	Girl	11	Asian	Magnificent Mavericks	Equipment Manager

We utilized the SEM to explore the group work aspect of the social phenomenon. Since SEM is grounded on the basis of students working in the same teams for the entire four-week (20 lesson) unit, students establish a sense

of affiliation and relationship with their teammates (Siedentop, 1994). Therefore, the social feature of the unit is heightened when group members are involved in small group discussions with increased responsibility and decision-making opportunities (Brock, Rovegno, & Oliver, 2009). In this study, the implementation of the model was based on the six important facets outlined by Siedentop and colleagues (2011); seasons, affiliation, formal competition, culminating event, record keeping, and festivity. The physical education teacher agreed to teach the 20-lesson SEM floor hockey unit to the class. The male teacher has over 15 years of teaching experience and teaches approximately 3-4 SEM units per academic year, resulting in his students being familiar with the nuances of the model. The first author and the physical educator planned the season together and spoke weekly to ensure model fidelity based on the standards put forth by Hastie and Casey (2014).

The floor hockey unit involved pre-season (lessons 1-11), season (lessons 12-16), and post-season (lessons 17-20). Since the purpose of the study was to examine the students' perceptions of their identity and discussions, the focus of data collection was through pre-season lessons. Each lesson focus during pre-season is presented in Table 2. During pre-season lessons, students participate in decision making and key discussions through team conversations. Sample decision making included creating a team name and designating team roles, while key discussions involving strategizing for game play and teaching skills were encouraged during these lessons. Therefore, the authors focused on this

phase specifically for perceptions regarding team discussions and positionality in regard to decisions made by team members.

Table 13

Pre-Season Lesson Outline

Lesson	Focus
1	Teacher describes unit- hockey Teacher allocates students into 12 teams of 4 students Students come up with team name and color of flag
2	Teams designate roles and responsibilities Basic rules – hockey stick parts, player positions (rover, forward, defense, goalie)
3	Responsibilities – warm up card, design flag
4	Dribbling Team practice/ drills
5	_Passing- push pass and hit pass Team practice/ drills
6	Strategies – pressing the ball Defense- man to man and zone Team practice/ drills
7	Determine rules, scoring, and boundaries Pre-season scrimmages- random 2 minute games
8	Players learn and practice duty roles (scorer, ball retriever, referees) Pre-season scrimmages- random 4 minute games
9	_Pre-season scrimmages- random 6 minute games
10	Pre-season scrimmages- random 8 minute games (2 x 4 minute halves)
11	Team practice

Data Collection and Procedure

Video-recorded Lessons

All lessons during the pre-season phase (lessons 1-11) of the SEM hockey unit were recorded from two perspectives (internal and external). Before each class commenced, two different students (one from each team) were asked

by a research assistant if they were willing to wear a GoPro Hero4 on their forehead for the entirety of the class. All students assented to wearing the GoPro, so the device was worn by each student over the course of the pre-season. The purpose of the internal GoPro was to collect verbal interactions within the proximity of the team members. Using this angle, we could detect the actual dialogue of the students as they spoke. In addition to the internal camera, an external GoPro was mounted on the wall directly facing the participating teams. This angle was named the external camera because the purpose was to collect video on non-verbal interactions. The external perspective provided a portrait of each group members' use of space, body gestures, facial expressions, and engagement. The video data from each camera were transferred to a storage device.

Individual Interviews

Participants' perceptions of their status and interactions were collected through a total of 24 semi-structured individual interviews with stimulated recall techniques. Interviews were scheduled immediately after each lesson and lasted for 10 to 15 minutes. Each interview consisted of a research assistant and one student. To maintain rapport, two research assistants were assigned to one team so that the participants could feel a level of comfort with their designated research assistant. Interviews took place in two designated private rooms attached to the gymnasium. As mentioned prior, all interviews were individual, with all participants from the two selected teams partaking in three interviews each. The individual interviews were selected over focus groups due to the

sensitive nature of the material and to encourage participants to reflect openly about their peers without the fear of confidentiality concerns.

Stimulated recall methods using the GoPro video data were incorporated to encourage participants to reflect on pivotal team discussions, their position within the team, and their contributions or thoughts during those moments. After each day of the preseason (lessons 1-11), the primary researcher cut a total of 7 clips from GoPro data (4 from the internal camera, three from the external camera) that involved team discussions or events (averaging four minutes in length). At the end of the next class lesson, the short clips were played to each participant during their individual interview, using an Apple iPad. The participants were asked to recall the events from their perspective, while the interviewer used conversational prompts to discuss their feelings. During the semi-structured interviews, the interviewers also asked students to describe their perceptions of their position in the team. The open-ended questions focused on personal opinions of others, factors contributing to importance, and influences on participation and engagement. All interviews were recorded using a digital voice recorder and transcribed verbatim for analysis.

Data Analysis

Qualitative data analysis techniques were used to explore students' perceptions of their status. First, the lead researcher coded the experiences of each student individually through horizontalization (Mustakas, 1994) by watching the clip used during the interview and concurrently following the interview

transcript. Through the process of horizontalization, significant statements and sentences were acknowledged to provide an understanding of how the participants experienced social status within their teams. Once saturation was reached for that student, the researcher completed the process for the next student, and so forth. This process continued to develop clusters of meaning from the significant statements within the transcripts (Moustakis, 1994). Since the study was based on a phenomenological paradigm, it was essential for the researchers to immerse themselves in the data to appreciate and accurately portray the experiences of each student. Open coding (Strauss, 1987) alongside textural and structural description (Creswell and Poth, 2017) were used by the lead researcher to label concepts and develop categories to develop the theory of the results. Following preliminary coding procedures, the researcher used comparative theme analysis to compare the different experiences of the participants. Finally, the analysis concluded with some central themes to represent the conventional construction of meanings from the students (Saldaña, 2016).

Results and Discussion

Three themes emerged from the interview data to include: *'what makes you the boss?', 'I decided I wasn't going to say anything anymore',* and *'it's annoying because I can't do it all'*. In this section, we discuss the three themes and provide a discussion based on prior research and the theoretical scaffold. We found Bourdieu's theory of habitus and social capital to be particularly salient in understanding the students' perceptions. The themes represent eight students'

(pseudonyms provided), from two different teams, perceptions of their status and team dynamics from a social standpoint.

'What makes you the boss?' Characteristics contributing to importance

To facilitate a conversation about status, the initial interview provided an opportunity for participants to reflect on their position in the team compared to their teammates. All participants expressed that level of importance was based on skill level in the sport or the context of the lesson. Some students labeled themselves less important in their team due to believing they were not as good at playing hockey as their teammates. Christine claimed, "I'm not that person who can play defense that well or score when they need, so I'm probably not that important." On the other hand, some students perceived themselves more important because they were better at playing hockey. They focused on their physical strength and ability to provide themselves with the prestige they needed in their team.

I'm very important... My teammates know I have played hockey before. I am also fast so I can get over the court easily and I am short so people will not be able to see me as well. (Liam, Legendary Knights)

Similarly, Christine stated how she felt her teammates were more important than her because she has seen her teammates play before. "I know they are the main people in my team because I've seen Hunter play before, and I know Caroline can play because she plays at recess and stuff." These views are

representative of literature in which perceived physical competence enables high-status acquisition and an increased level of power based on the ability to bring team success (Parker & Curtner-Smith, 2012). The context of the class, being physical education, promotes the perception of physical strength and ability is an essential aspect of success. In this present study, the students felt as though their importance, or position of status, was based solely on their hockey ability. Additionally, their feeling of importance is constructed by comparing their skill ability to the teammates. Consequently, the ambivalent nature of importance and status is dependent on the people within the team and the context of the lesson. The students are reliant on their social capital of skill ability to provide them with power in their class.

Interestingly, during later interviews, some participants changed their initial perceptions of peers after experiencing scrimmage games. We found this impression occurred both directions (high to low and low to high) which affected their views of importance. After lesson 9, Hunter (Magnificent Mavericks) commented on his teammate's ability following two lessons of scrimmages. "I am surprised by Caroline because I thought she would not be able to kinda move as much or score as she does. I did not know that before." As the unit progressed into scrimmage matches where physical skill was more evident, participants became more cognizant of their teammates' ability. This shift in awareness altered the level of importance in Magnificent Mavericks especially, with importance amounting to goals scored in the games. This shift in awareness appeared to occur after lessons that included scrimmages, whereby team

members are exposed to the actual skill associated with floor hockey. During her interview after lesson 10, Caroline reflected on the current level of importance of her teammates.

Right now I'm the most important because I'm scoring all the goals. Christine is the second best player. Hunter wore sandals one day so we couldn't put him in offense to score goals. Adam is least important now because we just send him to goalie. (Caroline, Magnificent Mavericks)

It was also noted that although perceived skill was the most desirable status characteristic, participants conveyed sex to play a part in the level of importance. Three of the participants mentioned sex to affect the way they are perceived. Sarah (Legendary Knights) initially felt as though her sex determined her importance, but ultimately resumed to physical ability that could affect her status. She explained, "I do not know if they think I can do it (be an important teammate) because I'm a girly girl, and I'm like a girly girl, but at home, I also do sports." Additionally, the perceptions of sex and skill ability on the level of importance can affect the way students feel about how their peers will succeed in the class. These thoughts can lead students to believe only some people can do well in physical education, specifically skilled boys.

He thinks he's more important because I'm a girl... actually it makes me feel like some girls are stronger than boys. They just think that, but it's not true. (Sarah, Legendary Knights)

The participants in the current study constructed the hierarchy of importance and status based on perceived skill ability and sex. Perceived skill is a status characteristic shown to predict social hierarchy in physical education since physical ability is valued highly in this context (Parker, & Curtner-Smith, 2012). Additionally, perceived skill ability is viewed by these participants as the most valued social capital habitually invoking power (Bourdieu, 1985). Consequently, the participants who are perceived to be better at floor hockey were unconsciously assigned high-status within their group, leaving those students with a lower perceived skill ability to be likely assigned low-status and less power. This concept can lead students in physical education to believe that they are less important because of their characteristics.

'I decided I wasn't going to say anything anymore' Threat avoidance

For participants identifying themselves as being less important, the desire to participate was met with habituated silence to intentionally avoid any threat of disregard from their teammates. Negative reactions from previous experiences within their group caused these participants to learn to use more passive behaviors. Utilizing passive behaviors like agreeance, seeking approval and acceptance, the participants made a conscious decision to minimize their exposure to the group discussions. Adam's (Magnificent Mavericks) approach was to be physically absent "I just hide from them". Furthermore, it was safer for the participants to agree with their peers to provide them with validation. "They yelled at me, and that made me mad. So I decided that I wasn't going to say anything anymore." (Christine, Legendary Knights). Participants were met with

negative reactions to their suggestions. Some participants were embarrassed, ignored, yelled at, and even insulted. These reactions caused the participants to become defensive and less inclined to contribute. They preferred to avoid disruption in the discussions about decision-making, consequently less likely to test whether the threat of embarrassment will still exist, therefore affecting any further initiated interactions. As a low-status member, Christine (Legendary Knights) stated "I said we should try it that way but I don't know if they heard me, so I just agreed with them.... That probably made them feel good because I listened to them".

For those individuals who were constantly disregarded for their ideas, the habitus contoured a lack of motivation to actively participate and engage in team work. This, in turn, affected the students perceived relevance in the task. Despite holding a role in the team, their identity was diminished and any sense of affiliation was weakened. During her interview, Bella highlighted the main situation which led to her deciding to avoid working with her team any further.

Liam just yelled at me because I didn't block it good, and I'm starting to think this team doesn't care about the team, they just care about winning. I said 'Liam, you didn't have to yell at me about that' and he didn't say anything. He didn't even apologize.... When people say he's good, he probably thinks he can do whatever he wants and say anything he wants... so I guess there's no point in me helping the team out. (Bella, Legendary Knights)

The threat from Liam appeared to cause Bella to devalue her purpose and identity with her team. She later decided to participate again by listening and agreeing with her peers. This concept was a common characteristic among these particular participants. The participants stated that when they agree with their high-status team members, they are contributing and participating in the team discussion. Therefore, when students have shifted to a threat avoidance mindset, they prefer to agree with more important team-member's ideas: "I just kept quiet to let them decide because I really don't care, even though I didn't like the (team) name"- Sarah, Legendary Knights. These participants chose to foster more passive behaviors to minimize their exposure to the fear of any threats and survive the group unit. In developing the accordance behavior, low-status students continued to feel silenced and ignored by their peers, similarly to the participants' reactions in the study by Brock and colleagues (2009). The concept of feeling disregard from their teammates appears to be redundant among low-status students participating in physical education research (Brock, Rovegno, Oliver, 2009; Smith, Markley, & Goc Karp, 1997), indicating a potential for non-inclusive practices.

'It's annoying because I cant do it all' The struggle of collaboration

While some participants experienced fear and embarrassment when attempting to collaborate, other participants expressed frustration and irritation with the lack of contribution by perceived unimportant peers. This theme portrays dominant participants experiencing struggle when attempting to involve their teammates in the task. Some students felt their peers did not care about the

team and therefore would not contribute to the team effort. These students felt annoyed by the lack of care from their counterparts, especially since the competitive aspect of the SEM unit is of high relevance. From the Legendary Knights team, Liam complained, "They (Sarah and Bella) don't even act like they care about our team or winning. It's annoying because I can't do it all." Despite less important team members showing a lack of care toward the team, the more powerful participants stated how they struggled to involve other teammates. The majority of participants in particular expressed frustration with feeling unequal investment into the team, leading to a lack of participation by their peers. During a Magnificent Mavericks practice lesson, Adam forgot to bring the team flag to class for the second time. Consequently, the team was penalized one point and the team expressed disappointment with Adam. This clip was shown to Hunter during his interview, and he was asked to recall the event. Hunter spoke about his frustration with Adam because he was always 'doing the wrong thing' and 'not paying attention' which was causing their team to lose points. Hunter asserted that he has experienced working with 'less important people' in groups before, so he has learned to ignore those particular students. "There's always that one person that gotta be so annoying. Adam just does nothing, so I just try to ignore him and do his job for him." Here, Hunter accepts that Adam will not put forth effort, and therefore has decided to not include him anymore. In fact, all three of Adam's teammates feel exasperated with Adam's lack of effort, and collectively decide to assign him to a less important role. Christine added "we put Adam in the goalie spot because goalies don't have a big part in the game except for

blocking the goals. So that's why we put him in goal." On the contrary, Adam claimed he 'doesn't care anymore' indicating that his investment in the team has diminished.

The important (self-proclaimed) team members painted an image of feeling the need to control group tasks because they believed low-status counterparts did not want to participate or 'want to be on the team'. They felt as though it would be 'easier to do it all' rather than constantly include their peers. These individuals decided to ignore the remaining team members because they considered themselves to already exhibit the tools needed to bring their team success. Consequently, they allocated less important positions and responsibilities to low-status members in hope of not affecting their team. Bourdieu (1986) states how the field and status can be a struggle for acceptance and power, especially as the students attempt to configure team dynamics. Essentially, in this study, high-status members exerted their assertiveness because it was 'too hard' to constantly encourage their teammates to be involved in the group tasks. After lessons 2 to 3, students from both teams who were to the point of frustration, adapted their approach to team discussions by seeking agreeance by their peers. Additionally, the frustrated students knew they held some power in suggesting the main idea and controlling discussions.

In Legendary Knights, Liam did not want others to feel like he was trying to make the majority of decisions, so he made a conscious effort to seek acceptance by his teammates. He acknowledged that he has some power and influence in the team, despite the fact that he wants to share the power. In his

interview, Liam was asked to watch a clip of his team deciding on the team name. He was asked to recall the events in the clip and reflect on his thoughts toward his teammates. The clip showed Liam writing down “Legendary Knights” for the team name on the task sheet, before asking his teammates if they agreed with his idea.

I think it made them feel like at least I didn't just say this is the name. I wasn't being bossy, I was actually trying to see if we all wanted to have that name. I don't want them to think I'm just gonna boss the whole thing and make it seem like I'm the only one who can have the power or like the floor basically. (Liam, Legendary Knights)

Liam understands his high level of importance to the team, but does not want to portray that he is powerful. Liam's statement indicates that he felt he was controlling the decisions, but wishes his teammates would contribute at the same time. This situation also shows that Liam, being high-status of his team, is conscious about how his teammates feel about his 'bossiness'. However, he believes that due to a lack of contributions to discussions from his peers, he needs to exert his assertiveness to ensure his team will succeed. Hunter experienced a similar situation with the Magnificent Mavericks as he felt 'nothing would happen' without his leadership. He claims “they all pretty much listen to me because they don't like to speak up. They don't really do anything but sit in the corner, but I wish they would help me out some”. On the other hand, the silenced participants told a contradictory story of their dominant team members. Their

experiences of feeling excluded and embarrassed led them to believe they had no say or influence in the group discussions.

Summary and Conclusion

This study aimed to explore the experiences of students constructing their social status and team dynamics in physical education group work. The experiences of the participants in this study demonstrates how social status plays a role in the identity and investment embodied by the members of the team. Participants recognized their position within the team and subsequently adjusted their behavior according to their treatment and reactions of their peers. Unanimous status allocation by participants were based on sex and perceived skill ability, supporting prior literature which found the 'strong and athletic boys' gaining privileged power and influence in their team (Farias, Hastie, & Mesquita, 2017; Griffin, 1985; Hastie, 1998). Consequently, girls and lower skilled students face resistance and legitimacy in their group (Munk & Agergaard, 2015). Despite the high-status members knowingly holding power, they did not want their peers believing they had all the power to avoid perceptions of dominance. On the contrary, lower status individuals felt threatened and excluded by their higher status team members, forcing them to avoid participation and collaboration. Ultimately, the realities for high- and low-status students are strikingly different during a group work task, and the structure of their behavior can be based on previous experiences or as reactions to events that occur. The cultural capital or dispositions, however, serves as the currency to which the students are assigned their status position within their group. In turn, these relations and hierarchy form

the habitus or power structure for these groups to work (Bourdieu, 1985). Bourdieu states “every individuals’ personal history, preferences, and dispositions, places in the context of the surrounding social reality form a structure that to a certain extent predetermined that individual’s potential courses of action” (Bourdieu, 198, p.27). The findings reflect the negotiations of group work power from previous studies (Brock, Rovegno, & Oliver, 2009; Cohen & Lotan, 2014; Farias, Hastie, & Mesquita, 2017) in hampering inclusion processes in physical education. At this stage, is it important to emphasize the role of social status hierarchy influencing the experiences of the group members. In a setting where gender stereotypes and physical abilities are particularly visible, physical education can potentially promote the social status hierarchy influence, especially as observed by the participants in this study.

This study was, however, bound by limitations in that researchers utilized the SEM to explore the group work aspect. In future research, perhaps an investigation into alternative instructional models, like cooperative learning, could explore differing experiences of participants, especially since group members do not have roles to build their group identity. Implications from the findings indicate a need to consider status dominance and effective collaboration in physical education. In congruence with Bourdieu’s theory of habitus (1985), this study suggests that group work is fundamentally structured based on the participants and context of the group. Furthermore, the power and dynamics are not shared equally, which alters the experiences of the group members. Further research

examining strategies to provide equitable learning experiences for students may prove useful for physical education

Disclosure Statement

The authors reported no potential conflict of interest.

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APPENDICES

APPENDIX A: INFORMED CONSENT

“Interactions and Social Status within Physical Education”

Your son or daughter is invited to participate in a research study to explore the interactions within group work in physical education. The study is being conducted by Nikki Hollett, under the direction of Dr. Sheri Brock in the Auburn University Department of Kinesiology. Your son or daughter is invited to participate because he or she is a fifth grade student at Pick Elementary school. Since he/she is age 19 or younger, we must have your permission to include him/her in the study.

What will be involved if your son/daughter participates? If you decide to allow him/her to participate in this research study, he/she will be asked to do the following: complete a questionnaire, be measured for height and weight, wear an accelerometer on the wrist and waist, complete brief interviews, and wear a GoPro during a physical education lesson. The wrist-worn accelerometer is a watch that tracks the physical activity your child accumulates and displays this activity as “moves”. Your child will wear the wrist worn accelerometer throughout the physical education unit. Your child will also complete a questionnaire that explores their perceptions of their team, teammates, and how well they work together. Your child may participate in a brief interview to understand their feelings and allow them to talk about their team privately. Your child may wear a GoPro on their forehead, which will record their visual and audio interactions with their teammates during physical education.

Are there any risks or discomforts? Some individuals may experience temporary discomfort if they become aware of and are not content with their social status in their group. To minimize these risks, we will have access to the school counsellor for resources of support. There is also a risk of breach of confidentiality that will be minimized by safe handling and proper storage of data by the research investigators involved.

Are there benefits to your son/daughter or others? If your child participates in this study, they can expect to feel good about the potential to help their team successes. Second, the participant may experience comfort in expressing their feelings and emotions to someone outside of their group. Third, your child will help contribute to developing quality physical education programs and what affects children in being active. We cannot promise you that your son/daughter will receive any or all of the benefits described.

Will there be compensation for participating? Your son or daughter will not be compensated for participating in this study.

If you or your child changes your mind about his/her participation, he/she can be withdrawn from the study at any time. His/her participation is completely voluntary. If you choose to withdraw your son/daughter, his/her data can be withdrawn as long as it is identifiable. Your decision about whether or not to allow your son/daughter to participate or to stop participating will not jeopardize you or his/her future relations with Auburn University, the Department of Kinesiology, or Pick Elementary. . It should also be noted if in the case your child provides consent and assent, but may not feel comfortable discussing their teammates during interviews, they are free to withdraw and not be included as part of the research.

Your son's daughter's privacy will be protected. Any information obtained in connection with this study will remain confidential. The data collected will be protected by not using any identifiable material. Information obtained through his/her participation may be published in a professional journal.

If you (or your son/daughter) have questions about this study, please contact Nikki Hollett at nlh0014@auburn.edu or Sheri Brock at brocksj@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your child's rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBAdmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR SON OR DAUGHTER TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO ALLOW HIM OR HER TO PARTICIPATE. YOUR SON'S/DAUGHTER'S SIGNATURE INDICATES HIS/HER WILLINGNESS TO PARTICIPATE. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

_____	_____	_____	_____
Participant's signature	Date	Investigator obtaining consent	Date
_____		____ Nikki Hollett _____	
Printed Name		Printed Name	

 Parent/Guardian Signature Date

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APPENDIX C: SOCIOMETRIC RANKING SURVEY

Please rank your teammates in order of importance:

1. _____ (most important)
2. _____
3. _____
4. _____ (least important)

APPENDIX D: PEER NOMINATION SURVEYS

Please tell us how popular your teammates are (circle your answer)

Student 1	Not popular	Average	Very popular
Student 2	Not popular	Average	Very popular
Student 3	Not popular	Average	Very popular
Student 4	Not popular	Average	Very popular

Please tell us how good your teammates are at playing hockey (circle your answer)

Student 1	Not very good	Average	Very good
Student 2	Not very good	Average	Very good
Student 3	Not very good	Average	Very good
Student 4	Not very good	Average	Very good

Please tell us how good looking your teammates are (circle your answer)

Student 1	Not good looking	Average	Very good looking
Student 2	Not good looking	Average	Very good looking
Student 3	Not good looking	Average	Very good looking
Student 4	Not good looking	Average	Very good looking

APPENDIX E: UNIT OUTLINE-FLOOR HOCKEY

Lesson	Content	Teacher's role	Students' roles
1	Preseason, Describe class format, Rules to game, Beginning skills	Class leader	Participant
2	Allocation of teams and roles Small sided games Identify team's strengths and weakness	Present team lists Discuss roles Discuss fair play	Participant
3	Essential skills- grip, Dribbling	Class leader	Determine team roles Decide team name
4	Explain competition format and post schedule Passing- push pass, hit pass Fielding	Program director	Coaches, players,
5	Shooting	Program director	Coaches, players,
6	Strategies- pressing the ball Defending- Man to Man and Zone Defense	Program director	Coaches, players,
7	rules, scoring and boundaries Pre-season scrimmages	Program director	Coaches, players,
8	Pre-season scrimmages Players learn and practice duty roles	Program director	Coaches, players,
9	Pre-season scrimmages	Program director	Coaches, players,
10	Pre-season scrimmages	Referee advisor	Coaches, players,
11	Team practice	Program director	Coaches, players,
12	Formal competition	Program director	Coaches, players,
13	Formal competition	Program director	Coaches, players,
14	Formal competition	Program director	Coaches, players,
15	Formal competition	Program director	Coaches, players,
16	Formal competition	Program director	Coaches, players,
17	Team practice	Program director	Coaches, players,
18	Play-offs	Program director	Coaches, players,
19	Play-offs	Program director	Coaches, players,
20	Championship game Awards and presentation	Program director	Coaches, players, duty team roles

APPENDIX F: SAMPLE INTERVIEW QUESTIONS

Day 2 Questions

1. How important do you feel you are to the team?
2. How do you think your teammates feel about you?

(Watch clip)

3. Walk me through what was happening in this clip?
4. What was your contribution to this discussion?
5. Did you feel as though your teammates listened to your ideas?
 - a. Why or why not?
6. Do you think your teammates want you to be captain?
 - a. Why or why not?
7. Did you have any ideas for team name?

APPENDIX G: KNOWLEDGE TEST

Hockey Knowledge Test

Full Name: _____

Team Name: _____

Circle one answer only.

1. Which answer is not a part of the hockey stick?

- A. Handle
- B. Toe
- C. Arm
- D. Heel
- E. Cannot Answer

2. What is the most important thing to remember when dribbling?

- A. To hold the stick at a 45 degree angle to the ground.
- B. To form a straight line from the elbow to the back of the stick.
- C. To keep a ball in front of the feet.
- D. To grip the stick so that the back of the left hand faces the direction you want to dribble.

3. What should you remember when passing the ball to a moving teammate?

- A. Hit the ball ahead of the teammate.
- B. Run along beside the teammate.
- C. Stay behind the teammate.
- D. Send the ball across the field to the teammate.
- E. Cannot answer.

4. Which pass is the most accurate?

- A. Push
- B. Scoop
- C. Drive
- D. Flick
- E. Cannot answer

5. What is the major reason for offensive (attacking) players to spread out?

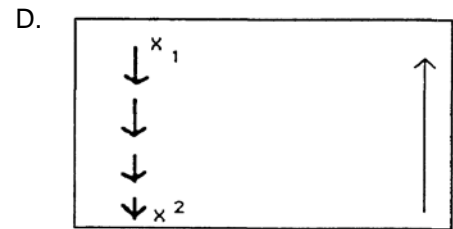
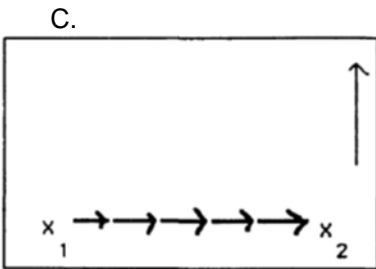
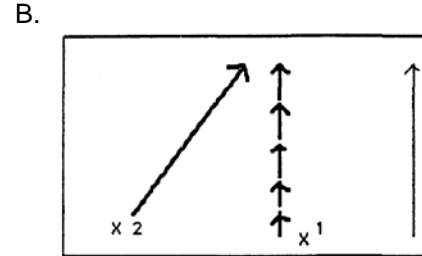
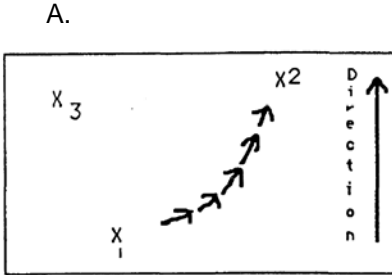
- A. It forces players to play their positions.
- B. It causes order.
- C. It decreases the possibility of injury.
- D. It creates spaces in the defense.
- E. Cannot answer.

6. An unintentional foul is committed by the defense outside the striking circle. What is the referee's decision?

- A. A penalty corner.
- B. Side-in.
- C. Free hit.
- D. Long hit.
- E. Cannot answer

7. Which diagram shows a through pass from player X_1 to X_2 ? The broken arrow indicates the path of the ball, and the solid line shows the path of player X_2 , when necessary to receive the ball.

The arrow at the side of each diagram indicates direction of play.



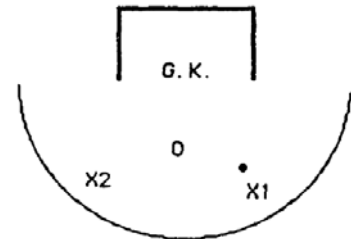
A. Cannot answer

8. In the diagram to the right:

O = defender, X_1 = attacker with the ball, X_2 = attacker, G.K. = goalkeeper

X_1 should:

- A. Shoot for the goal from his/her position at the moment.
- B. Take the ball towards O, and as O gets close, pass the ball to X_2 .
- C. Dribble around O.
- D. Pass at once to X_2 .
- E. Cannot answer.



9. What foul occurs when a player cuts between the opponent and the ball?

- A. Advancing.
- B. Obstruction.
- C. Sticks.
- D. Blocking.
- E. Cannot answer

10. Why is it good for the offense to pass the ball from one side of the field to the other?

- A. It allows a few passes to cover a long distance.
- B. It causes the goalie to pay attention.
- C. It makes the opponents anticipate passes.
- D. It forces the defense to change positions.
- E. Cannot answer

APPENDIX H: FLOOR HOCKEY RULES GUIDE

Basic Rules

1. After a score and at the beginning of a game, play begins with a face off (3-tap and go)
2. Cannot intentionally use feet or hands to control, block, or manipulate the puck (unless you are the goalie)
3. Flicking the puck is illegal. Make every attempt to keep the puck on the ground
4. A goal cannot be scored directly from out of bounds. It must be passed in play to a teammate before scored.
5. If the puck travels out of play, it is given to the goalie to clear.
6. A goal cannot be scored off of the face off

Teams

1. Goal Keeper- job is to keep the opponent from putting the puck into his goal
2. Defense- job is to keep the puck out of their defensive half
3. Forward- job is to work with the rover and try to score
4. Rover- takes face offs, and leads the offensive play

Scoring

1. A goal is worth 1 point
2. Any puck that breaks the plane on the front pole frames on the goal count as a goal
3. A puck that goes into the goal and bounces out still counts as a goal
4. If a goal is questionable- don't count it
5. A puck deliberately kicked or hit by hand into the goal does not count.
6. Shots that accidentally rebound off players feet or bodies and go in the goal will count

Stick Safety Rules

1. Keep the stick blade on the ground when moving
2. The blade should never be above the waist before or after a shot

Goalkeeper Rules

1. May use any part of the body or stick to stop the puck
2. Cannot lie or sit on the ground to guard the goal
3. Have only 3 seconds to put the puck into play
4. To clear the puck, goalie may use feet, sticks, or may slide the puck with hands. Goalies cannot throw the puck
5. If the goalie goes outside the goalie area they may only use their stick to play the puck

Fouls/ Penalties

1. Players are not allowed to flick the puck (turnover)
2. High sticking (turnover)
3. Intentionally using feet or hands to manipulate the puck (turnover)
4. Roughing penalties- slashing, hooking, tripping, or blocking (turnover)

APPENDIX I: REFERREE SIGNALS



High-Sticking
Called when a player carries or holds his stick above the normal height of the waist



Misconduct
Called when a player uses abusive language, challenges an officials ruling



Obstruction
Called when a player gets in the way of an opponent who is not in possession of the puck



Goal Scored
Called when a goal is scored. Hand is pointed toward the team who scored

APPENDIX J: TEAM ROLES

Team Name: _____

Captain: _____

This player will: coach, runs practice and games, encourages team, communicates with teacher

Strength and Conditioning Coach: _____

This player will: design and run warm-up, bring warm-up card to each lesson

Equipment Manager: _____

This player will: be responsible for all equipment, setting up, and cleaning up equipment

Official/ Scorekeeper: _____

This player will: keep track of game scores, report scores to teacher, and keep track of team's record

APPENDIX K: TRAIT DOMINANCE SURVEY

Trait Dominance Survey- Classroom Teacher Edition

Please rate how accurately each word describes the following students as a person based on the following scale:

1	2	3	4	5
Extremely inaccurate	Slightly inaccurate	Neutral	Slightly accurate	Extremely accurate

Simply enter the number that reflects each personality trait.

Assertive: tends to be aggressive and outspoken with others

Dominant: tends to lead others, likes to command, take charge in a group

Forceful: tends to take charge around others

First Name	Last Name	Assertive	Dominant	Forceful

APPENDIX L: DATA COLLECTION PLAN

Sport Education- Floor Hockey

Lesson	Day & Date	Documents
Lesson 1	Monday 9/18/2017	
<u>Focus</u> Teacher describes unit- hockey Teacher allocates students into 12 teams of 4 students Students come up with team name and color of flag Sociometric survey		Team name and color sheet Sociometric survey
Lesson 2	Tuesday 9/19/2017	
<u>Focus</u> Teams designate roles and responsibilities Basic rules – hockey stick parts, player positions (rover, forward, defense, goalie) Perceived skill survey		Roles and responsibilities sheet Hockey stick part sheet (due 9/22) Perceived skill survey
Lesson 3	Wednesday 9/20/2017	
<u>Focus</u> Responsibilities – warm up card, design flag Attractiveness survey		Warm up card Design flag Attractiveness survey
Lesson 4	Thursday 9/21/2017	
<u>Focus</u> Dribbling Popularity survey Team practice/ drills		Popularity survey
Lesson 5	Friday 9/22/17	
<u>Focus</u> Passing- push pass and hit pass Team practice/ drills		Passing activity sheet (due 9/15)
Lesson 6	Monday 9/25/2017	
<u>Focus</u> Strategies – pressing the ball Defense- man to man and zone Team practice/ drills		Strategies sheet (due 9/27)
Lesson 7	Tuesday 9/26/2017	
<u>Focus</u> Determine rules, scoring, and boundaries Pre-season scrimmages- random 2 minute games		

Lesson 8	Wednesday 9/27/2017	
<u>Focus</u> Players learn and practice duty roles (scorer, ball retriever, referees) Pre-season scrimmages- random 4 minute games		
Lesson 9	Thursday 9/28/2017	
<u>Focus</u> Pre-season scrimmages- random 6 minute games		
Lesson 10	Friday 9/29/2017	
<u>Focus</u> Pre-season scrimmages- random 8 minute games (2 x 4 minute halves)		
Lesson 11	Monday 10//02/2017	
<u>Focus</u> Pre-season scrimmages- random 8 minute games (2 x 4 minute halves)		
Lesson 12	Tuesday 10/03/2017	
<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
Lesson 13	Wednesday 10/04/2017	
<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
Lesson 14	Thursday 10/05/2017	
<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
Lesson 15	Friday 10/06/2017	

<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
<i>Lesson 16</i>	<i>Monday 10/09/2017</i>	
<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
<i>Lesson 17</i>	<i>Tuesday 10/10/2017</i>	
<u>Focus</u> Formal competition (8 minute games, 2 x 4 minute halves)		
<i>Lesson 18</i>	<i>Wednesday 10/11/2017</i>	
<u>Focus</u> Play-offs (8 minute games, 2 x 4 minute halves)		
<i>Lesson 19</i>	<i>Thursday 10/12/2017</i>	
<u>Focus</u> Play-offs (8 minute games, 2 x 4 minute halves)		
<i>Lesson 20</i>	<i>Friday 10/13/2017</i>	
<u>Focus</u> Championship Game 8 minute game (8 minute games, 2 x 4 minute halves) Awards and presentation		

APPENDIX M: FORMAL COMPETITION SCHEDULE

Date	Time	Conference	Home Team	Away Team	Court
10/3	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3
10/4	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3
10/5	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3
10/6	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3
10/10	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3
10/11	9:00-9:15	Eastern			1
	9:00-9:15	Eastern			2
	9:00-9:15	Eastern			3
	9:15-9:30	Western			1
	9:15-9:30	Western			2
	9:15-9:30	Western			3